

Price Policy for
Kharif Crops

THE MARKETING SEASON 2021-22



सत्यमेव जयते

Commission for Agricultural Costs and Prices
Department of Agriculture, Cooperation & Farmers Welfare
Ministry of Agriculture & Farmers Welfare
Government of India
March, 2021

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Preface

I have the honour and privilege to submit “**Price Policy for Kharif Crops: The Marketing Season 2021-22**” report. The report contains the recommendations on Minimum Support Prices (MSP) for the mandated crops and a set of non-price measures. I believe that these recommendations will incentivise farmers for adoption of improved technologies and shift in cropping pattern to make *kisan Atmanirbhar* and Indian *krishi* globally competitive.

Summary of Recommendations is followed by an overview of Indian agriculture in Chapter 1. Chapter 2 of the report discusses demand-supply situation and outlook, price trends in domestic markets, terms of trade and procurement operations. Trends in productivity, yield gap analysis and important drivers of productivity are analysed in Chapter 3. Trade patterns, comparison of domestic and world prices, a review of recent trade policy changes and trade outlook are presented in Chapter 4. Costs, returns and cost projections for Kharif Marketing Season 2021-22 including inter-crop price parity issue are analysed in Chapter 5. Finally, major considerations leading to recommendations of the Minimum Support Prices and key non-price policy suggestions are discussed in Chapter 6.

Many people have assisted in preparation of this report. I take this opportunity to express my sincere thanks to State Governments, various Ministries/Departments of Government of India, farmers/farmers’ associations, representatives of organizations involved in procurement, post-harvest management, processing and marketing of agricultural commodities, agribusiness companies, and various other stakeholders for providing valuable insights and suggestions in preparation of this report. Special thanks to the Directorate of Economics and Statistics, Ministry of Agriculture & Farmers Welfare for providing data on cost estimates for this report.

Last but not least, credit goes to officers and staff of the Commission, who contributed to this report. My special thanks to Dr. Naveen P. Singh, Member (Official) for his invaluable contribution and suggestions in preparation of the report. Sincere gratitude to Sh. Anupam Mitra, Member Secretary for his contribution and efforts in preparation and timely



publication of the report. The report would not have been possible without contributions of Advisors, Shri D. K. Pandey, Dr. Mohd. Nazmuddin and Mrs. Seema, and other officers Sh. Raj Kumar, Dr. Sunil Kumar Gupta, Mrs. Manju Mary Paul, Ms. Leena Kumar, Sh. Sube Singh, Sh. Suraj Kumar Shukla, Mrs. Shivani, Mrs. Anu Malhotra, Dr. Bhavik Lukka, Md. Abdul Aleem, Sh. Mohd Shoeb, Sh. A. K. Pandey, Smt. Meenakshi Choudhary, Sh. Ashok Kumar, Sh. Chandra Kumar, Sh. Mohd. Shoeb Malik and Sh. M.K. Gupta. I would like to thank them all for their excellent contribution and support. I express my thanks to other officers and dedicated staff members the Commission for administrative support.

31th March 2021

(Vijay Paul Sharma)



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Acronyms

A ₂	Actual paid out cost
A ₂ +FL	Actual paid out cost plus imputed value of family labour
AGMARKNET	Agricultural Marketing Information Network
AGRToT	Agriculture Terms of Trade
AICRP	All India Coordinated Research Project
AMI	Agriculture Market Infrastructure
AMIS	Agricultural Market Information System
APEDA	Agricultural and Processed Food Products Export Development Authority
APMC	Agricultural Produce Market Committee
ASEAN	Association of Southeast Asian Nations
ATMA	Agricultural Technology Management Agency
BE	Budget Estimates
C ₂	Comprehensive cost including imputed rent and interest on owned land and capital
CAB	Cotton Advisory Board
CACP	Commission for Agricultural Costs and Prices
CAGR	Compound Annual Growth Rate
CCI	Cotton Corporation of India
CFPI	Consumer Food Price Index
CHC	Custom Hiring Centre
CIP	Central Issue Price
CIPI	Composite Input Price Index
CoC	Cost of Cultivation
CoP	Cost of Production
CPI	Consumer Price Index
CPO	Crude Palm Oil
CRM	Crop Residue Management
CS	Comprehensive Scheme
DAC&FW	Department of Agriculture, Cooperation & Farmers Welfare
DCP	Decentralized Procurement



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Acronyms

DES	Directorate of Economics and Statistics
DGCIS	Directorate General of Commerce Intelligence & Statistics
DGFT	Directorate General of Foreign Trade
DIPP	Department of Industrial Policy & Promotion
DMI	Directorate of Marketing & Inspection
EDI	Electronic Data Interchange
e-NAM	National Agriculture Market
EU	European Union
FAI	Fertilizers Association of India
FAO	Food and Agriculture Organisation
FAQ	Fair Average Quality
FCI	Food Corporation of India
FFPI	FAO Food Price Index
FLDs	Front Line Demonstrations
FMTTIs	Farm Machinery Training and Testing Institutes
FOB	Free on Board
FTA	Free Trade Agreement
FToT	Farmers' Terms of Trade
GDP	Gross Domestic Products
GMO	Genetically Modified Organisms
GrAMs	Gramin Agricultural Markets
GVA	Gross Value Added
GVO	Gross Value of Output
HSD	High Speed Diesel
ICAR	Indian Council of Agricultural Research
ICDS	Integrated Child Development Services
IGC	International Grains Council
IMCECA	India-Malaysia Comprehensive Economic Cooperation Agreement
KMS	Kharif Marketing Season
KVK	Krishi Vigyan Kendra
LCS	Land Custom Stations
MDM	Mid-Day Meal
MEIS	Merchandise Exports from India Scheme

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MEP	Minimum Export Price
MIP	Minimum Import Price
MoSPI	Ministry of Statistics and Programme Implementation
MRL	Maximum Residue Limit
MSP	Minimum Support Price
NABARD	National Bank for Agriculture and Rural Development
NAFED	National Agricultural Cooperative Marketing Federation of India Ltd.
NFSA	National Food Security Act
NMSA	National Mission for Sustainable Agriculture
NPC	National Productivity Council
NPK	Nitrogen, Phosphorous and Potassium
NSSF	National Small Savings Fund
NWRs	Negotiable Warehouse Receipts
OECD	Organisation for Economic Co-operation and Development
OGL	Open General License
OWS	Other Welfare Schemes
PDPS	Price Deficiency Payment Scheme
PDS	Public Distribution System
PEG	Private Entrepreneur Guarantee Scheme
PM-AASHA	Pradhan Mantri Annadata Aay Sanrakshan Abhiyan
PM-GKAY	Pradhan Mantri Garib Kalyan Anna Yojana
PM-KISAN	Pradhan Mantri Kisan Samman Nidhi
PMKSY	Pradhan Mantri Krishi Sinchayee Yojana
PMSSY	Pradhan Mantri Matsya Sampada Yojana
PPM	Parts Per Million
PPP	Public Private Partnership
PPSS	Private Procurement & Stockist Scheme
PSS	Price Support Scheme
qtl/ha	quintal per hectare
RBD	Refined Bleached and Deodorized
RE	Revised Estimates
RRB	Regional Rural Bank
SAU	State Agricultural Universities



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Acronyms

SCB	Scheduled Commercial Banks
SHC	Soil Health Card
SMAM	Sub-Mission on Agricultural Mechanization
SPS	Sanitary & Phytosanitary Measures
SRR	Seed Replacement Ratio
STE	State Trading Enterprises
TE	Triennium Ending
TMA	Transport and Marketing Assistance Scheme
TRQ	Tariff Rate Quota
UAE	United Arab Emirates
USA	United States of America
USDA	United States Department of Agriculture
VRR	Varietal Replacement Ratio
w.r.t	with respect to
WDRA	Warehousing Development and Regulatory Authority
WPI	Wholesale Price Index
WSF	Water Soluble Fertilizer
WTO	World Trade Organization

Summary of Recommendations

Price Policy Recommendations

S.1. The Commission has considered the cost of production, overall demand-supply situation and price trends in domestic and world markets, inter-crop price parity, terms of trade between agriculture and non-agriculture sector, a minimum of 50 percent as margin over the cost of production, likely effect of price policy on rest of the economy and optimal utilization of land, water and other production resources. These factors have been discussed in various chapters of this report. Considering all the relevant factors and consultations with major stakeholders, the Commission recommends that the Minimum Support Prices (MSP) of various kharif crops for KMS 2021-22 be fixed as given in the Table S.1.

Table S.1: MSPs Recommended for KMS, 2021-22

(₹/qtl)

Crops	Projected A ₂ +FL Cost for KMS 2021-22	MSP for KMS 2020-21	Recommended MSP for KMS 2021-22	MSP as percent of A ₂ +FL
Paddy-Common	1293	1868	1940 (3.9)	150
Paddy-Grade A	-	1888	1960 (3.8)	-
Jowar-Hybrid	1825	2620	2738 (4.5)	150
Jowar-Maldandi	-	2640	2758 (4.5)	-
Bajra	1213	2150	2250 (4.7)	185
Ragi	2251	3295	3377 (2.5)	150
Maize	1246	1850	1870 (1.1)	150
Tur/Arhar	3886	6000	6300 (5.0)	162
Moong	4850	7196	7275 (1.1)	150
Urad	3816	6000	6300 (5.0)	165
Groundnut	3699	5275	5550 (5.2)	150
Sunflower Seed	4010	5885	6015 (2.2)	150
Soybean (Yellow)	2633	3880	3950 (1.8)	150
Sesamum	4871	6855	7307 (6.6)	150
Nigerseed	4620	6695	6930 (3.5)	150
Cotton (Medium Staple)	3817	5515	5726 (3.8)	150
Cotton (Long Staple)	-	5825	6025 (3.4)	-

Note: Figures in parenthesis represent increase in MSP over the previous year.



Non-Price Recommendations

Liquidation of Excess Stocks

- S.2. As recommended in the Kharif Price Policy Report KMS 2020-21 and Rabi Price Policy Report RMS 2021-22, the Commission reiterates disposal of excess foodgrains stocks to save huge carrying cost of excessive stocks and ease storage space constraint.
- S.3. The Government has appreciably taken some steps in that direction by additional allocation of foodgrains under Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY) and Open Market Sale Scheme (Domestic) (OMSS(D)). Offtake of foodgrains under PM-GKAY has been quite significant but actual sale under OMSS(D) has been low. The exports of rice and wheat have also increased during 2020-21. Despite additional offtake of foodgrains and higher exports during 2020-21, rice and wheat stocks as on 28th February 2021 were 58.2 million tonnes, about 2.7 times higher than stocking norms for the quarter beginning April 1, while rice stocks were 2.1 times higher and wheat stocks were 4 times higher than stocking norms.
- S.4. In view of the above situation, the Commission suggests that additional allocation of foodgrains to Antyodaya Anna Yojana (AAY) beneficiaries and Priority Households (PHH) under National Food Security Act (NFSA) should be made, while old stocks may be diverted for other purposes such as ethanol production and feed purpose. The Commission also suggests that beneficiary households should be given 3 months ration instead of monthly quota as this will make storage space available for procurement in the ensuing season, reduce storage costs of Central and State agencies and also save the consumers from hassles of monthly visits to Fair Price Shops.
- S.5. The foodgrains management calls for a well-thought policy framework to manage higher production, procurement, and resultant stocks, thereby, shifting policy narrative from food production to food management.

Review Open-ended Procurement Policy

- S.6. Due to increased production and procurement of rice and wheat in last few years, the Government has emerged as the single largest buyer of foodgrains and driven out private sector from the market. In some rice producing States like Punjab, Haryana, and Telangana, more than 80 percent of marketed surplus of rice is procured by Government agencies, which is primarily triggered by open-ended procurement policy.
- S.7. The Commission, therefore, reiterates its earlier recommendation that the Central Government should review open-ended procurement policy for rice and wheat and take a policy decision to procure from small and marginal farmers, who constitute 86 percent of total operational holdings, and a fixed quantity from farmers having more

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than two hectare farm size. Efforts should also be made to strengthen procurement operations in other major rice producing States like West Bengal, Uttar Pradesh, Assam, Bihar, etc. to meet at least the State requirements under NFSA and other welfare Schemes.

Special Programme for Crop Diversification in North-Western Plains

- S.8. Over-dependence on rice-wheat cropping system in Punjab and Haryana due to assured procurement policy has led to serious problems of groundwater over-exploitation, soil fertility depletion, plateauing yields and distorted cropping pattern. The Commission strongly feels that this is not a desirable trend and not in the best interest of the farmers and the country. Maize, pulses, oilseeds and horticultural crops have great potential for crop diversification but due to low profitability, high risks and lack of effective procurement system in these crops compared to rice, farmers have no incentive to shift to these crops. Therefore, there is a need to reorient policy direction to reduce such distortions and encourage demand-driven sustainable crop diversification in the States.
- S.9. The Commission recommends that a comprehensive programme should be prepared for crop diversification in Punjab, Haryana and western Uttar Pradesh and both the Central and State Governments should fund the programme for minimum five years and provide direct incentive to farmers for crop diversification. The Commission reiterates its earlier suggestion that additional incentive on per hectare basis, the difference in returns from rice and alternative crops, may be paid through Direct Benefit Transfer (DBT) to farmers and such incentives will be WTO compliant under environmental sustainability programmes.
- S.10. The Commission has made conscious efforts to realign the MSPs in favour of oilseeds, pulses and nutri-cereals to encourage crop diversification but procurement system for such crops should be strengthened through Price Support Scheme (PSS), Price Deficiency Payment Scheme (PDPS) and Private Procurement and Stockist Scheme (PPSS) under PM-AASHA with active participation of private sector.

Review and Strengthen PM-AASHA

- S.11. The performance of Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA) has remained far from satisfactory. The allocation for PM-AASHA has significantly declined from ₹1,500 crore in 2019-20 to ₹400 crore in 2021-22, while expenditure under the Scheme has been extremely low.
- S.12. The Commission feels that the Scheme has great potential of benefiting the farmers but there is an urgent need to review PM-AASHA and address implementation issues. The Commission suggests that a Committee comprising of representatives from Central and State Governments and private sector should be constituted to review the Scheme and recommend changes to make it effective. The Commission also recommends that maize should be included under the PDPS and PPSS.



Participation of States in Effective Implementation of Price Support Scheme

S.13. The Price Support Scheme (PSS) depends on market situation and is implemented at the request of the concerned State/UT Government. Despite significant increase in procurement of pulses and under PSS oilseeds during the last few years, market prices have remained subdued. State Governments need to be more proactive as it is often seen that the sanctioned quantity is lower than procurement limit of 25 percent production in oilseeds and pulses, while actual procurement is much lower than the sanctioned quantity. Therefore, as procurement under PSS is done at the request of the State Governments/UTs, the Commission recommends that States should take pro-active steps to intervene in the market at right time and strengthen procurement operations by providing adequate logistical support under PSS. In addition, private sector participation should be encouraged and supported in procurement operations and creating better market linkages. The Commission is of the view that PDPS and PPSS are better options than physical procurement in case of oilseeds and maize.

Inclusion of Nutri-Cereals under Public Distribution System (PDS)

S.14. The nutri-cereals, which are climate-resilient and have high nutrient content, were a traditional staple food of the dryland regions in the country but their consumption has significantly declined over the past few decades. Some State Governments such as Odisha, Karnataka, Haryana, etc. have taken initiatives to strengthen procurement of nutri-cereals and promote household consumption through inclusion of millets in PDS and other welfare schemes.

S.15. The Commission strongly feels that inclusion of nutri-cereals under the PDS and other welfare schemes in major producing States will encourage production of these climate-resilient crops and address problem of malnutrition. To generate demand for value-added products from urban population, special Research & Development (R&D) efforts should be made to develop appropriate technologies. The Commission recommends that R&D institutions should make concerted efforts to improve productivity and shelf life of nutri-cereals, which are major constraints.

Review Fertilizer Pricing

S.16. The retail prices of Phosphatic and Potassic (P&K) fertilizers have risen sharply while, the price of urea (N) has remained almost fixed after implementation of Nutrient Based Subsidy (NBS) Scheme in 2010. The widening differential between prices of urea and P&K fertilizers has led to excess use of N at the expense of P&K fertilizers which resulted in imbalanced use of nutrients leading to decline in fertiliser use efficiency.

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- S.17. The Commission recommends that the price of urea should be increased in a phased manner and the subsidy be enhanced on P&K fertilizers to reduce their effective prices without putting any additional burden on farmers and keeping the fertilizer subsidy constant. The Commission also suggests that the ceiling on quantity of subsidized urea per hectare should be operationalized based on information from soil health card, extent of irrigation, etc. to control overuse of the nitrogenous fertiliser.

Focus on Improving Productivity and Bridging Yield Gaps

- S.18. One of the main solutions to rising cost of production and low profitability lies in improving productivity. The current yields in India are much lower than the world average and benchmark country yields. Moreover, large yield gaps exist in most crops with wide spatial variations in the country. Bridging yield gap by accelerating technological dissemination and adoption by farmers needs to be accorded the highest priority. More emphasis on R&D, irrigation, quality inputs and better farm practices in this regard will go a long way. The Commission recommends a shift in policy focus discourse involving integrated and holistic approaches to reorient from input-intensive to knowledge-intensive agriculture to bridge yield gaps whilst enhancing profitability levels.

Farm Mechanisation

- S.19. The farm-labour shortages and higher wages particularly during peak agricultural season, coupled with rising cost of production have necessitated the farm mechanisation. This will reduce unit cost of production, thereby enhancing competitiveness and farm profitability. Considering the fragmented nature of land holdings in India, it is important to address the problem of farm mechanization on a collective rather than individual basis to ensure economic viability. The Commission has noted wide inter-State disparity in number of agricultural machinery distributed as well as number of Custom Hiring Centres (CHCs), high-tech machinery hubs and farm machinery banks. The Commission recommends that special efforts should be made to increase the level of farm mechanization in States that are lagging behind in this aspect and expand the CHCs to enable small and marginal farmers adopt farm mechanization. The issue of high GST on farm machinery needs to be addressed.

Improved Access and Distribution of Institutional Credit

- S.20. Despite substantial increase in flow of credit to agriculture, several challenges of accessibility in credit to small and marginal farmers/tenant farmers/sharecroppers/landless labourers and disparity in distribution of agricultural credit remain. In Tamil Nadu, agricultural credit is more than double the Gross Value Added (GVA) from crop sector, while in States like West Bengal, Madhya Pradesh and Jharkhand it is less than 35 percent.



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- S.21. The Government has appreciably taken some steps in this direction and launched Kisan Credit Card (KCC) saturation drive to provide universal access to institutional concessional credit to all farmers with special focus on coverage of PM-KISAN beneficiaries. The Commission believes that such initiatives will help in facilitating easy access to institutional credit; however, concerted efforts are needed to improve credit off-take by small and marginal farmers, Central, Eastern and North-eastern States and address issue of over-borrowing in some States.

Remove Market Distortions

- S.22. Agricultural markets face various distortions ranging from domestic marketing to restrictions on stockholding, high fees/charges, bonus on MSP, trade restrictions, etc. leading to market imperfection that jeopardise interplay of demand and supply dynamics. Some States impose high market fee and other charges as well as pay bonus on the MSP, which affect inter-crop parity and drive out the private trade and investment. However, it needs to be appreciated here that the Central Government has made amendments in Essential Commodities Act (ECA) and introduced reforms in agricultural marketing system to remove some of these distortions and create competitive and efficient markets. The Commission is of the opinion that efforts may be made to achieve convergence in market taxes and cess across States to create a national market. The Commission recommends that States should be persuaded to reduce such charges and procurement should be restricted in the States, which levy high fees and other charges and pay bonus.

Develop Robust Commodity Outlook and Regional Crop Planning

- S.23. Market information on prices and demand-supply situation is an important instrument in obtaining early signals of price situation and managing price volatility. Food consumption patterns are changing due to various factors leading to demand-supply mismatch for some commodities. Optimum crop plan at regional levels based on agro-climatic conditions and other resource endowments should be prepared to meet changing demand patterns. The Commission recommends that robust market intelligence and commodity outlook system should be developed to provide regular advisories to farmers in order to make informed decisions about production and marketing of their produce. The Agro-Economic Research Centres/ Units under the Directorate of Economics and Statistics, Ministry of Agriculture & Farmers Welfare can help in generating field level data on prices, demand-supply situation and market outlook reports based on farm-level empirical evidences. In the medium to long term, efforts should be made to develop regional crop plan based on regional resource endowment and local taste.

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Promote Food Processing and Value-Addition

S.24. The demand for high-value crops and processed foods has considerably increased due to rising incomes, increasing urbanisation, rapidly expanding markets, advances in technology and liberalized trade. Thus, promotion of value-addition is imperative for increasing nutritional status and providing employment as well. It is important to note that the value-addition in India is less than 10 percent, while it is more than 50 percent in countries like Brazil, Indonesia, USA, etc. Government has taken several initiatives for encouraging food processing including 100 percent FDI at the forefront of developmental agenda and launched various schemes to promote agro-processing in the country. The Commission calls for a coordinated effort in a mission mode to reduce post-harvest losses, enhance value-addition, and thereby increase exports.

Improving Information on Market/Mandi Prices (Agmarknet)

S.25. It is generally recognised that information on market prices of agricultural commodities has improved over time but is far from adequate. The prospects for improvement in collection of mandi prices are more promising and it would help in better policy formulation and analysis. The Commission recommends that in addition to the variety of a crop, quality of produce (FAQ/non-FAQ) should be included in the mandi prices collected through Agmarknet Portal.

Awareness about MSP and FAQ Norms

S.26. Several studies have pointed out that there is lack of awareness among farmers about the MSP and procurement operations. The Commission recommends that Central and State Governments should leverage ICT tools, social media platforms, electronic and print media to give wide publicity of MSP, various components of PM-AASHA, details of procurement centers, procurement period, registration/documents requirements, and information about procurement agencies as well as Fair Average Quality (FAQ) specifications of grains.

Review Number of Commodities under Commission's Mandate

S.27. The Commission has carefully examined that the number of agricultural commodities under its mandate is too large. As production of some commodities such as sunflower, nigerseed, safflower, etc. has substantially declined, recommending MSP for such agricultural commodities does not serve any purpose. Therefore, it is recommended that the number of commodities under the MSP regime may be reviewed.



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Issues Related to Sample Size in Cost Estimation

- S.28. The sample size in certain crops under the 'Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in India' is small and can adversely affect the reliability of cost estimates. The Commission, therefore, strongly recommends that sample size for the crops should be increased and made more representative to have reliable estimates.



Overview

- 1.1. The COVID-19 pandemic has brought significant disruptions in agriculture sector affecting both supply and demand and put pressure on livelihoods of millions of farmers and agribusinesses around the world. However, Indian agriculture sector has shown resilience and performed exceptionally well during the pandemic, which is evident from significantly higher growth rate than other sectors of the economy. The Gross Value Added (GVA) at Basic Prices (2011-12 prices) from 'agriculture, forestry and fishing' sector is estimated to increase by 3.7 percent during 2020-21, while total GVA is estimated to decline by 6.5 percent in 2020-21. The performance can also be gleaned from the Second Advance Estimates of Production of Foodgrains for 2020-21, which is expected to reach new high of 303.3 million tonnes in 2020-21, about 2 percent increase over 2019-20. The overall record production is driven by higher production of rice, wheat, maize and pulses. Agricultural exports are expected to be higher in 2020-21 due to increased exports of rice, cotton, oil meals, wheat and sugar.
- 1.2. Foodgrains production, for the first time, is likely to cross a 300 million tonnes mark in 2020-21, with production of rice at 120.3 million tonnes and wheat at 109.2 million tonnes. Maize production is estimated at 30.2 million tonnes, an increase of 4.8 percent over the last year, while nutri-cereals production is likely to be marginally lower at 17.2 million tonnes. However, among nutri-cereals, ragi production is expected to increase from about 1.76 million tonnes in 2019-20 to 1.87 million tonnes in 2020-21, while production of jowar and bajra is expected to fall marginally. Further, total pulses production is expected to increase to 24.4 million tonnes in 2020-21, 6.1 percent higher than 2019-20. Production of total nine oilseeds in 2020-21 is likely to be higher than 2019-20 by 12.3 percent at 37.3 million tonnes, driven by higher production of soybean (22.1%) and mustard (14.3%). Cotton production, after registering an impressive growth of 28.6 percent in 2019-20, is expected to record moderate growth of 1.3 percent in 2020-21. All-India area, production and yield of mandated kharif crops during last 10 years are given in Annex Tables 1.1-1.3 and shares of major producing States in total production during the Triennium Ending (TE) 2019-20 are given in Annex Table 1.4.
- 1.3. During 2020, above normal rainfall during the south-west monsoon (June-September), 109 percent of Long Period Average (LPA) of 88 cm, and normal rainfall (101% of LPA) during northeast monsoon season (October-December) over the country contributed significantly to higher foodgrains production. According to Central Water Commission (CWC) Reservoir Storage Bulletin of 11th March 2021, live



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storage available in 130 reservoirs in the country was 84.376 Billion Cubic Meters (BCM), which was 48 percent of total live storage capacity of these reservoirs, 88 percent of live storage of corresponding period of last year and 123 percent of storage of average of last ten years. Overall storage position is less than the corresponding period of last year but is better than the average storage of last ten years during the corresponding period.

- 1.4. Over the past few years, Government has taken several initiatives for modernizing agriculture and improving farmers' income. In 2020, the Central Government introduced historic reforms in agricultural marketing system, which will help in attracting private investment in creating post-harvest infrastructure, efficient value chains and agro-processing. Agriculture Infrastructure Fund of ₹ one lakh crore will help in creating post-harvest management infrastructure at farm gate for farmers, while Central Sector Scheme "Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)" with a budgetary provision of ₹6,865 crore for 5 years will strengthen linkages with markets and agri-value chains. In order to provide seamless logistics, Kisan Rail was launched to transport perishables and agri-products, including milk, meat and fish and Indian Railways have operated 208 Kisan Rail services transporting approximately 68 thousand tonnes of perishables upto 5th February 2021 since the launch of first Kisan Rail service on 7th August 2020.

India's Agriculture Trade Scenario

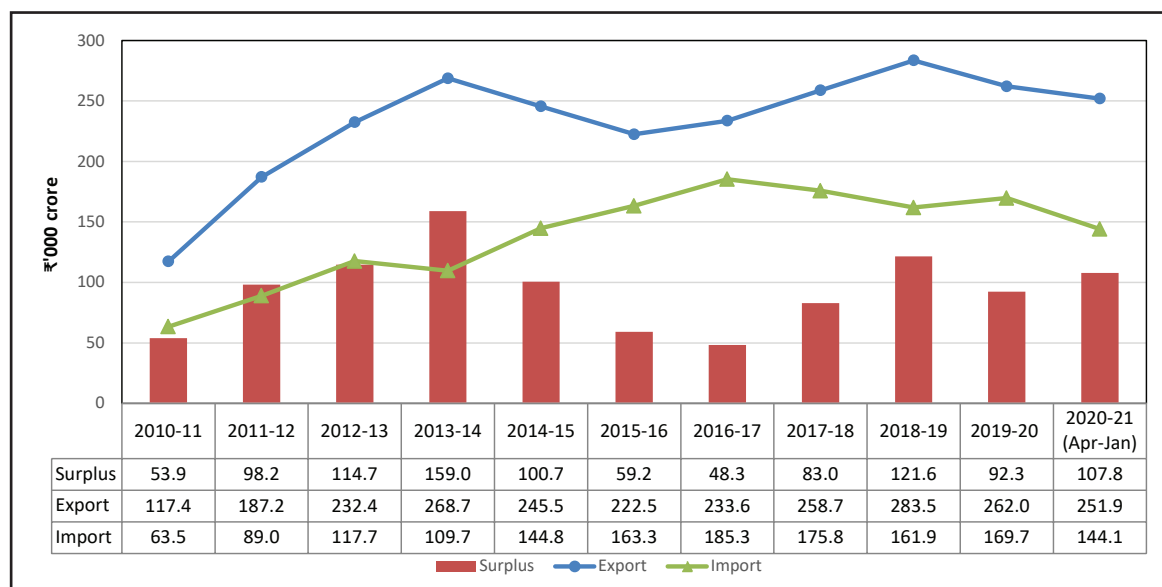
- 1.5. In 2019-20, the value of agricultural exports declined by 7.6 percent, after three consecutive years of increase (Chart 1.1). Agricultural exports amounted to ₹2.62 lakh crore in 2019-20. Despite COVID-19 challenges, agricultural exports are expected to be higher in 2020-21 compared to 2019-20. Indian exports of agricultural commodities have risen from ₹2.15 lakh crore during 2019-20 (April-January) to ₹2.51 lakh crore during 2020-21 (April-January), increase of 16.8 percent. Increase in exports are mainly driven by higher agricultural production, which remained relatively unaffected by COVID-19 disruptions due to various timely interventions by the Government, and a significant increase in global food commodity prices. Rice exports, a major export commodity in export basket, increased by 42.2 percent in 2020-21 (Apr-Jan) over the corresponding period in 2019-20. Other products that registered high growth in exports include spices, sugar, cotton, oil meals, wheat, groundnut, fresh vegetables, processed fruits and juices, etc.
- 1.6. During 2019-20, agricultural imports increased by 4.9 percent, after two consecutive years of decline and higher imports were mainly driven by increased imports of cotton (5.5%), spices (6%) and pulses (6%). Agricultural imports in 2020-21 (April-January) remained virtually unchanged at ₹1.44 lakh crore as in 2019-20 (April-January). Within the import basket, import of pulses increased 20.9 percent and vegetable oils 18.7 percent. Other major products that witnessed higher imports included fresh fruits and sugar. On the other hand, imports of cashew, spices, wood products, natural rubber and cotton declined during 2020-21 (April-January)

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compared with the corresponding period of 2019-20. The agricultural trade surplus has improved from about ₹71 thousand crore 2019-20 (April-January) to ₹107 thousand crore in 2020-21 (April-January).

Chart 1.1: Trends in India's Exports and Imports of Agricultural Products, 2010-11 to 2020-21



Source: Directorate General of Commercial Intelligence and Statistics, Ministry of Commerce & Industry

Central Pool Stocks and Challenges in Management of Surplus Stocks

- 1.7. Rice procurement, for the first time, crossed a half-century mark with about 52 million tonnes in 2019-20, an increase of 17.1 percent over the last year. The number of beneficiary farmers also crossed one crore at about 1.25 crore in 2019-20, about 28.5 percent higher than 2018-19. However, record production and open-ended procurement policy has led to mounting grain stocks, thereby, putting strain on storage infrastructure and higher economic cost leading to rising food subsidy bill. The economic cost of rice has increased from ₹2,615.5 per quintal in 2013-14 to ₹3,999.4 per quintal in 2020-21 (RE). The record production of wheat in 2020-21 is likely to pose a major storage problem, as storage capacity with Food Corporation of India (FCI) and State Government agencies as on 31st January, 2021 was about 80.7 million tonnes, 65.7 million tonnes covered and 15 million tonnes Cover and Plinth (CAP).
- 1.8. In June 2020, the country had record stocks of 83.5 million tonnes, 27.4 million tonnes of rice and 55.8 million tonnes of wheat. Additional allocation of about 33.9 million tonnes foodgrains to 80.96 crore beneficiaries under Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY), has resulted in decline in stocks. Under Open Market Sales Scheme (Domestic), about 2.33 million tonnes of rice and 2.28 million tonnes of wheat were sold in open market till 3rd March 2021 against 20 million



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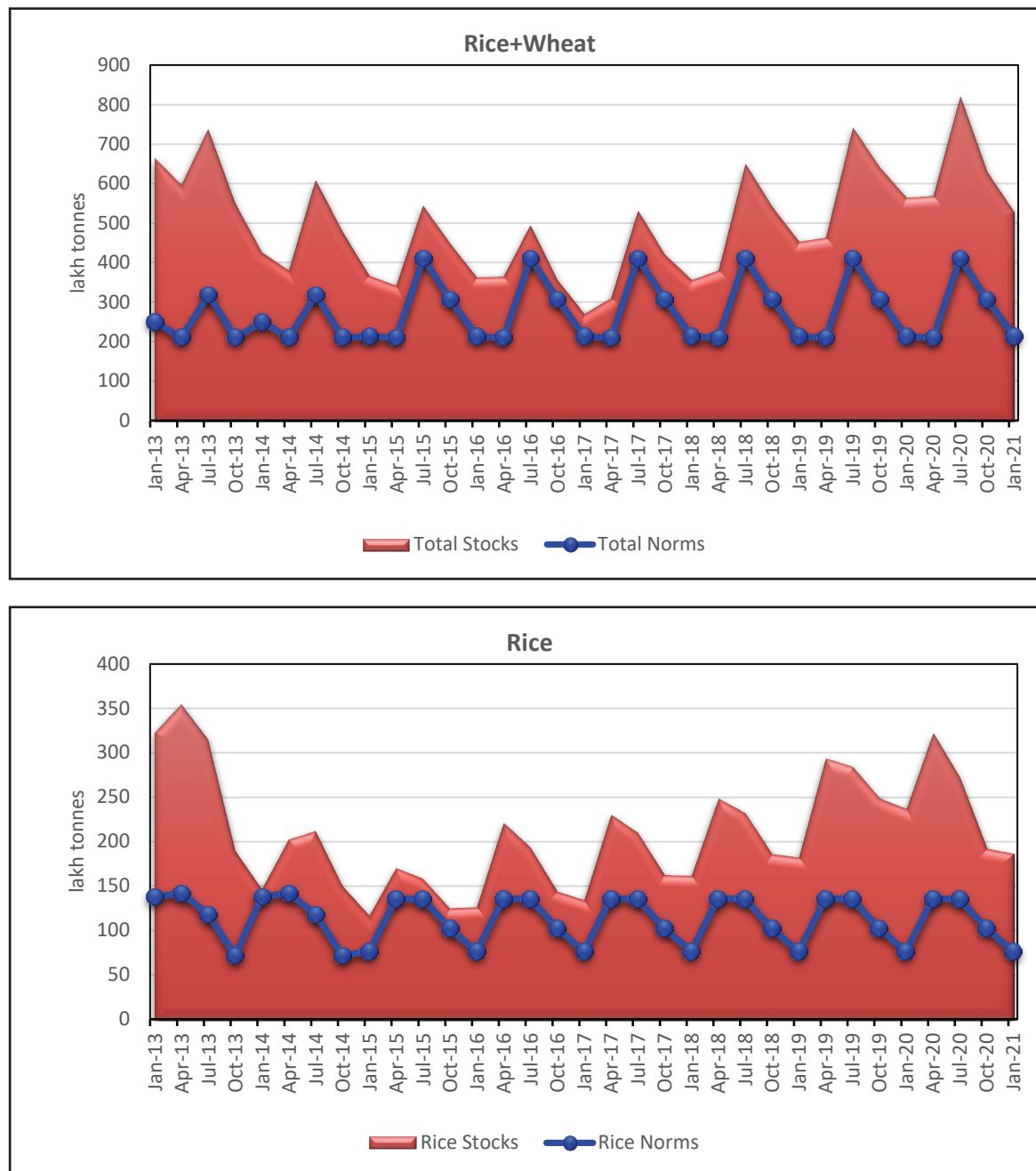
tonnes (15 million tonnes of wheat and 5 million tonnes of rice) fixed for 2020-21. Total rice and wheat stocks as on 28th February 2021 were 58.2 million tonnes, marginally lower than previous year but 30.2 percent lower than in June 2020. Rice stocks were 8.8 percent lower than last year but wheat stocks were 7.3 percent higher compared with the last year. However, total rice and wheat stocks were 2.7 times higher than stocking norms for Central Pool for the quarter beginning April 1. Rice stocks were 2.1 times higher and wheat stocks were 4 times higher than stocking norms (Chart 1.2).

- 1.9. With wheat production estimated at record 109.2 million tonnes and forecast of higher procurement of rice and wheat in coming season, as per FCI estimates, central pool stocks are likely to be 104.4 million tonnes on July 1, 2021, about 63.3 million tonnes higher than stocking norms. Rice stocks are estimated to be 3.4 times more than stocking norms, while wheat stocks are expected to be more than double the stocking norms in July 2021. The excess stocks will put pressure on exchequer in terms of higher storage and financing costs, and create storage space shortage.
- 1.10. The Central Government should review open-ended procurement policy and take a policy decision to restrict rice and wheat procurement from small and marginal farmers and a fixed quantum of procurement from semi-medium, medium and large farmers which would benefit more than 90 percent of farmers. To liquidate excess stocks, additional allocation of foodgrains to Antyodaya Anna Yojana (AAY) beneficiaries and Priority Households (PHH) under National Food Security Act (NFSA) and Other Welfare Schemes (OWS) should be made. Open market operations and exports are other options for offloading excess foodgrains stocks. Further, special efforts should be made to expand procurement of nutri-cereals and inclusion of nutri-cereals under NFSA and other welfare schemes like Integrated Child Development Services (ICDS), Mid-Day Meal (MDM), etc. This is necessary to mainstream nutrition-approach in developmental policies and bring about rationality in pricing, contain burgeoning stocks of grains and food subsidy bill and promote diversification of agriculture. It is worth mentioning that Government of Odisha has launched “Special Programme for Promotion of Millets in Tribal Areas” in 72 blocks in 14 districts to revive millets in rainfed farming systems and promote household consumption. The procurement of ragi in the State has increased from about 18 thousand quintals in 2018-19 to over one lakh quintals in 2020-21.

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Chart 1.2 : Trends in Stock Position and Stocking Norms of Rice and Wheat in the Central Pool, January 2013 to January 2021



Source: Department of Food and Public Distribution, Ministry of Consumer Affairs and Public Distribution

Ensuring Remunerative Prices to Farmers

1.11. To ensure remunerative prices to farmers, in addition to existing Schemes for procurement of paddy, wheat, coarse grains and jute, a new umbrella Scheme “Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA)” comprising of



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Price Support Scheme (PSS) for pulses, oilseeds and copra, Price Deficiency Payment Scheme (PDPS) for oilseeds and Pilot of Private Procurement & Stockist Scheme (PPSS) for oilseeds was launched in 2018.

- 1.12. There has been significant increase in procurement and number of beneficiary farmers over the years. The number of paddy farmers who benefitted from procurement operations has increased significantly from about 73 lakh in 2015-16 to about 1.25 crore in 2019-20, an increase of over 70 percent, while procurement of rice has increased from 34.2 million tonnes to nearly 52 million tonnes during the period. However, there are large variations in procurement as well as beneficiary farmers across the States. During the TE2019-20, Punjab had the largest share (25.3%) in rice procurement, while other major rice producing States like Uttar Pradesh (7.4%), West Bengal (4.1%), Bihar (2.3%) and Assam (0.3%) had very low share in procurement. However, during the last five years, rice procurement has increased by 67.2 percent in Uttar Pradesh, 17.2 percent in West Bengal and 10 percent in Bihar. Similarly, coverage of beneficiary farmers under rice procurement is high in Punjab (116.8%) and Haryana (114.9%) while, top two producers, namely, Uttar Pradesh (4.2%) and West Bengal (9.4%) have low coverage¹. Majority of farmers in Uttar Pradesh, West Bengal and other Eastern and North-Eastern States are marginal and small with poor access to Government procurement, and resort to distress sale. Therefore, there is a need to bring more farmers from these States under the ambit of procurement operations.
- 1.13. There has been a significant increase in procurement of pulses and oilseeds during the last few years. Total procurement of pulses has increased from about 8,000 tonnes in 2017-18 to about 42 lakh tonnes in 2018-19, which declined to 14.9 lakh tonnes during the 2019-20 season due to improved prices. During 2020-21, procurement of pulses under PSS was 21.8 lakh tonnes (as on 11th March 2021) valued at ₹1,069 crore. In case of oilseeds, procurement under PSS has increased from about two lakh tonnes in 2016-17 valued at ₹4,256 crore to 18.2 lakh tonnes (₹8,262.7 crore) in 2019-20 and was lower at about 10.9 lakh tonnes in 2020-21 due to lower market arrivals as market prices were high. Around 87.7 lakh pulses and oilseeds farmers have benefitted from procurement operations during the last five years. Effective participation of States/UTs is necessary to improve effectiveness of procurement operations under PSS, as procurement depends on market situation and based on request from States/UTs. The overall procurement quantity is fixed at 25 percent of actual production of the commodity for a year/season, and in case State/UT Governments intends to procure over 25 percent of production, they can procure at their own cost and through own agencies. However, so far, restriction of 25 percent of production has not been a constraint as the sanctioned quantity as well as actual procurement have been much lower in most of the States.

¹ Number of paddy operational holdings as per All India Report on Agriculture Census 2015-16 has been taken as a proxy to number of paddy farmers

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- 1.14. The Commission is of the view that PDPS and PPSS under PM-AASHA have great potential to ensure remunerative prices to farmers for pulses, oilseeds and other commercial crops. However, progress of PM-AASHA has remained far from satisfactory, e.g., budget allocation of ₹1,400 crore under PM-AASHA during 2018-19 remained unutilized and allocation for 2019-20 was reduced from ₹1,500 crore (BE) to ₹321 crore (RE) and actual expenditure was ₹313.2 crore. The allocation was further reduced to ₹ 500 crore in 2020-21 (BE) and revised to ₹200 crore in 2020-21 (RE) but no expenditure was incurred up to 12th March 2021. During 2021-22, an allocation of ₹400 crore has been made for PM-AASHA Scheme in the Union Budget. Therefore, special efforts are needed to popularize the Scheme among State Governments, private sector players and other stakeholders.

Food Inflation

- 1.15. Global food prices, as measured by a FAO Food Price Index (FFPI), registered a new high in February 2021 since July 2014, rising by more than 16 percent year-on-year, underpinned by large increases in the prices of cereals (26.5%) and edible oils (51.1%) and moderate rise in dairy (9.9%) and sugar (9.5%) prices. The FAO All Rice Price Index (2014-2016=100) rose for the third successive month in February 2021 to reach 116 points, 11.4 percent above February 2020 level, driven by surge in price indices of lower quality *indica* (17.8%) and *japonica* (12.5%) rice. World maize prices in February were 45.5 percent higher than the previous year due to strong import demand, especially from China and shrinking exports. The FAO Vegetable Oil Price Index averaged 147.4 points in February, the highest level since April 2012, due to rising prices of palm, soybean, rapeseed and sunflower oil on account of low stocks in major exporting countries and lower production forecast for 2021.
- 1.16. The Consumer Food Price Index (CFPI) inflation in the country, after remaining subdued in the last few years, recorded a rising trend in 2019 and 2020. During the last six months, year-on-year inflation rate based on CFPIs was the highest (11%) in October 2020 mainly driven by vegetables (18.39%), meat and fish (18.63%), pulses and products (18.34%), oils and fats (15.17%), spices (11.28%), while cereals and products recorded a moderate inflation rate (3.53%). The inflation rate based on CFPIs for all-India showed declining trend during the last three months and was 1.89 percent in January 2021 due to fall in inflation rate of vegetables (-15.84%), cereals and products (0.07%), eggs (12.85%), while inflation rate of oils and fats, and fruits showed an increase. In February 2021, inflation rate increased to 3.87 percent, with oils and fats (20.78%), pulses and products (12.54%), meat and fish (11.34%) and eggs (11.13%) recording significantly high inflation rates.
- 1.17. The annual rate of inflation for 'Food Articles' based on Wholesale Price Index (WPI) also followed almost a similar trend. During last six months, inflation was the highest (8.37%) in September 2020 due to high rate of inflation in vegetables (38.12%) and pulses (12.53%). Thereafter, a declining trend was observed and WPI based inflation of food articles was (-)2.8 percent in January 2021 due to steep decline in cereals



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(-7.34%), particularly wheat (-11.62%), vegetables (-20.82%) and egg, meat and fish (-1.76%). The rate of inflation based on WPI Food Articles increased from (-)2.8 percent in January 2021 to 3.31 percent in February 2021 and pulses (10.25%), onion (31.28%) and fruits (9.48%) contributed to the increase.

Agricultural Marketing Reforms

- 1.18. Reforms to agriculture marketing system in the country have been attempted for over last two decades. The Government appointed an Expert Committee in 2000 and Inter-Ministerial Task Force in 2001 to examine the recommendations of the Expert Committee. The Model APMC Act, 2003 and Model APMC Rules, 2007 were circulated to States for adoption. Various other committees/working groups such as Empowered Committee of 10 States in 2010, Working Group on Agricultural Production (2010), Five Year Plan Working Group of Planning Commission, Committee of State Ministers, In-charge of Agricultural Marketing (2013), NITI Aayog Task Force on Agriculture Development, Doubling Farmers Income Committee, Model Agriculture Produce and Livestock Marketing (APLM) Act 2017, Model Agriculture Produce and Livestock Contract Farming Act 2018, etc. had recommended various agri-marketing reforms.
- 1.19. To create a free and efficient agricultural marketing ecosystem and unlock opportunities for new investments, Government has introduced landmark reforms in the recent years. Farmers' Produce Trade and Commerce (Promotion & Facilitation) Act, 2020 will provide farmers more choice in selling their produce, facilitate inter-state movement and bring transparency and better services. The Farmers (Empowerment & Protection) Agreement on Price Assurance and Farm Services Act, 2020 will create direct linkages between buyer and seller and better access to modern technology and quality inputs. The Essential Commodities (Amendment) Act, 2020 that deregulates various agricultural commodities will attract investment in storage facilities, cold storages etc., ensure better price realization for farmers and stability in market prices for consumers.

Market Infrastructure

- 1.20. Realising opportunities in transforming agriculture requires improved marketing and value-addition infrastructure through both public and private investment. The Government has accorded high priority for development and modernisation of agricultural market infrastructure. The Central Sector Scheme of Financing Facility under 'Agriculture Infrastructure Fund' was launched in 2020, under which financing facility of ₹1,00,000 crore will be provided for funding agriculture infrastructure projects at farm-gate and aggregation points and post-harvest management as well as for augmenting infrastructure facilities of Agricultural Produce Market Committees (APMCs). Government has set up Agri-Marketing Infrastructure Fund (AMIF) with a corpus of ₹2,000 crore to develop and upgrade agricultural marketing infrastructure in 22,000 rural haats into Gramin Agricultural Markets (GrAMs) and

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APMCs. The 2021-22 Union Budget introduced “Agriculture Infrastructure and Development Cess” (AIDC) on a small number of items to generate resources for improving agricultural infrastructure.

- 1.21. The National Agriculture Market (e-NAM), which was launched in April 2016 to create a unified national market for agricultural commodities, has made impressive progress as about 1.7 crore farmers are registered and ₹1.22 lakh crore of trade value has been carried out through e-NAMs. In addition to 1,000 mandis already integrated with e-NAM, 1,000 more mandis will be integrated with the platform.

Direct Income Support to Farmers: PM-KISAN

- 1.22. Pradhan Mantri Kisan SAMman Nidhi (PM-KISAN), a Central Sector Scheme with 100 percent funding from Government of India, was launched on 1st December 2018 under which an income support of ₹6,000 per year was provided to small and marginal farmers in three equal instalments of ₹2,000 subject to certain exclusions relating to higher income groups. The Scheme was later expanded to cover all farmers in May 2019. Under the Scheme, more than ₹1.15 lakh crore (up to 24th February, 2021) has been disbursed to 10.78 crore farmer families since the inception of the Scheme. Uttar Pradesh has the highest number of beneficiaries (2.43 crore) followed by Maharashtra (1.09 crore), Madhya Pradesh (83 lakh), Bihar (78 lakh), Rajasthan (70.52 lakh), Gujarat (57.84 lakh) and Andhra Pradesh (53.4 lakh). West Bengal has not joined the Scheme.
- 1.23. Many States have implemented similar Schemes, e.g., “YSR Rythu Bharosa” Scheme by Andhra Pradesh, “Agriculture Investment Support Scheme” (“Rythu Bandhu”) by Telangana, “Krushak Assistance for Livelihood and Income Augmentation - KALIA” by Odisha, Mukhya Mantri Kisan Kalyan Yojana in Madhya Pradesh, Rajiv Gandhi Kisan Nyay Yojana in Chhattisgarh, Krishak Bandhu Scheme of West Bengal, etc.

Agricultural Credit

- 1.24. The Government has given high priority to extend the reach of institutional credit to farmers and provide interest subvention on short-term crop loans up to ₹3 lakh. The agriculture credit flow has increased from about ₹9.15 lakh crore in 2015-16 to ₹13.93 lakh crore in 2019-20, more than 50 percent increase. The target for 2020-21 was ₹15 lakh crore, which has been increased to ₹16.5 lakh crore for 2021-22. However, the issue of inequality in distribution of agricultural credit across States and farm categories is a matter of concern and needs to be addressed. In some States, agricultural credit is higher than their gross value added (GVA) from agriculture, indicating the possibility of diversion of credit for non-agricultural purpose.
- 1.25. With the goal of providing universal access to institutional concessional credit to all farmers including animal husbandry, dairy and fisheries, Kisan Credit Card (KCC) saturation drive was initiated in February 2020 with special focus on coverage of



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PM-KISAN beneficiaries and a target of issuing additional 2.5 crore KCCs has been set. Significant progress has been made in this direction as more than 1.82 crore KCCs have been issued to eligible farmers.

Farm Mechanization

- 1.26. Indian agriculture is facing critical labour shortages, rising labour costs, and a major constraint on both farm profitability and global competitiveness. To address the issue, Sub-Mission on Agricultural Mechanization (SMAM) is being implemented since April 2014 under the Umbrella Scheme 'Green Revolution – Krishonnati Yojana'. In addition, to address paddy straw burning and protect environment from air pollution as well as prevent loss of nutrients and soil micro-organisms due to burning of crop residue, a 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 Delhi" was implemented in April 2018. The Scheme promotes in-situ management of crop residue by retention and incorporation into the soil with appropriate mechanization and creates awareness through demonstration and capacity building activities for effective utilization and management of crop residue. About ₹6,026 crore has been spent under both programmes since inception of the Schemes.
- 1.27. Since majority of Indian farms are small and fragmented, investment in large machinery is not a viable option. Therefore, expansion of agricultural machinery services through Custom Hiring Centres (CHCs) offers the possibility of increased mechanization on such farms. There is a need to develop sustainable agricultural mechanization strategies and supportive policies that can promote agricultural mechanization practices and technologies among farmers. Both public and private sector should work together to support innovations in mechanization and disseminate knowledge on agricultural mechanization to promote mechanization initiatives at the field level.

Crop Diversification

- 1.28. Over-dependence on rice-wheat cropping system combined with availability of free power in North-western plains has resulted in depletion of groundwater and deterioration of soil quality, posing a serious threat to sustainability. As per Central Ground Water Board report on Dynamic Ground Water Resources of India, 2017, 79 percent of blocks in Punjab and 61 percent in Haryana were in 'Over-Exploited' category indicating groundwater extraction exceeding the annual replenishable groundwater recharge. Additionally, even though crop yields in these States are high, yields have started plateauing. Therefore, there is a need for crop diversification towards maize, pulses, oilseeds, and horticultural crops. The Commission feels that the right strategy should be to change policy direction first by correcting the factors that contribute to such distortion and then by adopting measures that encourage demand driven crop diversification including attractive price incentives and supportive marketing/procurement systems.

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- 1.29. The Government has recognized the problem of mono-cropping and subsequent non-judicious resource use. To contain this effect, Crop Diversification Programme (CDP) was launched in 2013-14 to shift area under paddy to other alternative crops in original Green Revolution States. However, not much progress has been made so far on crop diversification in the region because of low returns and high risks from alternative crops, lack of assured marketing and remunerative prices, non-availability of appropriate proven technology for alternative crops, etc. State Governments have also taken some initiatives to promote crop diversification. Government of Haryana has launched 'Mera Pani Meri Virasat' Scheme for crop diversification with a target of bringing one lakh hectare area under maize, cotton, bajra, pulses and horticulture crops through giving ₹7,000 per acre, assured procurement at MSP and farm machinery to farmers. Government of Punjab has allocated ₹200 crore in the budget 2021-22 for undertaking crop diversification measures during the year. However, a major policy shift in pricing and procurement for alternative crops as well as substantial investment in Research and Development (R&D), market infrastructure and value-addition are needed.

Storage and Warehousing

- 1.30. The storage capacity in the country has increased over last two decades, however, increased production and procurement due to open-ended procurement policy has led to huge stocks and shortage of scientific storage. The total storage capacity available with FCI and State Government agencies for storage of foodgrains as on 31st January 2021 was about 80.7 million tonnes. Of the total capacity, 65.7 million tonnes was covered storage and about 15 million tonnes (18.6%) was CAP (cover and plinth) storage. The total stocks of rice and wheat held by FCI and State agencies as on 28th February 2021 were about 57.8 million tonnes.
- 1.31. Government is implementing various Schemes for creating scientific storage facilities in the country. To promote Public Private Partnership (PPP) in creation of storage facilities, Government introduced "Private Entrepreneur Guarantee Scheme" (PEG) in 2008 and about 14.4 million tonnes of capacity has been created under the Scheme as on 30th November 2020. In addition, Ministry of Agriculture and Farmers Welfare is implementing a capital investment subsidy sub-scheme Agricultural Marketing Infrastructure (AMI) under Integrated Scheme for Agricultural Marketing (ISAM) for creating storage facilities. Efforts should be made to create scientific storage systems at farm level and modernize grain handling and storage infrastructure in the country for efficient and effective handling of grains.
- 1.32. The Negotiable Warehouse Receipts (NWRs) System was launched in 2011 and Electronic Negotiable Warehouse Receipt (e-NWR) System in 2017 to provide loan to farmers against electronic warehouse receipts of agricultural commodities. As on 30th November 2020, 3,433 (1,831 valid registration) warehouses were registered with Warehousing Development and Regulatory Authority (WDRA) and total loan of about ₹2,522 crore has been financed against NWRs/e-NWR since its inception.



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The financing on e-NWR will get a boost after the integration of e-NWR with e-NAM. There is a need to promote and popularize NWRs financing among farmers.

Food Processing and Value Addition

- 1.33. Demand for high-value crops and processed products has considerably increased owing to rising income, increasing urbanization, rapidly expanding markets, advances in technology and liberalized trade. However, value-addition in India is less than 10 percent while it is more than 50 percent in countries like Brazil, Indonesia, USA, etc. Recognizing importance of food processing and value-addition, the Government has placed the food processing industry at the forefront of development agenda and launched several Schemes to promote agro-processing in the country. The Central Sector Scheme – SAMPADA (Scheme for Agro-Marine Processing and Development for Agro-Processing Clusters) with an allocation of ₹6,000 crore was approved in 2017 for agro-marine processing and development of agro-processing clusters. Pradhan Mantri Matsya Sampada Yojana (PMMSY) with a total estimated investment of ₹20,050 crores for development of fisheries sector will be implemented from 2020-21 to 2024-25. Animal Husbandry Infrastructure Development Fund (AHIDF) with an outlay of ₹15,000 crore has been approved for setting up dairy and meat processing facilities and value-addition infrastructure. Under Aatmanirbhar Bharat Abhiyan, a Centrally Sponsored Scheme “PM Formalisation of Micro Food Processing Enterprises (PM-FME) Scheme” with an outlay of ₹10,000 crore for providing financial, technical and business support for upgradation of existing micro food processing enterprises was implemented in June 2020. The “Operation Greens” Scheme for Tomato, Onion and Potato (TOP) has been extended to all fruits and vegetables (TOTAL) for a period of six months on pilot basis as part of Aatmanirbhar Bharat Abhiyan.
- 1.34. The Commission believes that these initiatives and recent reforms in regulatory frameworks will pave the way for new opportunities in food processing sector. Government, private sector, farmers and other stakeholders need to partner in such endeavours.

Outlook for Indian Agriculture

- 1.35. As per Second Advance Estimates for 2020-21, total foodgrains production in the country is estimated at 303.3 million tonnes and kharif foodgrains production is estimated to increase by 2.9 percent at 147.95 million tonnes. Total rice production during 2020-21 is estimated at 120.3 million tonnes, about 7 percent higher than the last five-year average production of 112.4 million tonnes. In addition, there are excess stocks of rice held by FCI and State agencies at 28.2 million tonnes as on 28th February 2021 as against the buffer stock norm of 13.58 million tonnes (as on 1st April of each year). Additional allocation of rice under PM-GKAY and other Schemes due to COVID-19 pandemic and higher exports in 2020-21 have been able to liquidate rice stocks but problem of excess stocks in 2021-22 will remain key

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issue requiring concerted efforts. In 2020-21, total maize production is expected to increase by 4.3 percent, while kharif maize production is estimated to increase by more than 10 percent compared to 2019-20. Total pulses production during 2020-21 is estimated at 24.4 million tonnes, about 1.4 million tonnes more than in 2019-20. Total oilseeds as well as kharif oilseeds production is estimated to increase significantly by about 12.4 percent in 2020-21. Cotton production is estimated to increase marginally (1.3%) to 36.5 million bales in 2020-21.

- 1.36. The above normal rainfall during the south-west monsoon, normal rainfall during north-east monsoon season and comfortable storage position of 130 reservoirs are expected to contribute to increased foodgrains production in the country in the ensuing season.

World Outlook

- 1.37. According to the latest Agricultural Market Information System (AMIS) Market Monitor of the FAO, despite challenges posed by the COVID-19 pandemic and weather vagaries, world rice production is likely reach a new record of 513 million tonnes in 2020-21, up 1.1 percent from the 2019-20. Global trade in rice is forecast to expand by 6.9 percent in 2020-21 to 48.2 million tonnes driven by surge in African imports, in particular by Côte d'Ivoire, Nigeria and Senegal. India is expected to retain its export leadership in the rice world trade. Global rice ending stocks in 2020-21 are forecast at 182.5 million tonnes, almost at the 2019-20 level.
- 1.38. Preliminary forecasts of oilseeds crops for the 2020-21 season point towards a tightening supply-demand situation for oilseeds and their derived products. Global oilseed production is forecast to reach a new record in 2020-21, due to higher soybean production in the United States of America and Brazil. World sunflower seed and rapeseed production could remain depressed, while palm oil production is forecast to grow in 2020-21. Global oils/fats and meals/cakes consumption is forecast to increase and would slightly exceed world production, resulting in lower stocks.
- 1.39. According to International Cotton Advisory Committee, world cotton production is forecast to fall by about 2 million tonnes, while consumption is forecast to increase from 22.8 million tonnes in 2019-20 to 24.5 million tonnes in 2020-21 and as a result, ending stocks are forecast to decrease by about 1.4 percent in 2020-21.
- 1.40. The FAO Food Price Index (FFPI) averaged 116 points in February 2021, consecutive rise for ninth month and reached highest level since July 2014. The FAO Cereal Price Index was 1.5 points higher than January and 26.3 points above February 2020 level. Maize prices in February were significantly higher than the previous year, primarily due to strong import demand and shrinking export supplies. The FAO Vegetable Oil Price Index averaged 147.4 points in February, reaching the highest level since April 2012 due to high prices of palm, soy, rape and sunflower oils. International palm oil prices rose for a ninth consecutive month in February. Oilseeds prices are forecast



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to remain strong in 2021-22 due to global demand outstripping supply. The world soybean price is forecast to be slightly higher in 2021-22 than in 2020-21. The world cotton price is forecast to increase in 2021-22 due to strong import demand and global consumption growth.

Structure of the Report

1.41. The report is organized as follows. Chapter 2 presents the demand-supply trends, outlook and procurement operations of mandated crops. Chapter 3 analyses trends in crop productivity, yield gap analysis and discusses major drivers of productivity. Chapter 4 presents an overview of trade patterns, trends in domestic and world prices, review of trade policies and trade outlook. Chapter 5 analyses the cost of production, returns and cost projections of crops. Finally, Chapter 6 highlights key considerations and concludes by presenting price and non-price policy recommendations.



Demand-Supply Outlook, Prices and Price Support Operations

World Trends and Outlook

- 2.1 Global demand-supply trends and outlook for three major kharif crops viz. rice, maize and soybean as estimated by Food and Agricultural Organisation (FAO), United States Department of Agriculture (USDA) and International Grain Council (IGC) are given in Table 2.1. All the three agencies indicate that production is likely to improve in 2020-21 over the previous year. As per FAO's latest estimates, global rice production in 2020-21 is forecast at 513.2 million tonnes, up 2.06 percent from 2019-20. USDA and IGC have also forecast an increase in global rice output in 2020-21 by about 1.4 percent and 1.3 percent respectively. All estimates forecast the global consumption of rice to increase in 2020-21 over the last year. World rice supplies are projected to increase by 7.2 million tonnes as per FAO estimates, 8.2 million tonnes as per USDA and 5 million tonnes as per IGC projections. FAO expects world rice trade to increase by 6.9 percent in 2020-21 and IGC forecast show 4.6 percent increase, while USDA projects 2.9 percent increase in global rice trade. FAO and IGC forecast show global ending stocks in 2020-21 to be slightly higher than 2019-20.
- 2.2 World maize production as per FAO's estimate is likely to be 1,152.8 million tonnes in 2020-21, about 1.3 percent higher than 2019-20. USDA and IGC also estimate global maize production to increase by 1.6 percent and 0.8 percent, respectively in 2020-21. World maize utilization is forecast to increase by 1.9 percent as per FAO estimates, 1.5 percent as per USDA estimates and 0.8 percent as per IGC estimates. FAO's latest forecast for world trade in maize stands at 187.1 million tonnes, 7.3 percent higher than 2019-20. USDA and IGC also forecast increase in maize trade in 2020-21. Trade forecast were scaled up sharply, primarily on exceptionally higher imports by China. The ending stocks in 2020-21 are forecast to contract from last year by about (-)8.6 percent as per FAO estimates, (-)5.4 percent as per USDA and (-)9.8 percent as per IGC forecast. Stocks forecasts are lowered because of substantial downward adjustments to China's inventories following revised feed estimates and lower inventories on account of higher exports.
- 2.3 World production of soybean is forecast to increase significantly in 2020-21 compared to 2019-20 as per FAO, USDA and IGC, hence, supply is likely to improve in 2020-21. They have also projected an increase in utilisation and lower ending

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stocks in 2020-21. FAO's forecast for ending stocks of soybean in 2020-21 stands at 42.6 million tonnes, (-)22.3 percent lower than previous year. USDA and IGC forecasts show reduction in soybean stocks by (-)12.1 percent and (-)11 percent, respectively.

- 2.4 USDA projects an increased global oilseeds production in 2020-21 at 595.1 million tonnes, about 3.3 percent above 2019-20. Global stocks are forecast to be lower at 95.6 million tonnes in 2020-21, about (-)13.4 percent lower than 2019-20. Although an improvement in global coarse grains production from 1,411.6 million tonnes in 2019-20 to 1,438.9 million tonnes is anticipated, global stocks are forecast to decline by (-)4.6 percent, from about 331.5 million tonnes in 2019-20 to 316.2 million tonnes in 2020-21. The global supply and use outlook for oilseeds and coarse grains is given in Annex Table 2.1.

Table 2.1: Global Supply and Demand Outlook for Rice, Maize and Soybean

(million tonnes)

	FAO-AMIS				USDA				IGC			
	2017-18	2018-19	2019-20*	2020-21/	2017-18	2018-19	2019-20*	2020-21\$	2017-18	2018-19	2019-20*	2020-21#
Rice												
Production	506.8	514.7	502.8	513.2	494.8	499.4	497.2	504.0	494	499.9	497.4	503.6
Supply	675.2	690.4	688.2	695.4	644.7	661.9	674.1	682.3	636	662.6	673.0	678.0
Utilization	504.7	509.2	504.2	514.4	482.2	486.6	495.8	504.2	486.1	490.1	498.6	502.2
Trade	48.1	44.2	45.1	48.2	47.3	43.5	44.8	46.1	46.7	42.5	43.6	45.6
Stocks	172.5	183	182.2	182.5	162.6	175.3	178.3	178.1	150	172.5	174.4	175.8
Maize												
Production	1094	1120.2	1138.5	1152.8	1080.1	1123.3	1116.6	1134.1	1089.6	1129.7	1125.0	1133.6
Supply	1394	1488.9	1462.4	1454.5	1432.1	1464.9	1436.7	1437.1	1453.6	1469	1451.2	1431.0
Utilization	1073	1140.4	1158.2	1179.8	1090.5	1144.1	1133.7	1150.5	1117.8	1146.3	1153.8	1163.0
Trade	155.4	166.3	174.3	187.1	148.2	180.5	175.0	184.2	151.9	164.7	173.6	184.4
Stocks	307.5	360.6	301.7	275.7	341.6	320.8	303.0	286.5	335.8	322.7	297.2	268.0
Soybean												
Production	341.7	364.2	338.2	363.6	342.1	358.7	336.5	361.1	340.7	362	338.3	359.9
Supply	398.7	413.2	401.4	418.1	436.9	457.7	449.3	455.9	389.8	406.9	402.4	410.8
Utilization	349.7	353.2	360.2	375.1	338.1	342.9	354.8	369.8	346.1	352.7	351.5	365.5
Trade	153.6	150.4	169.0	169.7	153.1	148.3	165.2	169.7	152.7	151.6	169.8	169.5
Stocks	41.1	58.4	54.8	42.6	99.1	111.9	94.9	83.4	43.4	54.2	50.9	45.3

Note: *estimated, /: Forecast 4th March 2021, \$: Forecast 9th February 2021, #: Forecast 25th February 2021

Source: 1. AMIS-FAO Market Monitor

2. International Grains Council (IGC)

3. United States Department of Agriculture (USDA)

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2.5 As per USDA, cotton production in 2020-21 is forecast to be 114.14 million bales which is slightly lower than 122.12 million bales in 2019-20 while consumption is expected to improve in 2020-21. As a result, ending stocks for 2020-21 are estimated to decline from 98.92 million bales in 2019-20 to 95.74 million bales in 2020-21 (Annex Table 2.2).

Domestic Scenario

2.6 Rice production in India is estimated at 120.3 million tonnes in 2020-21, about 1.2 percent higher as compared to 2019-20 (Table 2.2). However, rice stocks in central pool as on 28th February, 2021 stood at about 28.2 million tonnes, down (-)9 percent compared to 2020, but more than double the current foodgrains stocking norms as on 1st April. With marginal increase in production, relatively lower stocks and increased exports in 2020-21, domestic prices are projected to improve in 2021-22.

Table 2.2: Domestic Supply of Rice in India

(million tonnes)

Particulars	2017-18	2018-19	2019-20	2020-21
Production	112.8	116.5	118.9	120.32*
Stocks in Central Pool [#]	23.3	26.4	31.0	28.2
Exports	12.9	12.1	9.5**	8.9***

Note: * As per 2nd Advance Estimate, # as on 28th February 2018, 2019, 2020 and 2021, ** April-December 2019, *** April-December 2020

Source: 1. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

2. Department of Food and Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution

3. Directorate General of Commercial Intelligence and Statistics

2.7 Total production of pulses in the country is estimated at 24 million tonnes in 2020-21, about 6 percent higher than in 2019-20. Kharif pulses production is estimated around 7 percent higher at 8.5 million tonnes in 2020-21 but about 20 percent lower than the target of 10.6 million tonnes for 2020-21. Among kharif pulses, tur production in 2020-21 is estimated at 3.88 million tonnes, almost at the same level (3.89 million tonnes) as in 2019-20. However, production of urad has improved by about 33 percent in 2020-21 as compared to 2019-20, but is still 39 percent less than the target. Moong production in 2020-21 is estimated at 2.02 million tonnes, 10.4 percent higher than in 2019-20.

2.8 As per second Advance Estimates of Ministry of Agriculture and Farmers Welfare and Cotton Advisory Board (CAB) estimates, cotton production in the country is expected to rise significantly in 2020-21. Indian cotton production is pegged at 371 lakh bales in 2020-21, about 3.1 percent higher than the target. As per CAB estimates, cotton production is estimated to increase by 1.6 percent in 2020-21 compared to the last year. As per the CAB's cotton balance sheet, a significantly



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high opening stock along with higher cotton production is expected to result in higher domestic mill consumption and increased exports in 2020-21 as compared to 2019-20. Total consumption is expected to increase by 22.7 percent in 2020-21. Due to relatively higher increase in net export and consumption as compared to production, closing stocks of cotton in 2020-21 are expected to be lower than 2019-20. Further, compared to the three-year average from 2016-17 to 2018-19, total supply, consumption, and closing stocks are estimated to be significantly higher in 2020-21.

Table 2.3: Demand-Supply Estimates of Cotton in India

(lakh bales of 170 kg each)

Particulars	3 Years Average (2016-17 to 2018-19)	2019-20	2020-21(P)
Opening Stock	41.04	56.52	120.95
Crop (Production)	349.33	365.00	371.00
Imports	27.37	15.50	11.00
Total Supply	417.74	437.02	502.95
Mill Consumption	271.20	233.70	286.00
S.S.I. Consumption	24.94	20.33	26.00
Non-Textile Consumption	17.42	15.00	18.00
Total consumption	313.56	269.03	330.00
Exports	56.45	47.04	75.00
Total Demand	370.01	316.07	405.00
Closing Stock	47.73	120.95	97.95

Note: P-Provisional

Source: Cotton Advisory Board, Ministry of Textiles

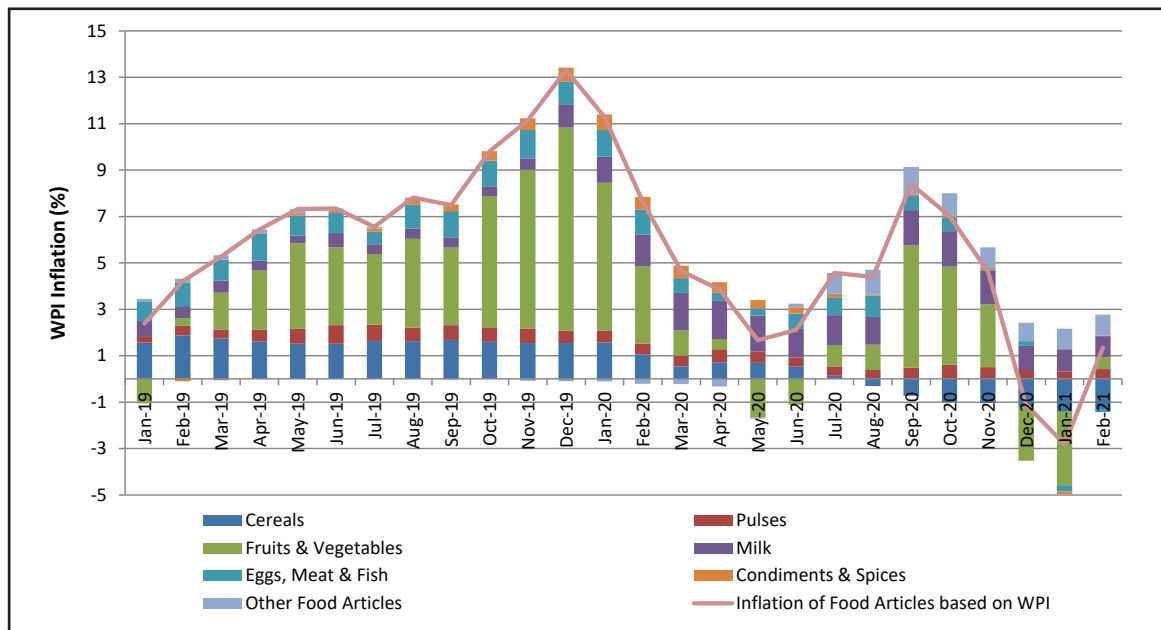
Food Inflation

2.9 Consumer Food Price Index (CFPI) has a significant weightage (39.06 %) in overall Consumer Price Index, while Food Index consisting of 'Food Articles' from Primary Articles and 'Food Products' from Manufactured Products has 24.38 percent weightage in Wholesale Price Index (WPI) for 'All Commodities'. It is, therefore, important to examine trends in inflation based on WPI and CFPIs. The food price inflation in the country, which was on a structural downtrend until 2018, showed an upward movement during the last two years. Food inflation based on Wholesale Price Index increased from zero percent in 2018 to 5.8 percent in 2019 but marginally declined to 5.1 percent in 2020. Fruits and vegetables, milk, eggs, meat and fish and pulses contributed to higher inflation (Chart 2.1). WPI food inflation was 0.79 percent in February 2021 as compared to (-)1.9 percent in January 2021 and 7.24 per cent in February 2020.

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Chart 2.1: Inflation of Food Articles based on Wholesale Price Index (2011-12=100)

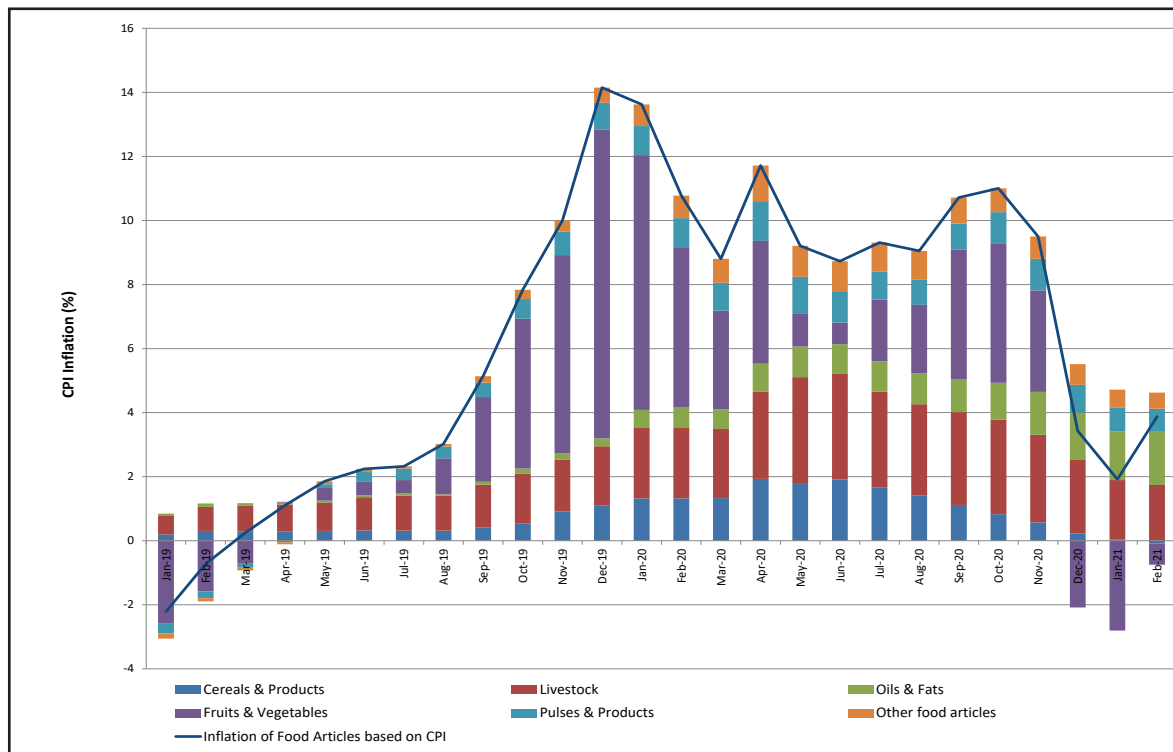


Source: Office of Economic Adviser, Ministry of Commerce and Industry

2.10 The Consumer Price Index (CPI) based food inflation, which remained benign during 2017 and 2018, significantly increased during the last two years, from 3.6 percent in 2019 to 9.6 percent in 2020 due to COVID-19 related disruptions and surge in world food prices. The major contributors to high food inflation were fruits and vegetables, livestock products and pulses and pulse products (Chart 2.2). Cereals and cereal products recorded an increase in inflation during 2020 and was 1.4 percent. The CFPI inflation for the month of February 2021 was 3.9 percent as compared to 2 percent in January 2021 and 10.8 percent in February 2020. The CFPI inflation, which was lower than WPI food inflation in 2019, rose sharply in 2020 and was much higher (9.7%) than WPI food inflation (4.9%). These trends clearly show that high-value commodities such as fruits and vegetables, milk and dairy products, fish, meat and eggs contributed to higher food inflation and the issue needs to be addressed through appropriate policy measures.



Chart 2.2: Inflation of Food Articles based on Consumer Price Index (2012=100)



Source: Ministry of Statistics and Programme Implementation (MoSPI)

Market Prices vis-à-vis MSP

2.11 Domestic market price trends have been analysed using the market price data compiled from 3,100 APMC markets (through AGMARKNET) in different States/UTs. State weighted average daily price of a commodity has been computed by taking average of modal price prevailing in various centres with daily market arrival in the centre as the weights. Using the State weighted average daily price, all-India daily average market price has been computed by taking weighted average of all States with share of the State in total production of a crop/commodity as weights. Monthly average price at all-India level is computed by taking simple average of daily all-India prices. Effectiveness of Price Support operations can be better understood by comparing market prices and the MSP. In the following section, we compare market prices and MSPs of mandated crops.

Paddy

2.12 Chart 2.3 presents the monthly average market price and MSP of paddy from KMS 2016-17 to KMS 2020-21. The figure shows that all-India average market price of paddy remained marginally below the MSP during the last five marketing seasons. The average difference between the two prices was the highest (-4.7%) in KMS 2018-19, when the MSP was hiked by 12.6 percent. However, the difference has narrowed down to (-)2.7 percent in KMS 2020-21 due to recovery in market prices.

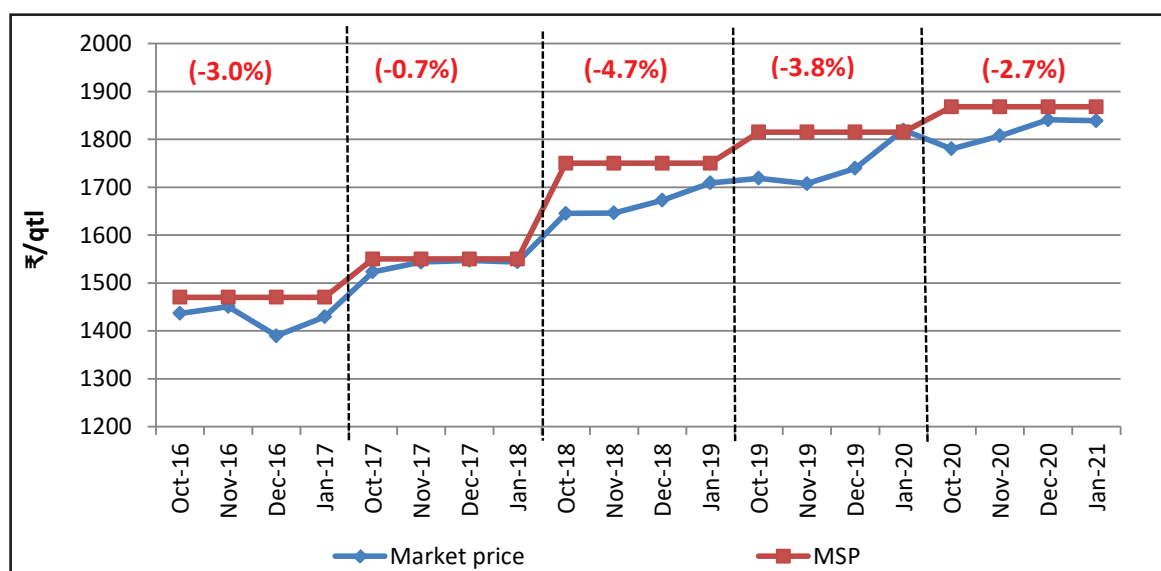
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Domestic prices have increased from about ₹1,400 during KMS 2016-17 to about ₹1,800 in KMS 2020-21.

2.13 Table 2.4 provides State-wise analysis of the number of days when market prices ruled below/above MSP and the average percentage difference between two prices in KMS 2020-21. Market prices remained below MSP on all the days except for one day in Chhattisgarh and for five days in Uttar Pradesh for which the data were available. The difference between MSP and market price was (-)12.1 percent in Chhattisgarh and (-)5.4 percent in Uttar Pradesh. The difference between MSP and market price was higher (-16.1%) in Tamil Nadu and lower in West Bengal (-0.4%). Paddy market prices also remained below MSP on most of the days in Tamil Nadu, Telangana and West Bengal. The average difference between MSP and market price was (-)4 percent in Telangana, while the average market price of paddy was 5.1 percent higher than MSP in Andhra Pradesh and 1.2 percent in Punjab. Punjab was the only State where market prices remained above MSP throughout the period, due to high procurement in Punjab. In Andhra Pradesh also, market prices remained above MSP in all days except for one day.

Chart 2.3: Trends in Market Prices vis-à-vis MSP of Paddy (Oct 2016 to Jan 2021)



Note: 1. Weighted wholesale modal prices of Andhra Pradesh, Assam, Chhattisgarh, Haryana, Madhya Pradesh, Punjab, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal, which accounts for 73.3 percent of paddy production in India

2. Figures in parentheses show percentage difference between market prices and MSP for each marketing season

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation & Welfare, Ministry of Agriculture and Farmers Welfare

2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

2.14 Chart 2.4 presents the average daily market price and the MSP for three major producers, namely, Uttar Pradesh, Andhra Pradesh and West Bengal constituting nearly 40 percent of total rice production. As seen in the Chart 2.4, market prices in



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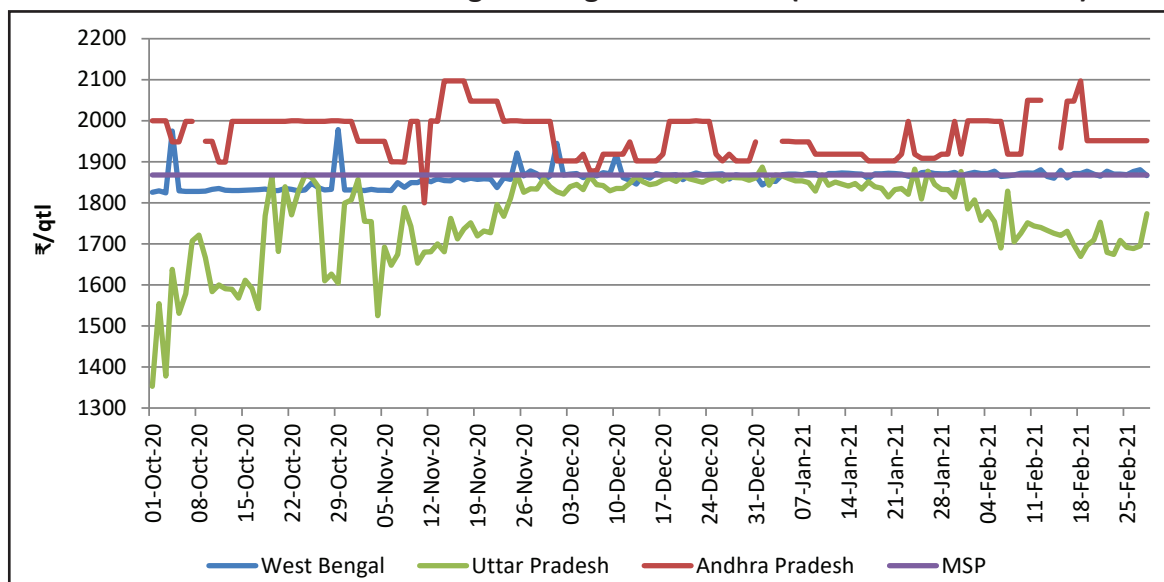
Uttar Pradesh were highly fluctuating and much below MSP during the beginning of the season. Prices hovered around MSP during December 2020 and January 2021. Market prices in West Bengal were marginally below the MSP until November 2020 but improved and stayed slightly above MSP for rest of the season.

Table 2.4: Market Prices vis-à-vis MSP of Rice in Major Producing States in KMS 2020-21 (Oct 2020 to Feb 2021)

Particulars	3 Years Average (2016-17 to 2018-19)	No. of days market prices were above MSP	No. of days market prices were below MSP				Average difference (%) between MSP & market price
			<5%	5%-10%	10%-15%	>15%	
Andhra Pradesh	145	144	1	0	0	0	5.1
Chhattisgarh	151	1	41	17	31	61	-12.1
Tamil Nadu	125	6	6	15	21	77	-16.1
Telangana	148	48	58	22	6	14	-4.0
Punjab	62	62	0	0	0	0	1.2
Uttar Pradesh	151	5	78	39	19	9	-5.4
West Bengal	151	65	86	0	0	0	-0.4

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

Chart 2.4: Comparison of Market Prices and MSP of Paddy in Andhra Pradesh, Uttar Pradesh and West Bengal during KMS 2020-21 (Oct 2020 to Feb 2021)



Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

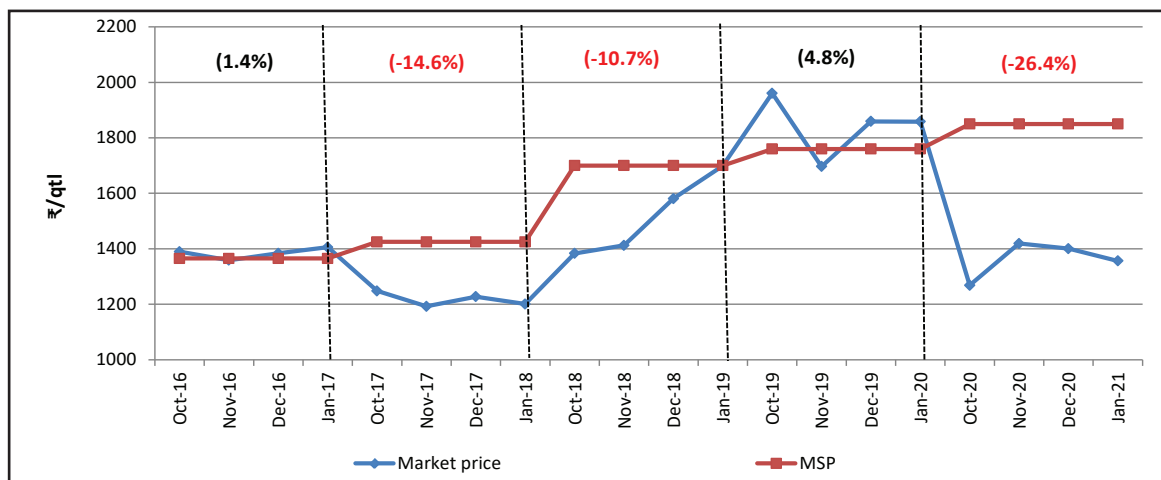
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Maize

- 2.15 Market prices of maize, which were higher than MSP by 1.4 percent in KMS 2016-17, dipped sharply and ruled significantly below the MSP (-14.6%) in KMS 2017-18 and (-)10.7 percent in 2018-19 due to higher domestic production and sharp revision in MSP from ₹1,425 per quintal in KMS 2017-18 to ₹1,700 per quintal in KMS 2018-19 (Chart 2.5). In KMS 2019-20, average market price was 4.8 percent higher than the MSP due to lower domestic production and increased demand and recovery in world prices. However, there is a sharp decline in market prices below MSP (-)26.4 percent in KMS 2020-21. Domestic maize prices showed a declining trend during last three months in contrast to significant increase in world prices.
- 2.16 Table 2.5 shows the number of days when market prices stayed above/below MSP for maize in major maize producing States during the current marketing season. In all the States, market prices were below MSP for most of the days. In States of Maharashtra, Rajasthan and Tamil Nadu, market prices stayed above MSP for few days while in rest of the States, market prices were reported below MSP on all days. The average difference between market price and the MSP of maize ranged from (-)18.3 percent in Uttar Pradesh to (-)33.4 percent in Madhya Pradesh.
- 2.17 Chart 2.6 shows the trends in market prices of maize vis-à-vis MSP for three major maize growing States, namely, Karnataka, Madhya Pradesh and Maharashtra. It is evident from the chart that market prices remained lower than MSP for whole of the marketing season in all these States.

Chart 2.5: Trends in Market Prices vis-à-vis MSP of Maize (Oct 2016 to Jan 2021)



- Note: 1. Weighted wholesale modal prices of Andhra Pradesh, Gujarat, Karnataka, Maharashtra, Madhya Pradesh, Rajasthan, Tamil Nadu, Telangana and Uttar Pradesh, which accounts for 74.2 percent of India's total maize production is used to compute market price
2. Figures in parentheses show percentage difference between market prices and MSP for each marketing season

- Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare



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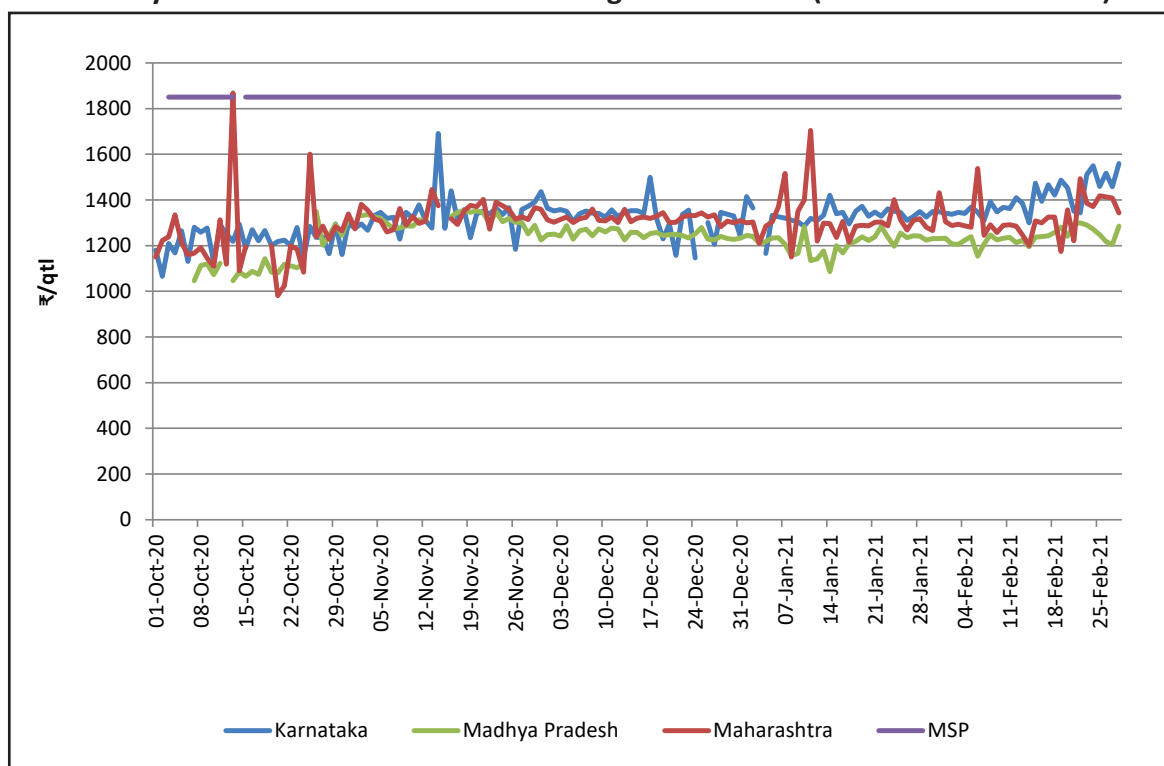
Table 2.5: Market Prices vis-à-vis MSP of Maize in Major Producing States in KMS 2020-21 (Oct 2020 to Feb 2021)

States	No. of days market prices reported	No. of days market prices were above MSP	No. of days market prices were below MSP				Average difference (%) between MSP & market price
			<5%	5%-10%	10%-15%	>15%	
Andhra Pradesh	85	0	3	0	0	82	-28.6
Karnataka	149	0	0	1	0	148	-28.5
Madhya Pradesh	140	0	0	0	0	140	-33.4
Maharashtra	147	1	0	1	1	144	-29.5
Rajasthan	146	2	3	9	6	126	-23.9
Telangana	110	0	10	5	11	81	-20.0
Uttar Pradesh	151	0	3	43	21	84	-18.3
Gujarat	141	0	2	4	26	109	-18.5
Tamil Nadu	116	3	1	1	1	110	-23.8

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

Chart 2.6: Comparison of Market Prices and MSP of Maize in Karnataka, Madhya Pradesh and Maharashtra during KMS 2020-21 (Oct 2020 to Feb 2021)



Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

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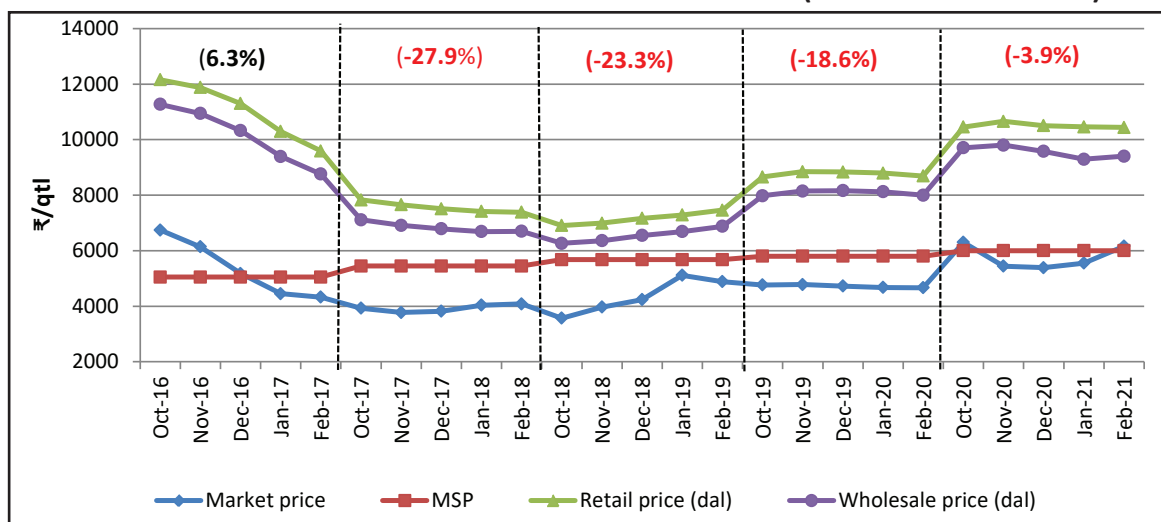


Pulses

Tur

- 2.18 The average market price of tur was above MSP (6.3%) in KMS 2016-17 (Chart 2.7) after a record price in 2015-16. However, increase in pulses production and imports during 2016-17 and 2017-18, resulted in decline of market prices which fell below the MSP and continued to remain below MSP in the succeeding years. Higher MSP and declining market prices widened the difference between market price and the MSP of tur and was (-)27.9 percent in 2017-18, (-)23.3 percent in 2018-19 and (-)18.6 percent in 2019-20. In KMS 2020-21, there was an improvement in tur market prices which were about 20.1 percent higher than KMS 2019-20 and 30.2 percent higher than KMS 2018-19 was observed. The gap between MSP and Market price declined to (-)3.9 percent in KMS 2020-21.
- 2.19 Wholesale and retail prices of tur dal remained significantly higher than MSP and market prices in all the years. In KMS 2020-21, both wholesale and retail prices have improved; averaging ₹9,557 per quintal and ₹10,504 per quintal, respectively, and the difference between wholesale/retail prices and MSP/market prices has increased.

Chart 2.7: Trends in Market Prices vis-à-vis MSP of Tur (Oct 2016 to Feb 2021)



- Note: 1. Weighted wholesale modal prices of Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Telangana and Uttar Pradesh, which accounts for 86.3 percent of India's total production
2. MSP is inclusive of bonus
3. Figures in parentheses show percentage difference between market prices and MSP for each marketing season

- Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare
3. Department of Food and Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution



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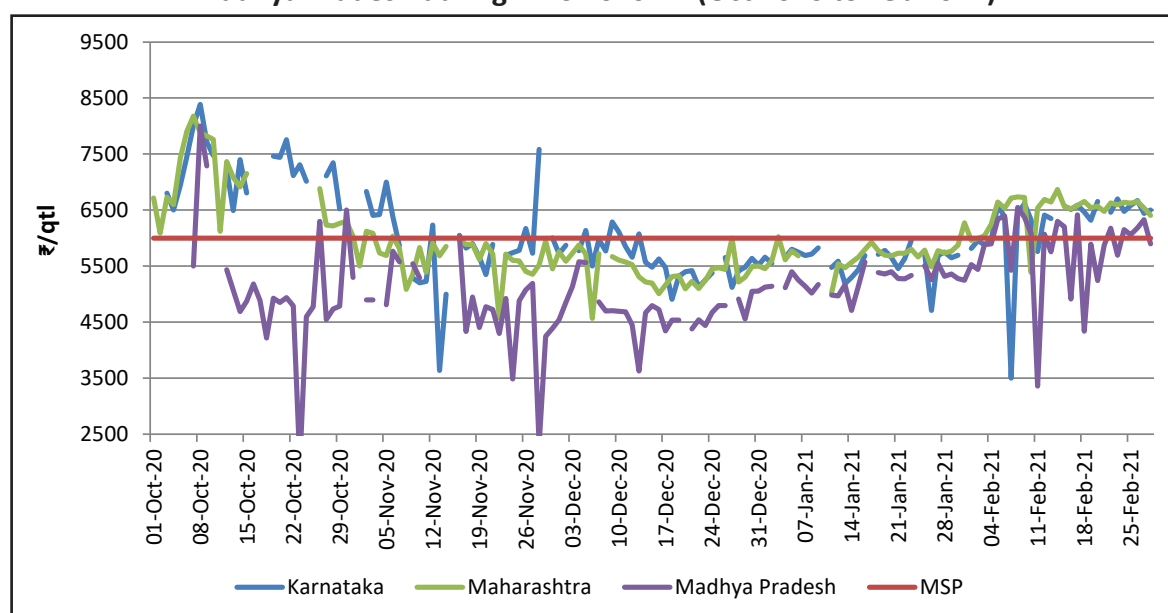
- 2.20 During KMS 2020-21, market prices of tur have remained below MSP in most of the days for all the major States (Table 2.6). The price gap was highest in Madhya Pradesh (-14.1%), followed by Uttar Pradesh (-7.0%) and Gujarat (-6.3%). In Karnataka market price of tur was marginally higher than MSP.
- 2.21 Chart 2.8 shows daily movement of market prices in two major tur producing States viz. Karnataka and Maharashtra. It is evident from the Chart that market prices were fluctuating throughout the KMS 2020-21 and remained below the MSP for most of the season.

Table 2.6: Market Prices vis-à-vis MSP of Tur in Major Producing States in KMS 2020-21 (Oct 2020 to Feb 2021)

States	No. of days market prices reported	No. of days market prices were above MSP	No. of days market prices were below MSP				Average Difference (%) between MSP & market price
			<5%	5%-10%	10%-15%	>15%	
Gujarat	139	38	13	42	22	24	-6.3
Karnataka	129	56	28	29	11	5	1.2
Madhya Pradesh	128	19	7	14	25	63	-14.1
Maharashtra	137	53	32	31	15	6	0.0
Uttar Pradesh	151	2	23	98	26	2	-7.0

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

Chart 2.8: Comparison of Market Prices and MSP of Tur in Karnataka, Maharashtra and Madhya Pradesh during KMS 2020-21 (Oct 2020 to Feb 2021)



Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

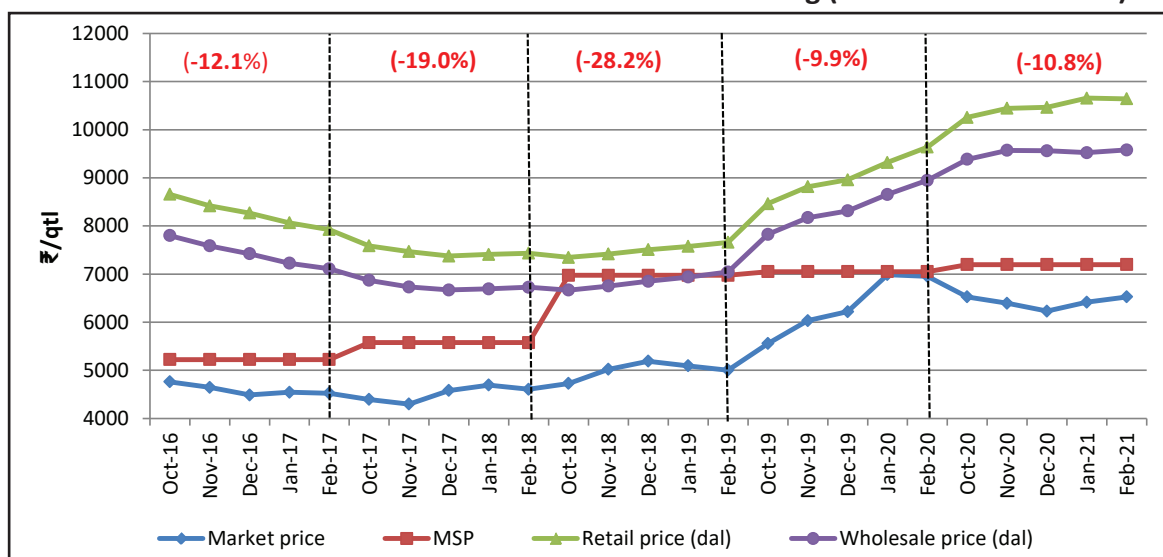
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Moong

2.22 Market prices of moong prevailed below the MSP (-12.1%) in KMS 2016-17 and difference between market price and the MSP widened to (-)19 percent in KMS 2017-18 and (-)28.2 percent in KMS 2018-19 (Chart 2.9). However the gap between market prices and MSP declined significantly (-10%) during KMS 2019-20 due to higher prices owing to lower production of moong but the difference between two prices increased to 10.8 percent in KMS 2020-21. Despite declining trend in market prices of moong during Oct-Dec 2020, wholesale and retail prices showed an increasing trend and average difference between market price of moong and its wholesale prices increased from 32 percent in KMS 2019-20 to 48 percent in KMS 2020-21.

Chart 2.9: Trends in Market Prices vis-à-vis MSP of Moong (Oct 2016 to Feb 2021)



Note: 1. Weighted wholesale price of Andhra Pradesh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu, Telangana and Uttar Pradesh, which accounts for 87.8 percent of total production of moong
2. MSP is inclusive of bonus
3. Figures in parentheses show percentage difference between market prices and MSP for each marketing season

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare
3. Department of Food and Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution

2.23 During KMS 2020-21, market prices remained below MSP on most days in MP, while prices were better in Madhya Pradesh and Rajasthan. The average difference between market prices and MSP was (-)10.6 percent in Madhya Pradesh, (-)10.3 percent in Rajasthan and (-)2.5 percent in Maharashtra.

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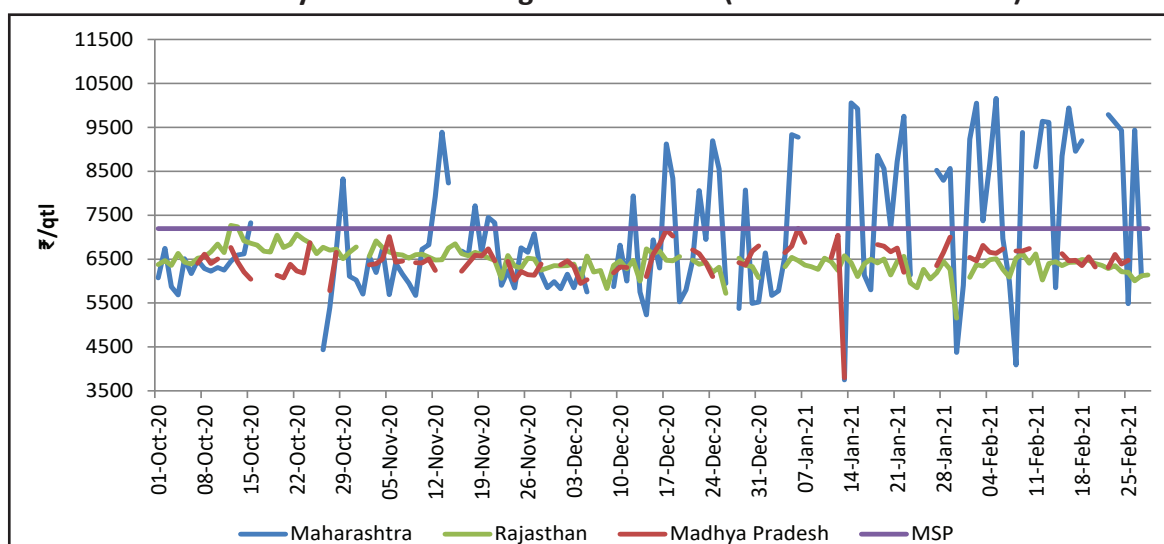
Table 2.7: Market Prices vis-à-vis MSP of Moong in Major Producing States in KMS 2020-21 (Oct 2020 to Feb 2021)

States	No. of days market prices reported	No. of days market prices were above MSP	No. of days market prices were below MSP				Average difference (%) between MSP & market price
			<5%	5%-10%	10%-15%	>15%	
Madhya Pradesh	100	1	8	36	44	11	-10.6
Maharashtra	127	46	5	18	17	41	-2.5
Rajasthan	143	2	9	56	61	15	-10.3

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

2.24 Chart 2.10 shows daily price movements in market prices for moong in Rajasthan and Maharashtra for KMS 2020-21. It is evident from the chart that market prices as well as fluctuations in market prices were higher in Maharashtra than Rajasthan.

Chart 2.10: Comparison of Market Prices and MSP of Moong in Maharashtra, Rajasthan and Madhya Pradesh during KMS 2020-21 (Oct 2020 to Feb 2021)



Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

Urad

2.25 Market prices of urad showed a declining trend but remained above the MSP in KMS 2016-17 and the gap between the MSP and market prices was 20.9 percent (Chart 2.11). Market prices continued the declining trend during 2017-18 and average market price was (-)31.4 percent lower than MSP. Due to improvement in market prices in KMS 2018-19, the gap narrowed down to (-)27.9 percent, which further reduced to (-)8.9 percent in KMS 2019-20 due to a significant increase (28.5%) in

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market prices. Market prices further improved in 2020-21 and average market price was about 2.3 percent higher than MSP.

- 2.26 During KMS 2020-21 market prices stayed above MSP on all days except for a day in Uttar Pradesh, with an average gap of 12.1 percent (Table 2.8). In Maharashtra, market prices were less than MSP on 59.4 percent of the reported days and the average gap between them was (-)1.7 percent. In Rajasthan, market prices were above MSP on 87 percent of the days while in Tamil Nadu market prices were higher than MSP on almost 75 percent of days. The average market prices of Urad were higher than MSP in Rajasthan (6.2%), Tamil Nadu (7.7%) and Uttar Pradesh (12%).

Table 2.8: Market Prices vis-à-vis MSP of Urad in Major Producing States in KMS 2020-21 (Oct 2020 to Feb 2021)

States	No. of days market prices reported	No. of days market prices were above MSP	No. of days market prices were below MSP				Average difference (%) between MSP & market price
			<5%	5%-10%	10%-15%	>15%	
Madhya Pradesh	128	35	35	30	15	13	-4.8
Maharashtra	79	32	23	11	8	2	-1.7
Rajasthan	137	119	14	1	1	1	6.2
Tamil Nadu	87	65	10	6	0	5	7.7
Uttar Pradesh	151	150	1	0	0	0	12.1

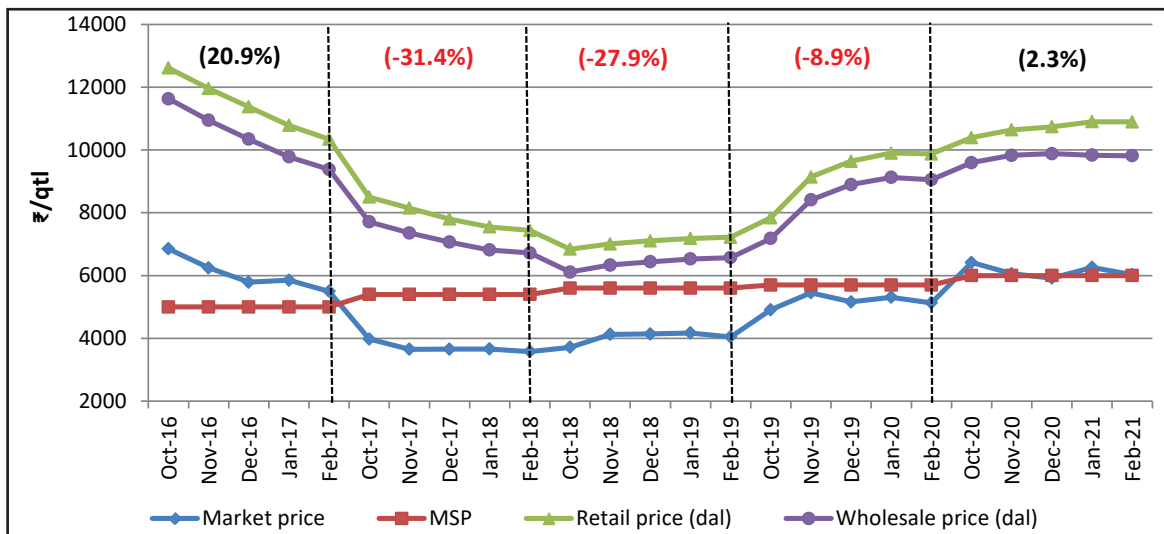
Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

- 2.27 Movement in daily market prices of urad in Madhya Pradesh, Uttar Pradesh and Tamil Nadu are shown in Chart 2.12. Prices in Uttar Pradesh were higher than Madhya Pradesh as well as MSP for almost entire season. However, prices in Madhya Pradesh were below MSP for most part of the season.

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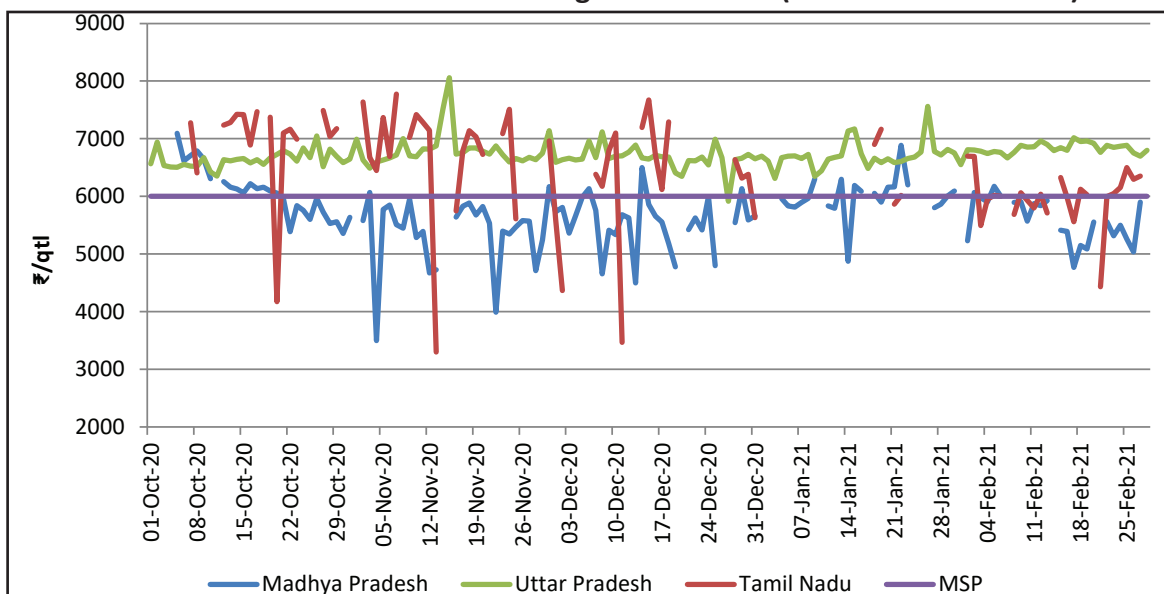
Chart 2.11: Trends in Market Prices vis-à-vis MSP of Urad (Oct 2016 to Feb 2021)



Note: 1. Weighted wholesale price of Andhra Pradesh, Gujarat, Madhya Pradesh, Maharashtra, Rajasthan, Tamil Nadu and Uttar Pradesh, which accounts for 88.4 percent of total production of urad
 2. MSP is inclusive of bonus
 3. Figures in parentheses show percentage difference between market prices and MSP for each marketing season

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
 2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare
 3. Department of Food and Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution

Chart 2.12: Comparison of Market Prices and MSP of Urad in Madhya Pradesh, Uttar Pradesh and Tamil Nadu during KMS 2020-21 (Oct 2020 to Feb 2021)



Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
 2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

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2.28 It is evident from the analysis that the market prices of kharif pulses have improved during KMS 2020-21 as compared to preceding year but were below MSP in case of Tur and Moong.

Oilseeds

Groundnut

2.29 Market prices of groundnut which were higher than MSP during KMS 2016-17 had seen a sharp fall from ₹4,505 per quintal in KMS 2016-17 to ₹3,927 per quintal in KMS 2017-18 (Chart 2.13). This was due to substantial increase (24%) in groundnut production in 2017-18 over 2016-17. Although, market prices recovered in KMS 2018-19, but remained below the MSP (-12.6%) as MSP was increased by nearly 10 percent. In KMS 2019-20, average market price was 6.7 percent lower than the MSP. In 2020-21, though market prices showed an upward trend during Nov-Dec, average market prices were 8.4 percent lower than the MSP during the season.

2.30 Table 2.9 shows the average difference between the MSP and market price and number of days when market prices were above MSP in major groundnut producing States. It can be seen from the Table 2.9 that market prices were below MSP for most of the days in Rajasthan, Gujarat and Karnataka. Average difference was highest in Andhra Pradesh (-13.9%) Karnataka (-12.2%) and lowest in Gujarat (-5.4%). However, in Tamil Nadu, market prices were higher than MSP during most of the days and average market price was 27 percent higher than MSP during KMS 2020-21.

Table 2.9: Market Prices vis-à-vis MSP of Groundnut in Major Producing States in KMS 2020-21 (Oct 2020 to Feb 2021)

States	No. of days market prices reported	No. of days market prices were above MSP	No. of days market prices were below MSP				Average difference (%) between MSP & market price
			<5%	5%-10%	10%-15%	>15%	
Andhra Pradesh	71	15	4	6	7	39	-13.9
Gujarat	137	7	33	51	11	11	-5.4
Karnataka	132	8	5	5	24	67	-12.2
Rajasthan	141	3	15	68	23	8	-7.7
Tamil Nadu	109	78	5	3	0	2	27.0

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

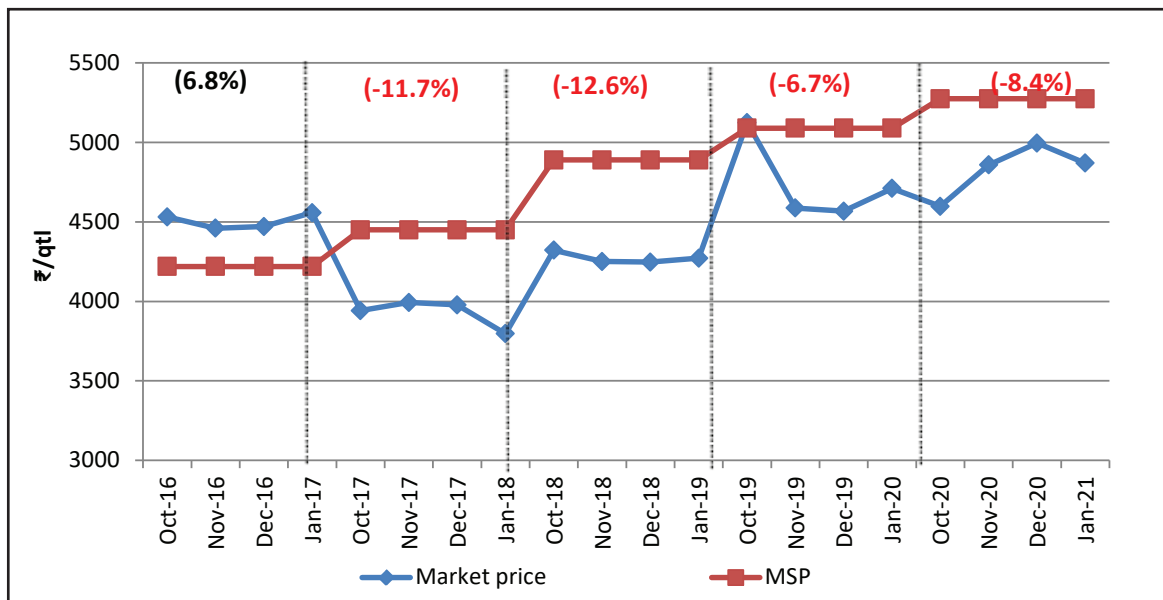
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

2.31 In 2020-21, market prices have generally remained below MSP in Rajasthan and Gujarat (Chart 2.14). However, the gap between the market prices and MSP started declining since December 2020 and prices were seen moving above MSP in January and February 2021, especially in Gujarat.



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Chart 2.13: Trends in Market Prices vis-à-vis MSP of Groundnut (Oct 2016 to Jan 2021)



Note: 1. Weighted wholesale modal prices of Andhra Pradesh, Chhattisgarh, Gujarat, Karnataka, Maharashtra, Madhya Pradesh, Odisha, Rajasthan, Tamil Nadu, Telangana and Uttar Pradesh, which accounts for 96.5 percent of India's total production

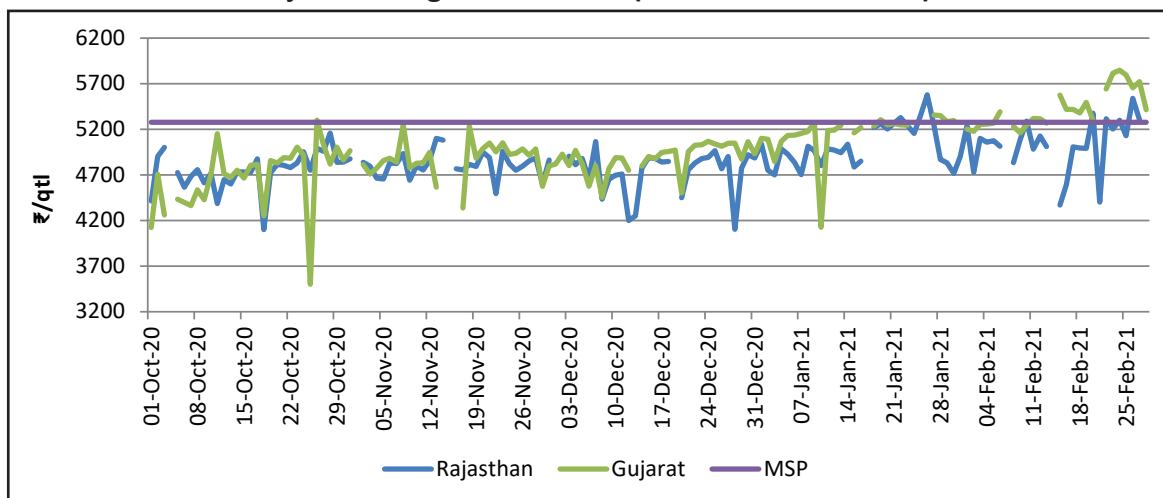
2. MSP is inclusive of bonus

3. Figures in parentheses show percentage difference between market prices and MSP for each marketing season

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

Chart 2.14: Comparison of Market Prices and MSP of Groundnut in Rajasthan and Gujarat during KMS 2020-21 (Oct 2020 to Feb 2021)



Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

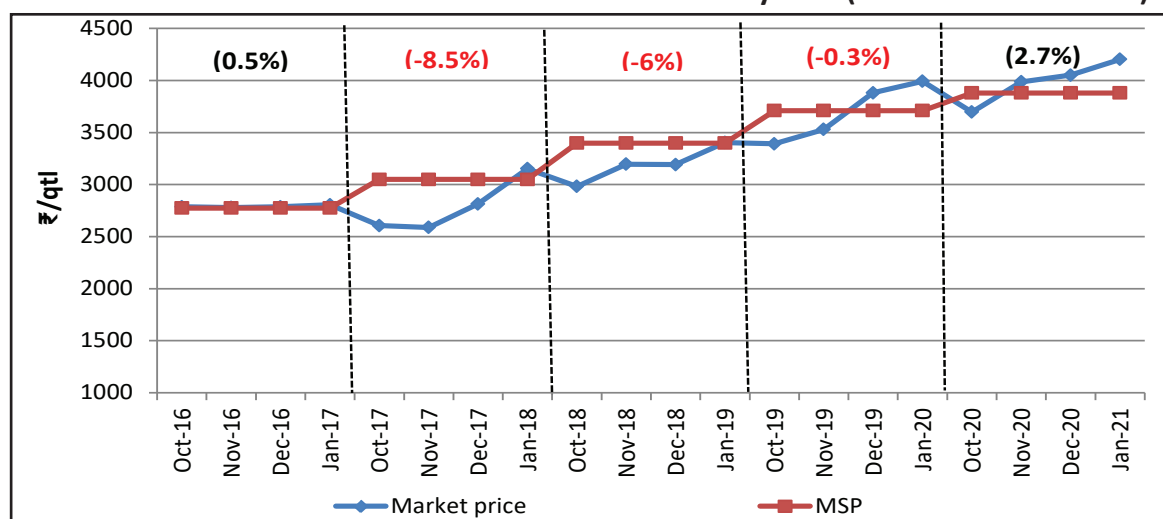
Price Policy for KHARIF CROPS



Soybean

- 2.32 In case of soybean, there was convergence of market prices and MSP in KMS 2016-17 (Chart 2.15). In KMS 2017-18 there was an increase of about 10 percent in MSP and the difference between market prices and MSP increased to (-)8.5 percent. The gap between MSP and market prices was reduced in 2018-19 even though MSP of soybean was hiked by 11.4 percent as market prices improved by 14.5 percent. During KMS 2019-20, market prices continued its upward trend and moved above MSP during December 2019 and January 2020 resulting in further narrowing of gap to (-)0.3%. In 2020-21, market prices showed a decline at the beginning of the season but improved towards the end of season and average market price was 2.7 percent higher than MSP during the season.
- 2.33 In major soybean producing States, for most of the days, market prices were reported to be above MSP (Table 2.10). Rajasthan reported the lowest instances (9.8%) of market prices less than MSP followed by Maharashtra (21.7%) and Madhya Pradesh (21.5%). The average market price was higher than MSP by 5.4 percent in Madhya Pradesh, 5.5 percent in Maharashtra and 8.4 percent in Rajasthan. Chart 2.16 portrays the movement of daily market prices of soybean in Madhya Pradesh and Maharashtra. It can be seen that market prices for soybean, which were ruling below the MSP in both the States during start of the season, ruled above the MSP in November 2020 and remained higher than MSP during the season.

Chart 2.15: Trends in Market Prices vis-à-vis MSP of Soybean (Oct 2016 to Jan 2021)



Note: 1. Weighted wholesale modal prices of Chhattisgarh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan, Telangana, Uttarakhand and Uttar Pradesh, which accounts for 99.5 percent of India's total production of soybean

2. MSP is inclusive of bonus

3. Figures in parentheses show percentage difference between market prices and MSP for each marketing season

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare



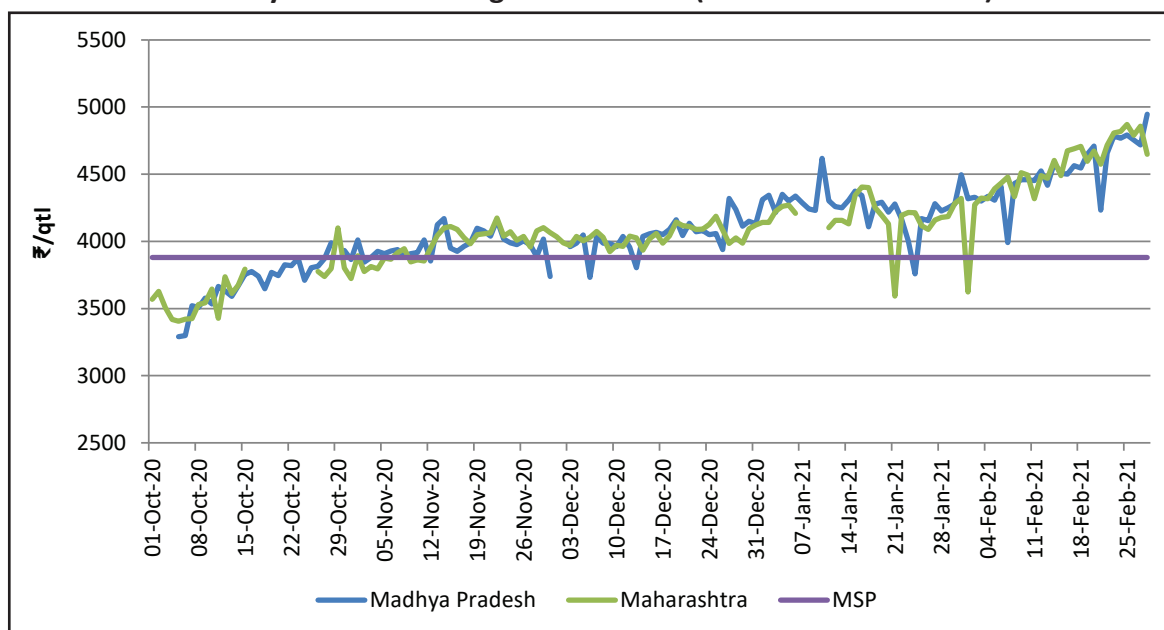
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Table 2.10: Market Prices vis-à-vis MSP of Soybean in Major Producing States in KMS 2020-21 (Oct 2020 to Feb 2021)

States	No. of days market prices reported	No. of days market prices were above MSP	No. of days market prices were below MSP				Average difference (%) between MSP & market price
			<5%	5%-10%	10%-15%	>15%	
Madhya Pradesh	144	113	19	9	1	2	5.4
Maharashtra	138	108	15	10	5	0	5.5
Rajasthan	132	119	6	5	2	0	8.4

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

Chart 2.16: Comparison of Market Prices and MSP of Soybean in Maharashtra and Madhya Pradesh during KMS 2020-21 (Oct 2020 to Feb 2021)



Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

Cotton

2.34 The market prices of cotton remained above MSP from KMS 2016-17 to KMS 2018-19 and dipped below MSP in KMS 2019-20 (Chart 2.17). The difference between market price and MSP decreased from 27.2 percent in KMS 2016-17 to 14.1 percent in KMS 2017-18, which further decreased to 5.9% percent in 2018-19 as there was an increase of about 28 percent in MSP and market prices recorded declining trend during the latter part of the season. However as the market prices showed a decline at the start of KMS 2019-20, average market prices was about (-)5.5 percent below the MSP. During KMS 2020-21, market prices recorded significant increase

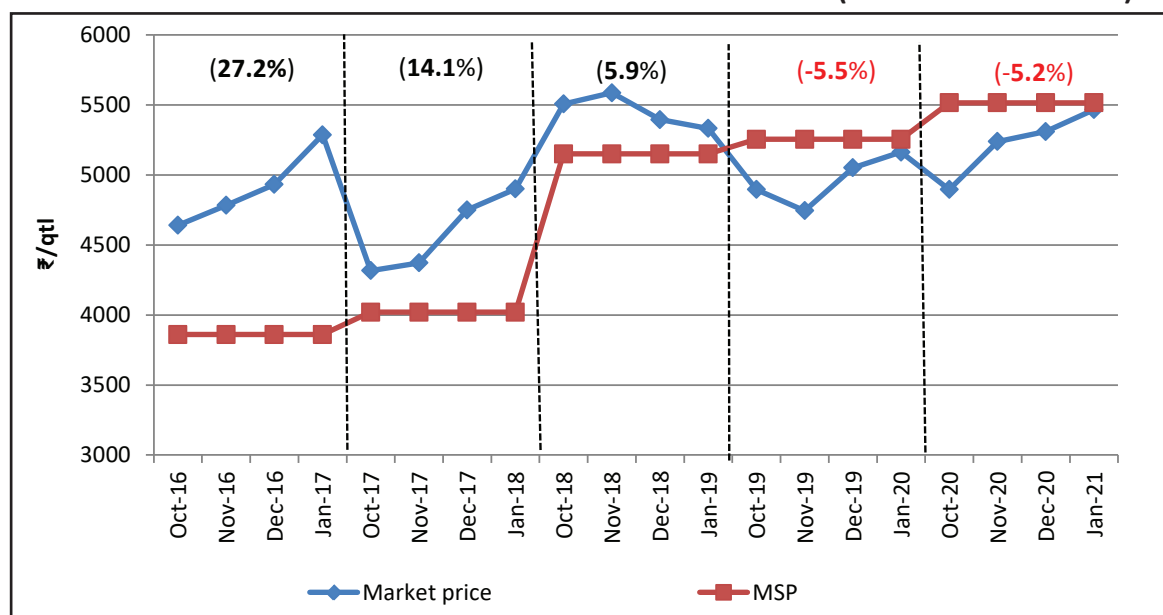
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and almost converged with MSP in Jan 2021. The average market price was (-)5.2 percent lower than the MSP.

2.35 Amongst the major cotton producing States, market prices stayed below MSP on almost 77 percent of the days in Gujarat and 28 percent of days in Maharashtra during KMS 2020-21 (Chart 2.18). The average difference between market prices and MSP was (-)1.9 percent in Maharashtra and (-)4.6 percent in Gujarat (Table 2.11).

Chart 2.17: Trends in Market Prices vis-à-vis MSP of Cotton (Oct 2016 to Jan 2021)



Note: 1. Weighted wholesale price of Andhra Pradesh, Gujarat, Maharashtra and Telangana, which account for 65.5 percent of India's total production of cotton
2. Figures in parentheses show percentage difference between market prices and MSP for each marketing season

Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

Table 2.11: Market Prices vis-à-vis MSP of Cotton in Major Producing States in KMS 2020-21 (Oct 2020 to Feb 2021)

States	No. of days market prices reported	No. of days market prices were above MSP	No. of days market prices were below MSP				Average difference (%) between MSP & market price
			<5%	5%-10%	10%-15%	>15%	
Maharashtra	119	86	7	8	4	14	-1.9
Gujarat	140	32	61	21	11	15	-4.6

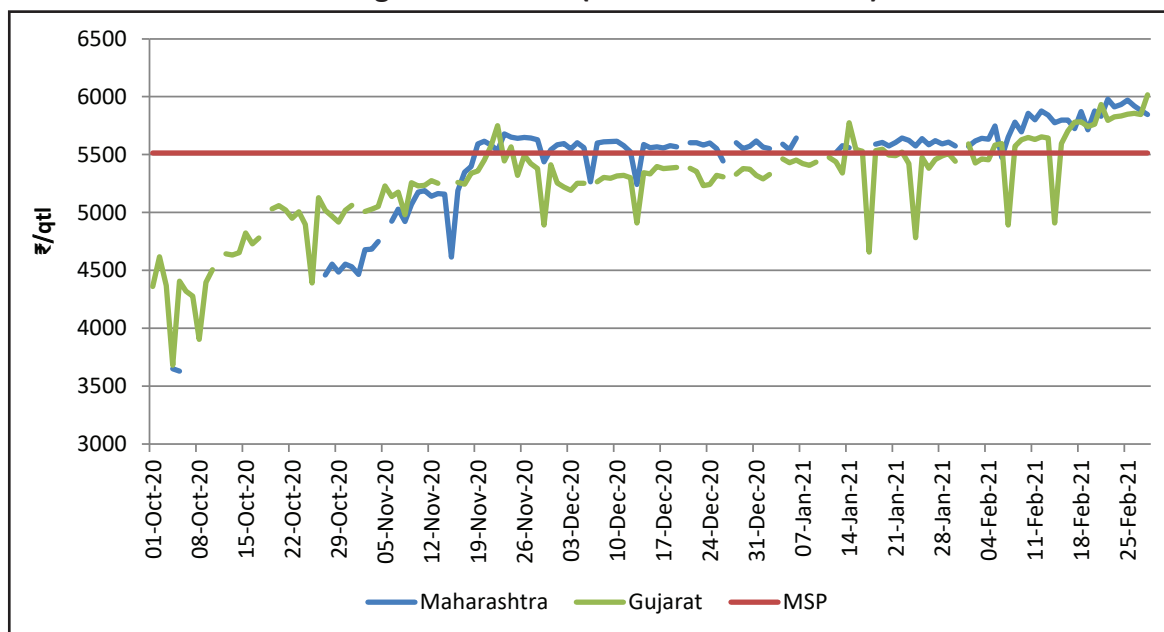
Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare



Price Policy for KHARIF CROPS

Chart 2.18: Comparison of Market Prices and MSP of Cotton in Maharashtra and Gujarat during KMS 2020-21 (Oct 2020 to Feb 2021)



Source: 1. AGMARKNET, Directorate of Marketing & Inspection (DMI), Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

Trends in Terms of Trade

- 2.36 The terms of trade between agriculture and non-agriculture is one of the important factor for consideration of MSP. It is estimated as, the ratio between combined indices of prices received to the combined index of prices paid. The trends in Index of Farmers Terms of Trade (Base TE2011-12=100) are presented in Chart 2.19.
- 2.37 The farmers' terms of trade (FToT) measures average changes to prices that farmers receive for their products, and the prices paid for inputs of production. As it can be seen from the chart, that the long-term trend of farmers' terms of trade index tends to be positive and the index increased from 87.7 in 2004-05 to about approximately 103 in 2010-11. From 2011-12 onwards, index remained around 98 during the current decade and was recorded at 100.28 in 2019-20. Increase in minimum support prices, rise in global agricultural prices and high food inflation were responsible for improvement in FToT during the period 2004-05 to 2010-11. On the other hand, low global commodity prices and steep rise in agricultural wages, diesel and other farm inputs has led to lower FToT index during the decent decade.
- 2.38 Unlike the farmers' terms of trade, the net barter terms of trade for agriculture (AGRToT), which includes both farmers and agricultural labourers, have shown considerable growth over this period. The terms of trade for agriculture was seen increasing from 2004-05 till 2009-10 and marginally declined during 2010-11 but

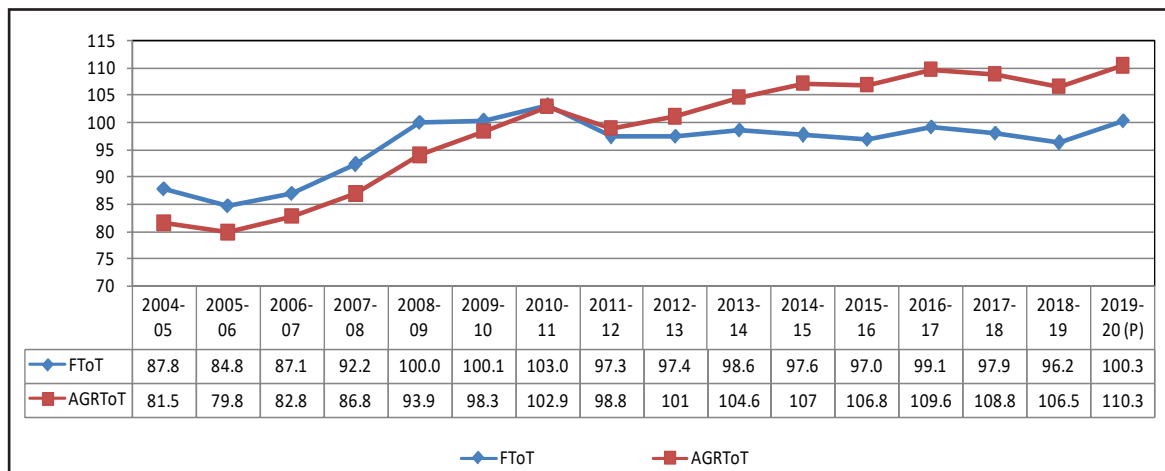
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again improved and reached upto 110.3 in 2019-20. In addition to high domestic and global agricultural commodity prices, rise in wages for agricultural labourers for non-agricultural activities has led to more improvement in ToT for agriculture sector compared to FTOT.

- 2.39 In order to improve the FTOT and AGRTOT, steps must be taken to ensure better prices to farmers for their produce and reduce unit cost of production. This can be ensured by making investment in new technology generation and its effective dissemination, trade reforms to reduce obstacles to agricultural trade, better infrastructure, policy reforms to create efficient and competitive markets, realising economies of scale, improving bargaining power of farmers by organizing them into groups like Farmer Producer Organizations etc.

Chart 2.19: Trends in Index of Farmers' Terms of Trade (FTOT) and Agricultural Terms of Trade (AGRTOT)



Note: P-Provisional

Source: Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

Procurement Policy and Operations

- 2.40 Procurement of foodgrains ensures MSP to the farmers and availability of foodgrains to the vulnerable sections of the society at affordable prices. It also helps in ensuring effective market intervention, thereby keeping the prices under check and also adding to the overall food security of the country.
- 2.41 Procurement of wheat and paddy is carried out by Food Corporation of India (FCI), which is the central nodal agency of Government of India, along with other State Agencies through a large number of purchase centres at various mandis and purchase centres. In KMS 2020-21, for paddy procurement, 39,122 procurement centres were operational. Procurement of paddy is open ended and whatever



quantity is offered by the farmers during the procurement season in conformity to quality standards is purchased at MSP by the Government agencies for central pool. State Governments utilise coarse cereals for distribution under National Food Security Act (NFSA) as well as Other Welfare Schemes (OWS) which are procured in consultation with FCI.

- 2.42 Centralized and Decentralized Procurement System exist for the procurement of foodgrains. Under centralized procurement system procurement of foodgrains is undertaken by the FCI directly or by the State agencies and stocks are handed over to FCI for storage. FCI reimburses the cost of the foodgrains procured by State agencies as soon as the agencies deliver stocks to FCI. Decentralized Procurement (DCP) of foodgrains was introduced by Government in 1997-98 to enhance efficiency of procurement and PDS, encourage local procurement of foodgrains more suited to the local taste and to extend benefits of MSP to local farmers as well as save on transit costs. Under the DCP system, the State Government or its agencies procure, store and distribute rice/wheat/coarse cereals against allocation for NFSA and OWS in the State and hand over the excess stocks to FCI in Central Pool. Government of India reimburses the expenditure incurred by the State Government on procurement, storage and distribution of DCP stocks on the laid down principles. At present, 15 States (8 for rice and 7 for rice/wheat) are under DCP system (Annex Table 2.3).
- 2.43 National Agricultural Cooperative Marketing Federation of India Ltd. (NAFED) procures pulses and oilseeds under Price Support Scheme (PSS) and Price Stabilization Fund (PSF) while Cotton Corporation of India (CCI) is the nodal agency for procurement of kapas (cotton) and undertakes Minimum Support Price (MSP) operations when prices of Fair Average Quality (FAQ) grade kapas fall below the MSP without any quantitative limits.

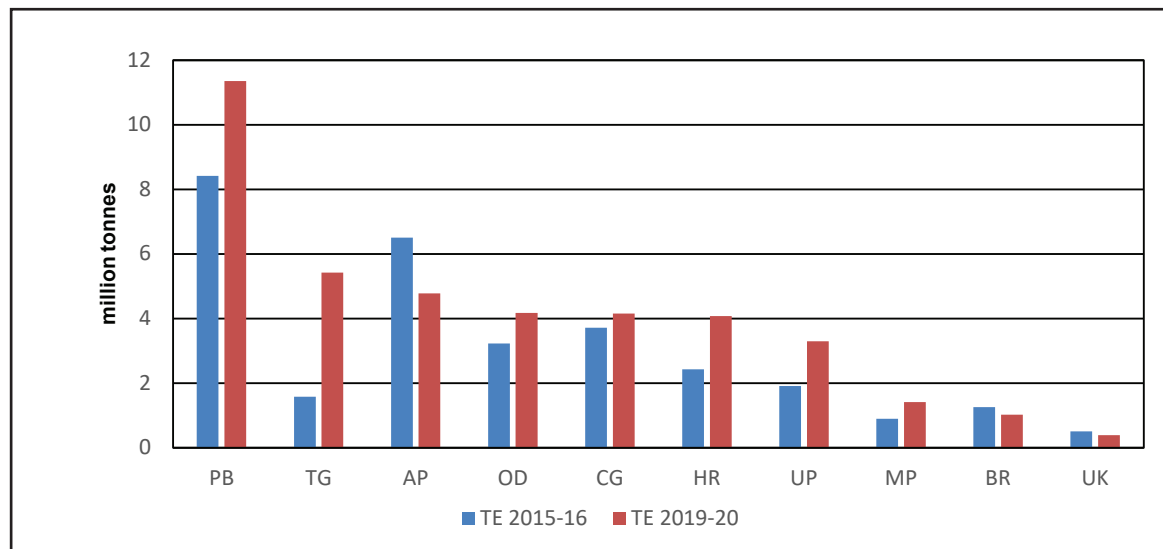
Procurement Trends

- 2.44 There has been a significant increase in procurement of rice during the last five years. Average procurement of rice has increased from 32.7 million tonnes in TE2015-16 to 44.9 million tonnes in TE2019-20, about 37 percent increase. Almost a similar trend was observed in all major rice producing states. As may be seen from Chart 2.20 that Telangana has recorded the highest increase (243.3%) in rice procurement between TE2015-16 and TE2019-20, followed by Uttar Pradesh (72.6%), Haryana (68.1%) and Madhya Pradesh (56.1%). Punjab, which has the largest share in rice procurement, recorded 34.9 percent increase in procurement between TE2015-16 and TE2019-20, while Bihar, Uttarakhand and Andhra Pradesh showed a decline during the period.

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Chart 2.20: Rice Procurement Trends in Major States during TE2015-16 and TE2019-20

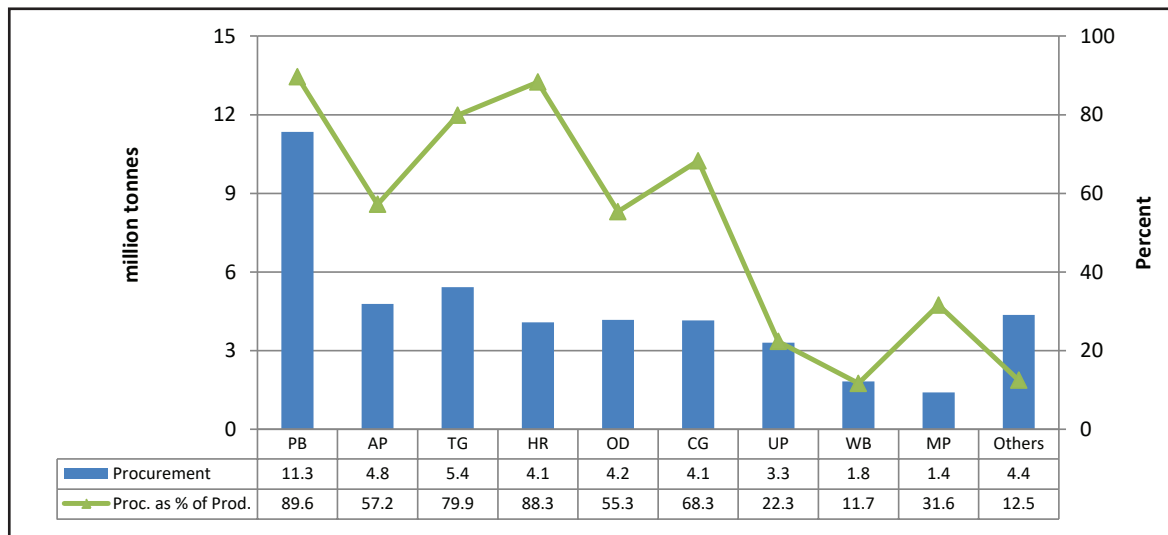


Source: Food Corporation of India

- 2.45 Procurement of rice increased significantly from 44.4 million tonnes in 2018-19 to 52 million tonnes in 2019-20, an increase of 17.1 percent. This increase was due to substantial increase in rice procurement in Telangana (2.3 million tonnes), Chhattisgarh (1.3 million tonnes), Odisha (0.4 million tonnes), Tamil Nadu (0.9 million tonnes), Andhra Pradesh (0.7 million tonnes) and Maharashtra (0.6 million tonnes).
- 2.46 During TE2019-20, procurement of rice stood at 44.9 million tonnes, which was 38.7 percent of total production of 116 million tonnes in TE2019-20 and 45.8 percent of marketed surplus of 97.88 million tonnes. Rice procurement in major States during TE2019-20 is shown in Chart 2.21. Among the States, total quantity of rice procured was the highest in Punjab (11.3 million tonnes), followed by Telangana (5.4 million tonnes), Andhra Pradesh (4.8 million tonnes) and Odisha (4.2 million tonnes). In Punjab, about 89.6 percent of total production was procured while in Haryana around 88.3 percent of production was procured during the TE2019-20. Other States, where more than half of total rice production was procured included Telangana (79.9%), Chhattisgarh (68.3%) and Andhra Pradesh (57.2%). Procurement remained almost static in West Bengal, only 11.7 percent of total production was procured, while in Uttar Pradesh 22.3 percent of the total production was procured in TE2019-20. Efforts should be made to increase rice procurement in these States to meet at least State requirements under the NFSA and OWS.



Chart 2.21: Procurement of Rice in Major Producing States, TE2019-20



Source: 1. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare
2. Food Corporation of India

2.47 Chart 2.22 shows the share of major States in marketed surplus and procurement of rice in TE2019-20. While West Bengal (15.6%) and Uttar Pradesh (14.8%) are the largest rice producing States and account for 11.1 percent and 11.8 percent of total marketed surplus of rice, their share in total procurement was much lower at 4.1 percent and 7.4 percent, respectively. Punjab has the highest share of marketed surplus at 12.9% percent while its share in procurement is much higher at 25.3 percent. In Andhra Pradesh and Odisha, which are among the top five rice producing States, share in procurement was higher than the marketed surplus share, indicating effective procurement system in these States. Other States, with a procurement share higher than the share in marketed surplus, were Telangana, Haryana and Chhattisgarh. In Telangana, share in procurement was 12.1 percent against marketed surplus share of only 6.4 percent. Out of 11 states, 6 states had procurement share higher than their share in marketed surplus. These trends clearly indicate that procurement operations need to be more equitable amongst various rice producing states.

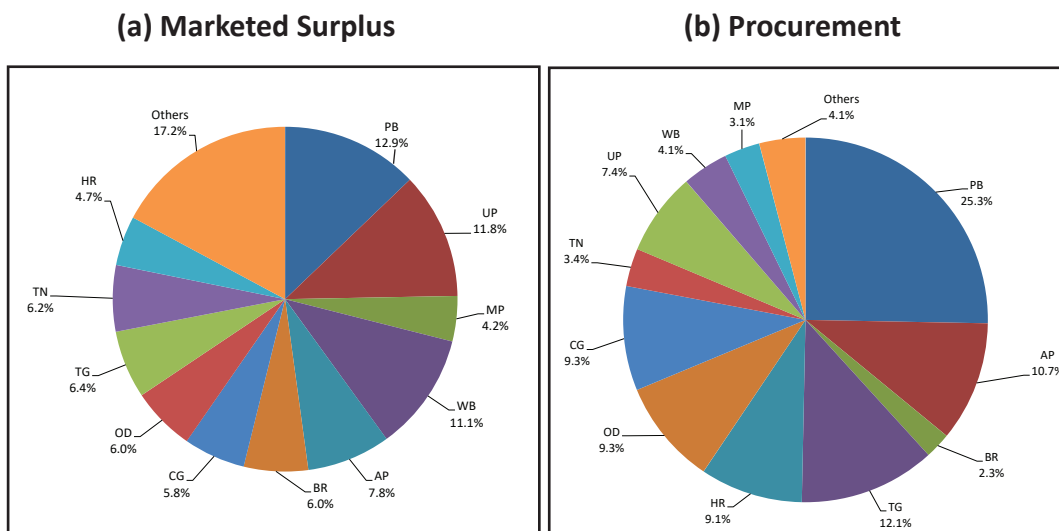
Coverage of Farmers

2.48 The number of farmers benefitted from rice procurement operations increased significantly to around 1.25 crore in 2019-20 from around 97 lakh in 2018-19, an increase of 28.9 percent. Chart 2.23 shows the trend in number of paddy farmers benefitting from procurement during last four years. The highest increase was observed in Haryana (10.6 lakh), followed by Telangana (5.1 lakh), Chhattisgarh (2.7 lakh), Odisha (1.5 lakh) and Andhra Pradesh (1.0 lakh). Telangana had the highest number (19.9 lakh) of beneficiary farmers, followed by Haryana (18.9 lakh) Chhattisgarh (18.4 lakh), Odisha (11.6 lakh) and Punjab (11.2 lakh).

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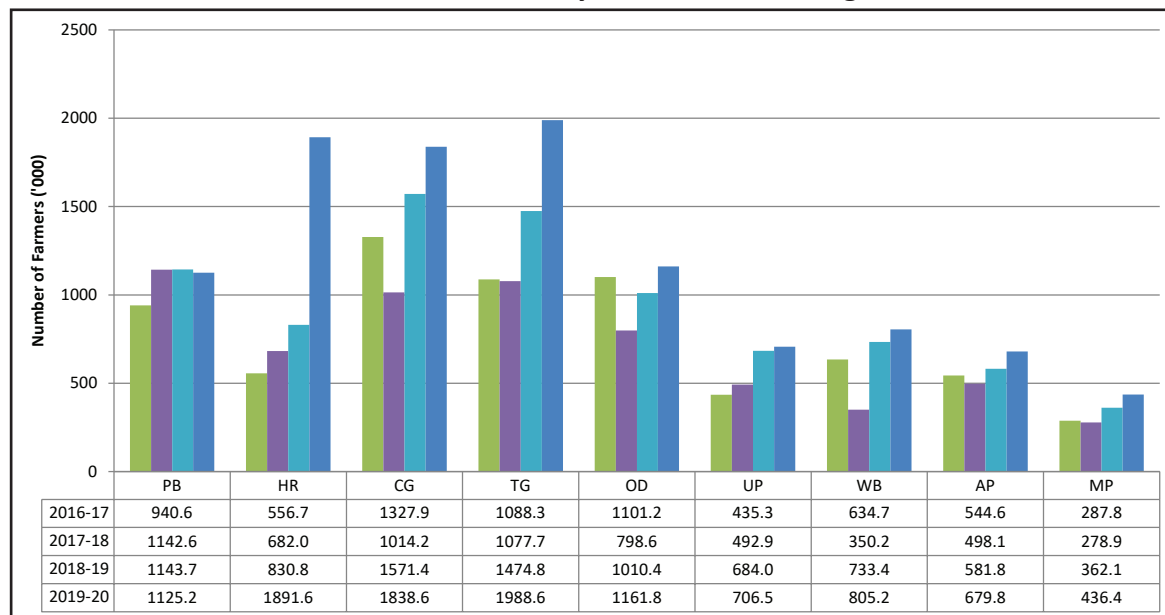


Chart 2.22: Share of Major States in Marketed Surplus and Procurement of Rice, TE2019-20



Source: 1. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare
2. Food Corporation of India

Chart 2.23: Trends in Number of Paddy Farmers Benefitting from Procurement



Source: Food Corporation of India



Participation of Small and Marginal Farmers in Procurement

- 2.49 During KMS 2020-21 significant increases in rice procurement was recorded compared to KMS 2019-20. As on March 5, 2021, 44.9 million tonnes of rice was procured, about 14.5 percent higher than corresponding period of 2019-20. Punjab accounted for the highest share (30.5%), followed by Uttar Pradesh (10%), Chhattisgarh (8.9%), Odisha (8.7 %) Haryana (8.4%) and Telangana (7.3 %). Bihar recorded the largest increase (290%), followed by MP (43.5%) TN (40.9%), West Bengal (26%) Punjab (25%) and UP (20.5%) in KMS 2020-21 over KMS 2019-20. Telangana had the highest number of beneficiary farmers, followed by Haryana, Chhattisgarh, Odisha and Punjab. States like Bihar, Tamil Nadu, Madhya Pradesh and Uttar Pradesh witnessed significant increase in beneficiary farmers, whereas Haryana, Punjab and Telangana recorded decline in number of beneficiary farmers.
- 2.50 As per information provided by the State Governments on procurement of paddy by farm-size, the distribution of farmers and their share in procurement during KMS 2019-20 and KMS 2020-21 is presented in Table 2.12. There is a significant increase in the share of marginal farmers in total number of farmers who benefitted as well as total quantity of rice procured in 2020-21 as compared to 2019-20 in all the six major states. The share of small and marginal beneficiary farmers in 2020-21 was the highest in Telangana (95%), followed by Chhattisgarh (82.8%), Andhra Pradesh (73.8%), Odisha (68.9%), UP (57.4%) and Gujarat (52.8%).

Table 2.12: Procurement of Paddy by Farm-Size in Andhra Pradesh, Chhattisgarh, Telangana, Uttar Pradesh, Gujarat and Odisha in 2019-20 and 2020-21

(percent)

Particulars	Year	Marginal Farmer (<1 ha)	Small Farmer (1-2 ha)	Semi-medium Farmer (2-4 ha)	Medium & Large (>4 ha)
Andhra Pradesh*					
Quantity Procured	2019-20	13.9	23.9	44.3	17.8
	2020-21	17.8	24.8	37.0	20.5
No. of farmers benefitted	2019-20	40.8	27.4	25.9	6.0
	2020-21	48.0	25.8	19.8	6.4
Chhattisgarh**					
Quantity Procured	2019-20	21.1	32.2	26.9	19.8
	2020-21	23.5	32.7	25.8	18.0
No. of farmers benefitted	2019-20	49.7	31.2	14.4	4.8
	2020-21	53.4	29.4	12.9	4.3

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Telangana [^]					
Quantity Procured	2019-20	31.0	28.4	24.7	15.8
	2020-21	50.9	28.9	14.3	5.9
No. of farmers benefitted	2019-20	57.5	24.4	13.4	4.7
	2020-21	79.2	15.8	4.2	0.8
Uttar Pradesh ^{^^}					
Quantity Procured	2019-20	4.8	22.6	36.5	36.2
	2020-21	7.4	31.5	33.0	28.1
No. of farmers benefitted	2019-20	12.7	29.4	35.4	22.5
	2020-21	19.6	37.8	28.0	14.5
Gujarat [#]					
Quantity Procured	2019-20	4.7	19.0	35.5	40.8
	2020-21	6.2	21.5	34.9	37.4
No. of farmers benefitted	2019-20	14.8	31.3	33.9	19.9
	2020-21	19.3	33.5	30.7	16.4
Odisha ^{##}					
Quantity Procured	2019-20	16.4	36.6	31.8	15.1
	2020-21	7.3	38.5	37.7	16.5
No. of farmers benefitted	2019-20	36.7	39.2	19.3	4.8
	2020-21	21.0	47.9	25.1	5.9

Note: *As on 10.02.2021, ** As on 22.01.2021, ^As on 02.01.2021, ^^ As on 23.02.2021, # As on 31.12.2020, ## As on 01.01.2021

Source: Replies from respective State Governments

Land Suitability for Rice Cultivation

2.51 Although rice is grown over vast areas of the country, the physical and agro-climatic requirements for growing rice are limited to certain areas. For example, rice is cultivated in West Bengal, Uttar Pradesh, Punjab, Andhra Pradesh, Odisha, Telangana, Tamil Nadu, Chhattisgarh, Bihar, Assam, Haryana and Madhya Pradesh but some of the areas are not suitable for the cultivation of paddy due to non-conducive agro-climatic and bio-physical conditions. Hence, there is a need to shift rice cultivation from some of the States/regions, which are not suitable for rice, to more suitable regions. Chart 2.24 (a) shows district-wise share of area under cultivation of rice and Chart 2.24 (b) shows district wise suitability for cultivation of rice in the country.



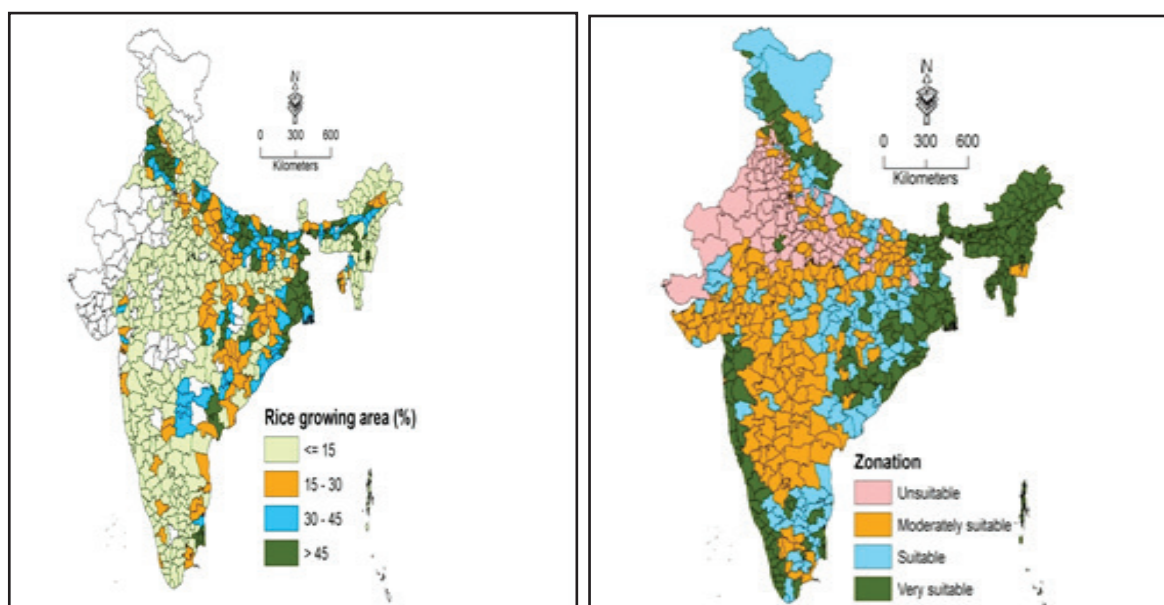
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2.52 As can be seen from the Chart, eastern states such as Odisha, West Bengal, Chhattisgarh, Jharkhand, North-Eastern states and south-west coast are more suitable for paddy cultivation. However, in most of these regions area under paddy is relatively low compared with North-Western Plains. Hence appropriate policy measures should be initiated to promote paddy cultivation in suitable areas and reduce area under paddy in Haryana, Punjab and western Uttar Pradesh. The assured procurement and sustained income from paddy has led to increase in its share in total cropped area over the years while share of pulses maize, oilseeds and coarse cereals has declined in these States, resulting in overexploitation of groundwater resources (Box 2.1).

Chart 2.24: India's Rice Cultivation and Suitability Maps

(a) Rice Growing Area Map

(b) Rice Suitability Map



Source: H Pathak, R Tripathi, NN Jambhulkar, JP Bisen and BB Panda (2020). *Eco-regional Rice Farming for Enhancing Productivity, Profitability and Sustainability*. NRRI Research Bulletin No. 22, ICAR-National Rice Research Institute, Cuttack 753006, Odisha, India. pp28

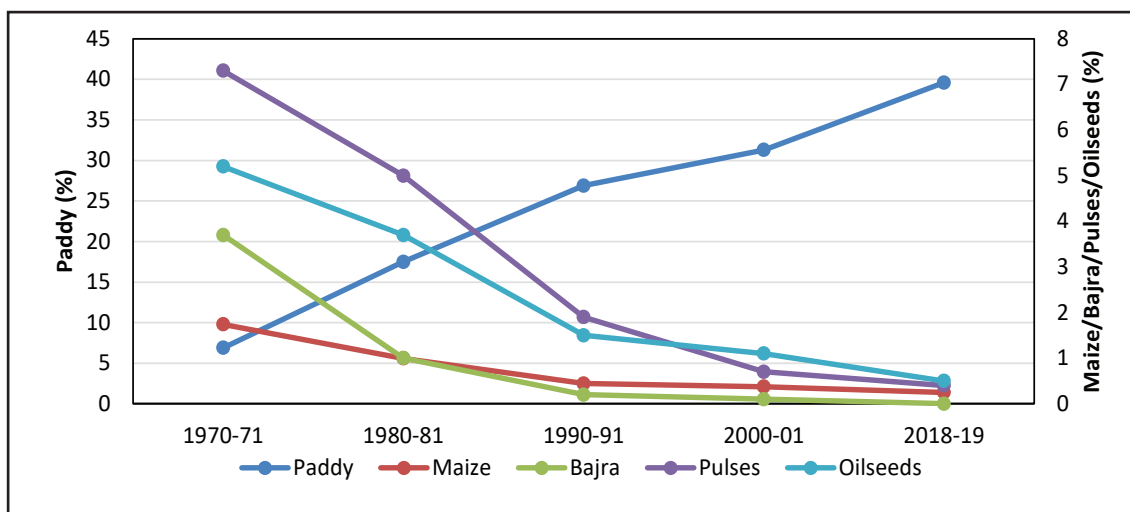
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Box 2.1 Distorted Cropping Pattern and Over-Exploitation of Groundwater Resources

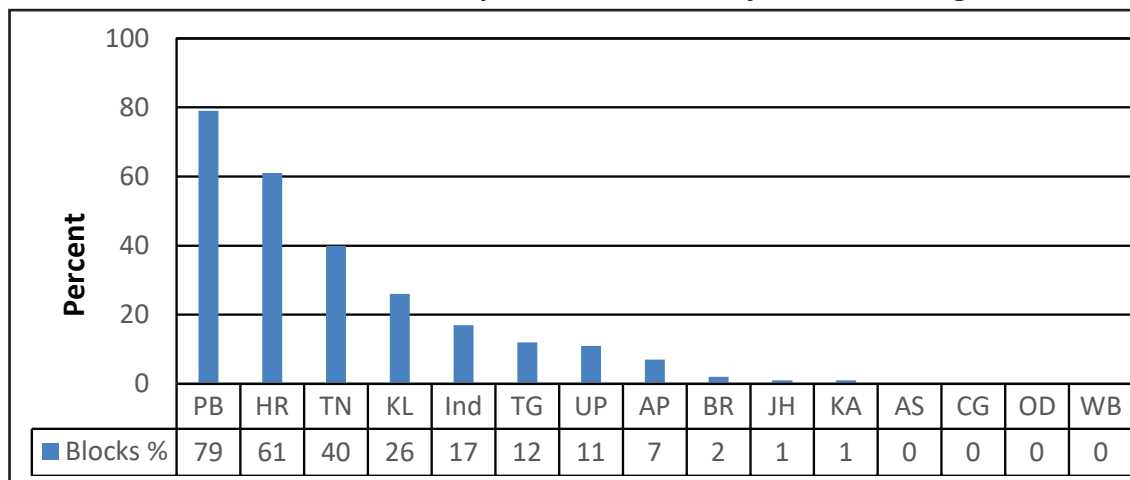
Assured procurement and income from rice-wheat cropping system has resulted in rising share of paddy and wheat in total cropped area, while share of pulses, oilseeds, maize and bajra has declined in Punjab during the last five decades (Chart 2.25). The share of paddy has increased from 6.9 percent in 1970-71 to 39.6 percent while share of maize has declined from 9.8 percent to 1.4 percent, pulses from 7.3 percent to 0.4 percent and oilseeds from 5.2 percent to 0.5 percent. Paddy being water-intensive crop has resulted in overexploitation of scarce water resources in States like Punjab and Haryana. The share of blocks in over-exploited groundwater resources has increased from about 53 percent in 2000 to 79 percent in 2017 in Punjab and from 49 percent in 2004 to 61 percent in 2017 (Chart 2.26).

Chart 2.25: Changing cropping pattern in Punjab: 1970-71 to 2018-19



Source: Economic Survey 2019-20, Government of Punjab

Chart 2.26 : Share of Over-exploited Blocks in Major Rice Growing States



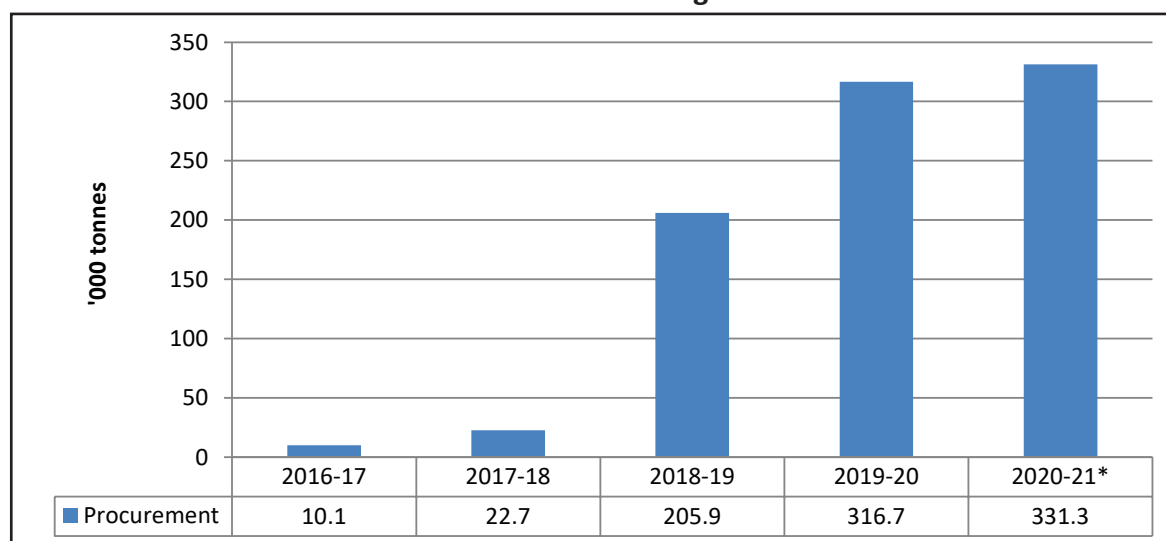
Source: Central Groundwater Board, Department of Water Resources, River Development and Ganga Rejuvenation, Ministry of Jal Shakti



Nutri-Cereals

- 2.53 Procurement of nutri-cereals after remaining low for two consecutive seasons in 2016-17 and 2017-18 showed a substantial increase in KMS 2018-19 at about 205.9 thousand tonnes. In KMS 2019-20, 316.7 thousand tonnes, of nutri-cereals was procured (Chart 2.27). As on 5th March, 2021, 331.3 tonnes of nutri cereals was procured.
- 2.54 During KMS 2016-17 about 62 thousand tonnes of maize was procured which declined to 47.8 thousand tonnes in KMS 2017-18 and then further to just 7 thousand tonnes in KMS 2018-19. However, record procurement of maize to the tune of 115 thousand tonnes took place in KMS 2019-20. As of 5th March, 2021, about 92.4 thousand tonnes of maize was procured (Chart 2.28).
- 2.55 State-wise procurement figures for nutri-cereals and maize during KMS 2019-20 and KMS 2020-21 are provided in Annex Table 2.4. During KMS 2020-21, MP had the largest share in procurement of Jowar (89%) and Bajra (65.5%), while maize procurement was concentrated mainly in UP and Maharashtra. There is a need to strengthen procurement for most of the nutri-cereals and ensure regular outlet through Public Distribution System and OWS. Efforts should also be made to encourage value addition in nutri-cereals through industry initiatives to provide remunerative prices to farmers.

Chart 2.27: Procurement of Nutri-Cereals during KMS 2016-17 to KMS 2020-21



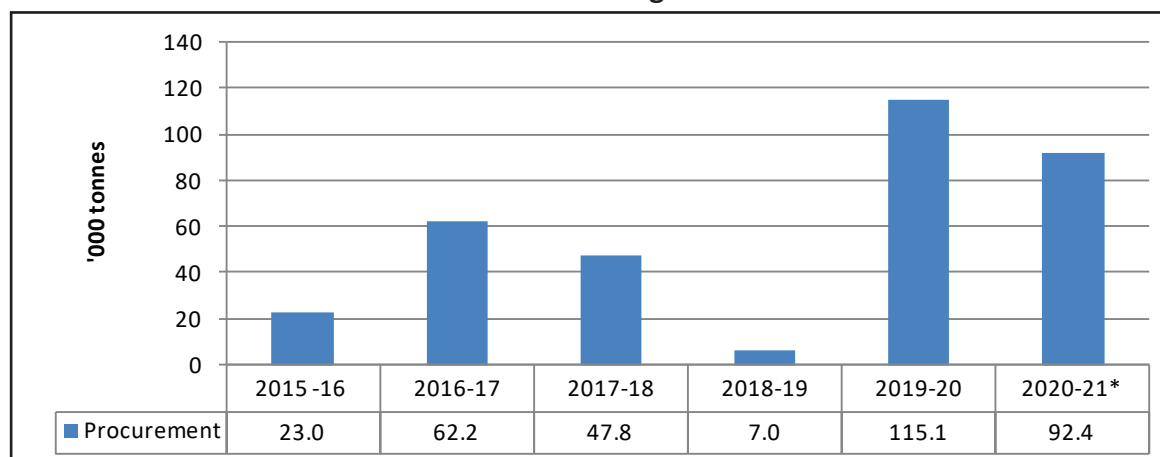
Note: *Figures reported as on 05.03.2021

Source: Food Corporation of India

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Chart 2.28: Procurement of Maize during KMS 2016-17 to KMS 2020-21



Note: *Figures reported as on 05.03.2021

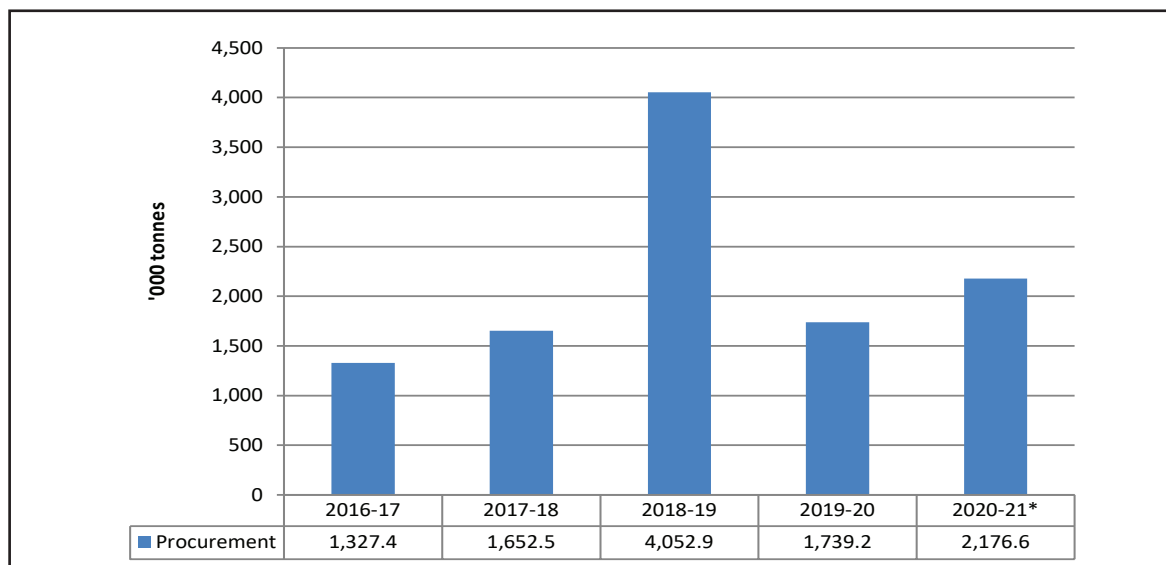
Source: Food Corporation of India

Pulses

2.56 Chart 2.29 shows the trend in procurement of pulses during the last five years. Procurement of pulses increased from 1,327.4 thousand tonnes in 2016-17 to a record 4,052.9 thousand tonnes in 2018-19. Procurement of pulses declined to 1,739.2 thousand tonnes in 2019-20. Till 11th March 2021, around 2,176.6 thousand tonnes of pulses had been procured by NAFED. Procurement of tur was 536 thousand tonnes in KMS 2019-20, which was about 95 percent higher than in KMS 2018-19. About 166 thousand tonnes of moong were procured, which were significantly lower than procurement of 300.3 thousand tonnes in KMS 2018-19, due to improvement in market prices during the 2019-20. Procurement of urad also declined steeply from 510.4 thousand tonnes in 2018-19 to just 18.4 thousand tonnes in 2019-20 due to improvement in market prices. State-wise information on procurement of pulses may be seen in Annex Table 2.5.



Chart 2.29: Procurement of Pulses during 2016-17 to 2020-21



Note: *Figures reported as on 11.03.2021

Source: National Agricultural Cooperative Marketing Federation of India (NAFED)

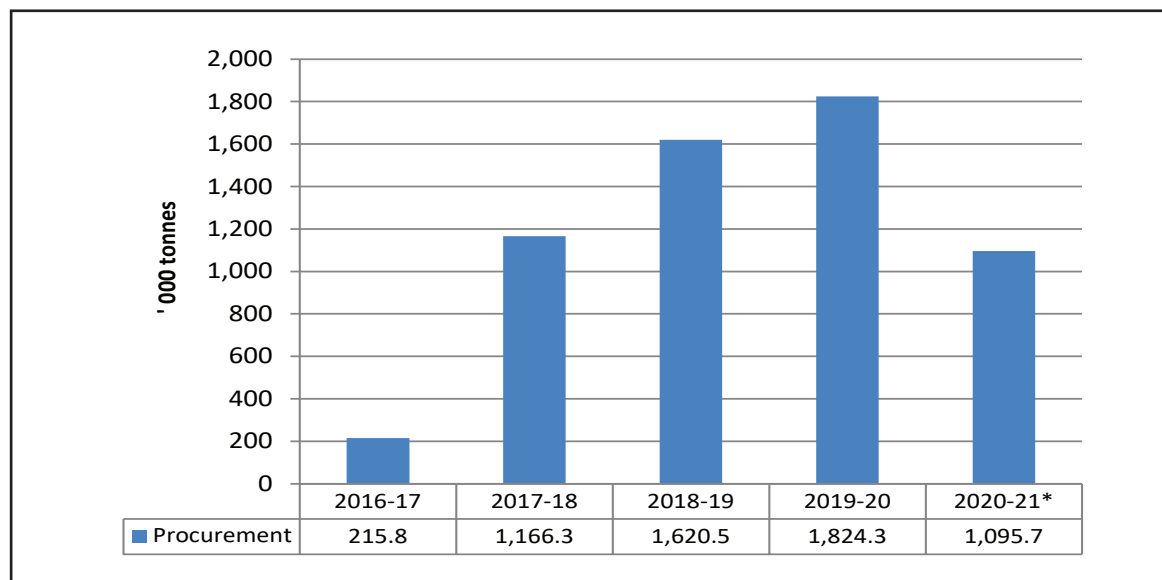
Oilseeds

- 2.57 Chart 2.30 shows trends in procurement of oilseeds over the last five years. Procurement of oilseeds increased steadily from 21.8 thousand tonnes in 2016-17 to 1,824.3 thousand tonnes in 2019-20. Till 11th March 2021, around 1,095.7 thousand tonnes of oilseeds have been procured. Procurement of groundnut increased from 717.4 thousand tonnes in 2018-19 to 721 thousand tonnes in 2019-20. Over the same period procurement of soybean declined from 19.5 thousand tonnes in 2018-19 to 10.7 thousand tonnes in 2019-20 as indicated in Annex Table 2.6.
- 2.58 Oilseeds are primarily used for oil, food, feed and industrial applications and require processing. Procurement of oilseeds by public agencies is neither desirable nor feasible as oilseeds procured under PSS are sold in open market at a discounted price, thereby creating disincentive for private players to procure directly from farmers. Therefore, efforts should be made to effectively implement Price Deficiency Payment Scheme (PDPS) and Private Procurement & Stockist Scheme (PPPS) for oilseeds instead of procurement under PSS.
- 2.59 As seen in Chart 2.29 and 2.30, procurement of pulses and oilseeds has increased during the last few years. The overall procurement quantity sanctioned by Ministry of Agriculture is fixed at 25 percent of actual production of the commodity. As seen from Annex Table 2.8, the ceiling of 25 percent has not been a constraint for most of the States for most crops as actual share of procurement has been usually much below sanctioned quantity.

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Chart 2.30: Procurement of Oilseeds during 2016-17 to 2020-21



Note: *Figures reported as on 11.03.2021

Source: National Agricultural Cooperative Marketing Federation of India (NAFED)

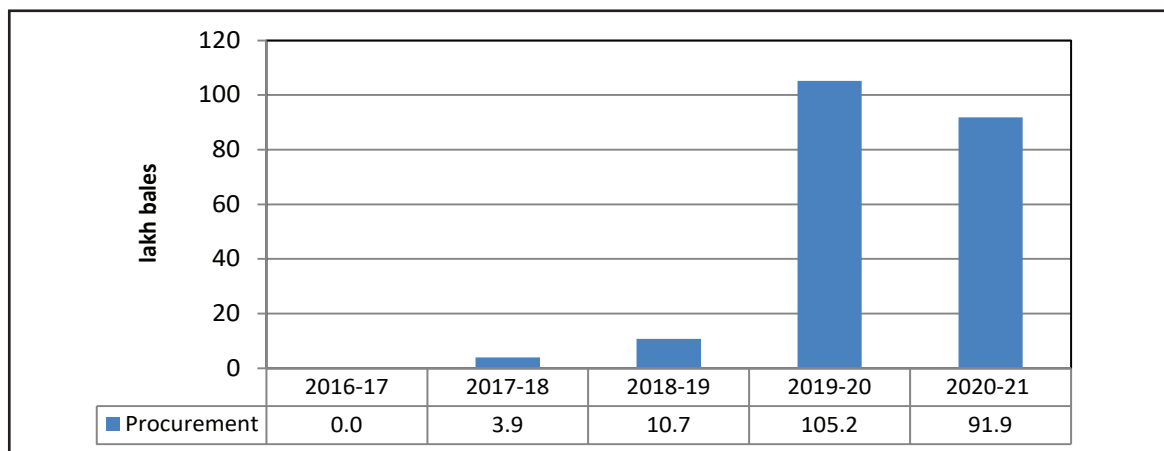
Cotton

2.60 Cotton Corporation of India (CCI) undertakes price support operations whenever the market price of cotton (kapas) falls below the minimum support price without any quantitative limit. CCI conducts its procurement operations through more than 400 cotton procurement centres in all major cotton growing States. Its operations cover all the cotton growing states of India comprising Punjab, Haryana and Rajasthan in Northern Zone; Gujarat, Maharashtra, Madhya Pradesh and Orissa in Central Zone and Andhra Pradesh, Telangana, Karnataka and Tamil Nadu in Southern Zone. The year wise MSP procurement of cotton by CCI since 2016-17 is given in Chart 2.31. In general, procurement by CCI for MSP operations had been highly variable in last five years. Cotton procurement has increased significantly during last five years. In 2019-20, CCI procured about 105.15 lakh bales of cotton (29% of production) while in 2020-21, 91.87 lakh bales (25.13% of production) of cotton was procured. Telangana, Punjab and Odisha accounted for 45% of total procurement in 2020-21.



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Chart 2.31 Year-wise MSP procurement of Cotton during 2016-17 to 2020-21



Source: Cotton Corporation of India

Bonus on MSP: Market Distortions

2.61 Provision of giving bonus over and above the MSP especially for paddy by State Governments creates distortions in the market. During KMS 2019-20 and KMS 2020-21, Chhattisgarh, Kerala, Tamil Nadu and Jharkhand had declared bonus for paddy (Table 2.13). For instance, Kerala declared a bonus of ₹880 per quintal for paddy (common) in KMS 2019-20, which is about 48.4 percent of MSP. Similarly, Chhattisgarh paid a bonus of ₹685 per quintal on paddy for 2019-20 but in 2020-21 provided support under a scheme named “Rajiv Gandhi Kisan Nyay Yojana.” Farmers in Jharkhand were paid ₹185 per quintal as bonus in KMS 2019-20 and ₹182 per quintal in KMS 2020-21.

Table 2.13: Bonus Declared by Selected States for Paddy

(₹/qtl)

States	KMS 2019-20	KMS 2020-21
Chhattisgarh	685	_*
Kerala	Common =880	Common =880
	Grade A=860	Grade A=860
Tamil Nadu	Common = 50	Common = 50
	Grade A = 70	Grade A = 70
Jharkhand	185	182

Note: * During KMS 2020-21, the Government of Chhattisgarh procured paddy from the farmers @ ₹2,500/qtl by paying ₹10,000/acre under the Rajiv Gandhi Kisan Nyay Yojana

Source: 1. Food Corporation of India

2. Replies from State Governments

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Market Fees and Other Incidental Charges

2.62 Many States charge various fees/taxes/charges, which result in high procurement incidentals leading to high economic cost of grains. Moreover, it has not led to any discernible improvement in mandi infrastructure. Table 2.14 shows the State-wise fees and incidental charges levied on rice procurement in 2020-21. As can be seen from the table below, total fee and incidentals charged on rice procurement ranged from ₹18.15 per quintal in Karnataka to ₹120.15 per quintal in Punjab. These distortions restrict inter-State trade and makes markets inefficient. In view of the above, Commission suggests that the States charging high fee should be disincentivised through reduced procurement of grains from such States.

Table 2.14: State-wise Fees/Taxes/Charges levied on Rice Procurement (2020-21)*

States	Market Fee/ Mandi Charges (%)	Rural Development/ Other Fee\$ (%)	Commission/Other Charges (₹/qtl)	Total (₹/qtl)
Andhra Pradesh	1.0	-	31.25	49.40
Assam	1.0	-	31.25	49.93
Chhattisgarh	2.0	0.2	31.25	71.18
Haryana	2.0	1.0	45.38#	101.42
Karnataka	1.0	-	-	18.15
Kerala	-	-	31.25	31.25
Madhya Pradesh	2.0	0.2	31.25	71.18
Maharashtra	1.05@	0.15	31.25	53.06
Odisha	2.0	-	-	36.30
Punjab	3.0	1.0	45.38#	120.10
Telangana	1.0	-	31.25	49.40
Uttar Pradesh	2.0	0.5	31.25	77.95
Uttarakhand	2.0	0.5	31.25	76.62
West Bengal	0.5	-	31.25	40.59

Note: *As on 12.03.2021, Provisional Cost Sheet for KMS 2020-21 has been issued for Punjab, Haryana, Bihar, U.P., West Bengal only and KMS 2020-21 rates for said states have been inserted in above table. Further, due to non-issuance of PCS for KMS 2020-21 for States such as A.P., Chhattisgarh, Karnataka, Kerala, M.P., Maharashtra, Telangana & Uttarakhand, KMS 2019-20 rates have been inserted.

\$Rural development fee is allowed only in Punjab and Haryana, while in other States such as Chhattisgarh, M.P., Maharashtra, U.P. and Uttarakhand, other types of statutory charges such as Nirashritshulk, Marpari, Development Cess in addition to Market fee is allowed by DFPD.

#As per revised principle, Arhatiya charges have been delinked from MSP and rates have been provided based on ₹ per quintal (changed from ad valorem to specific rate)

@It includes 0.05 percent of Supervision Fee in addition to 1 percent Market Fee

Source: Department of Food and Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution

Equity Issues in Rice Procurement

- 2.63 Despite significant increase in procurement as well as beneficiary farmers, uneven distribution of procurement beneficiaries raises concerns of efficiency and social equity, For example in TE2019-20, Punjab accounted for the 10.9 percent of the rice production of the country but contributed 25.3 percent to total procurement (Table 2.15). Similarly, Telangana, Andhra Pradesh, Haryana and Chhattisgarh had significantly higher share in procurement compared to their share in rice production. On the other hand, West Bengal with 13.5 percent share in production contributed only 4.1 percent of procurement while share of Uttar Pradesh in total procurement was 7.4 percent, much lower than production share of 12.7 percent. Similarly. Tamil Nadu, Bihar and Assam also had lower share in rice procurement vis-à-vis their share in production. As per agricultural census 2015-16, about 14.2 percent of the paddy farmers benefitted from the procurement operations. The share of the beneficiary farmers as a proportion of total farmers was highest at 116.8 percent in Punjab, followed by 114.9 percent in Haryana, 79.3 percent in Kerala and 65.7 percent in Telangana. On the other hand, less than 5 percent paddy farmers benefitted in Assam, Bihar, Jharkhand, Karnataka and Uttar Pradesh. Procurement was more than 85 percent of marketed surplus in Punjab, Haryana, Kerala, Telangana, and while in States like Bihar, West Bengal, Jharkhand, Assam and Karnataka less than 20 percent of marketed surplus was procured in TE2019-20. Therefore, concerted efforts are required to increase share of these States in rice procurement as well as coverage of paddy farmers under MSP operations. The Commission recommends that special efforts should be made to extend the benefits of procurement operations to small and marginal farmers especially in states with proportionately low procurement, particularly in Eastern and North eastern regions.
- 2.64 There are also large variations in average procurement per farmer as it is evident from the Table 2.15. The per farmer procurement varied from 10 tonnes in Punjab, 8.1 tonnes in Andhra Pradesh to less than 3 tonnes in Chhattisgarh, Karnataka, Kerala and West Bengal.

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Table 2.15: Share of Beneficiary Farmers, Procurement in Marketed Surplus and Procurement per Farmer in major Producing States

States	Beneficiary farmers as percent of total farmers	Procurement as percent of marketed surplus	Procurement per farmer (t/ha)	Share in total production	Share in total procurement
Andhra Pradesh	13.8	62.4	8.1	7.2	10.7
Assam	0.6	3.2	7.9	4.4	0.3
Bihar	1.7	17.4	4.7	5.9	2.3
Chhattisgarh	39.3	73.3	2.8	5.2	9.3
Haryana	114.9	89.5	3.6	4.0	9.1
Jharkhand	2.4	6.4	4.2	2.9	0.4
Karnataka	1.2	1.6	2.9	2.9	0.1
Kerala	79.3	88.4	2.4	0.5	0.9
Madhya Pradesh	11.7	33.9	3.9	3.8	3.1
Odisha	21.0	71.6	4.2	6.5	9.3
Punjab	116.8	90.2	10.0	10.9	25.3
Tamil Nadu	16.0	24.7	3.0	5.7	3.4
Telangana	65.7	87.1	3.6	5.8	12.1
Uttar Pradesh	4.2	28.5	5.3	12.7	7.4
Uttarakhand	8.6	78.8	7.7	0.6	0.9
West Bengal	9.4	16.9	2.9	13.5	4.1
All India	14.2	45.8	4.6	95.2	99.9

Note: 1. Beneficiary Farmers relate to figures for TE2019-20

2. Number of Paddy Operational Holdings as per 2015-16 Agriculture Census has been taken as a proxy to number of paddy farmers

Source: 1. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

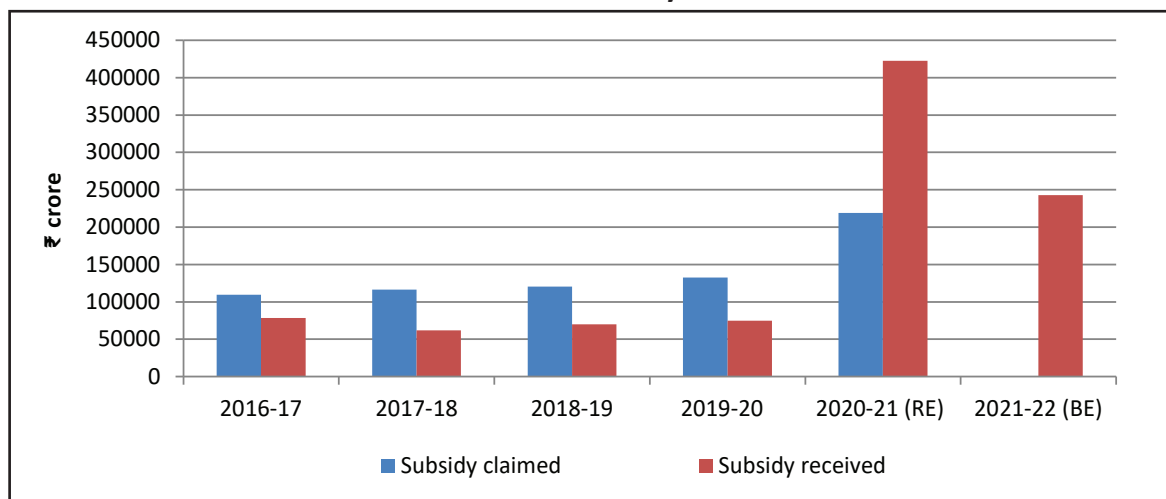
2. Food Corporation of India

Food Subsidy and Economic Cost

2.65 Food subsidy has three components, (i) consumer subsidy (difference between Economic cost and Central Issue Price), (ii) buffer carrying cost consisting of operational cost of buffer stock and carryover charges for holding excess stocks and (iii) operational losses of FCI and distribution of grains free of cost during calamities. The trends in total food subsidy during the last 5 years are presented in Chart 2.32. Food subsidy claimed by FCI has doubled during the last 5 years, from ₹1,09,600 crore in 2016-17 to ₹2,19,009 crore in 2020-21 (RE) as on 29th February, 2021. On the other hand, subsidy received has increased from ₹78,334 crore in 2016-17 to ₹1,71,380 crore in 2020-21 (RE). In Budget 2021-2022, the Hon'ble Finance Minister announced discontinuation of the National Small Savings Fund (NSSF) loan to FCI for food subsidy and ₹4,22,618 crore was provided in 2020-21 (RE). The NSSF loan outstanding with FCI as on 31st March, 2020 was ₹2,54,600 crore. In 2021-22 (BE), ₹2,42,836 crore has been provided for food subsidy.



Chart 2.32: Trend in Subsidy Position of FCI



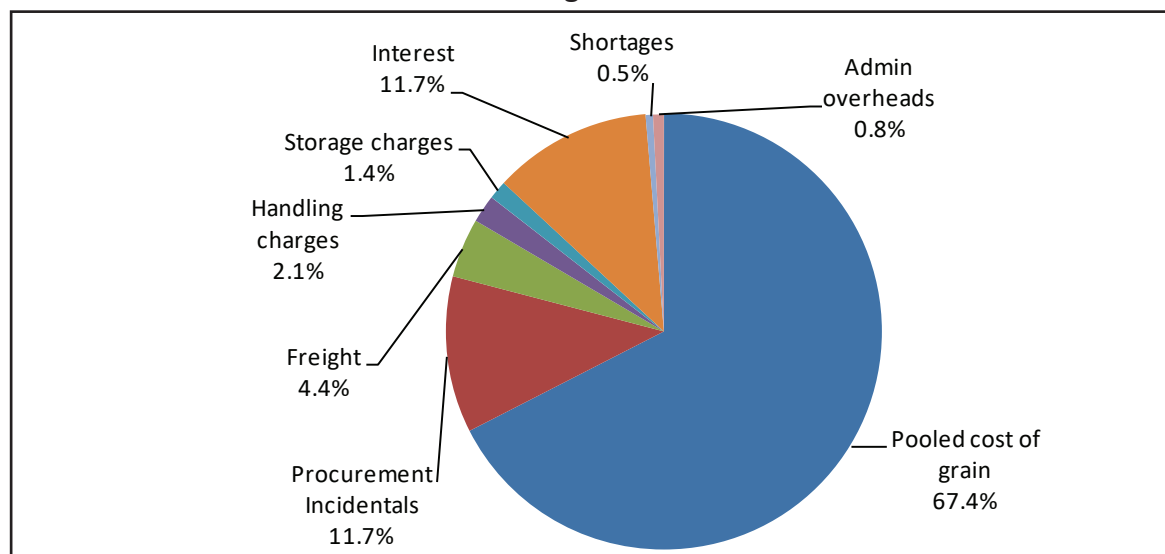
Source: Food Corporation of India

- 2.66 The food subsidy incurred by the Government has risen substantially over the years primarily due to rising difference between economic cost and Central Issue Price (CIP) of grains. While the economic cost of rice has increased from ₹2,123 per quintal in 2011-12 to ₹3,999 per quintal in 2020-21, the CIP for NFSA beneficiaries has not increased since 2013. The rate of ₹300 per quintal of rice was fixed under the Act initially for a period of three years and was to be revised from time to time but has not been revised. In 2021-22 (BE), economic cost of rice is estimated to increase to ₹4,294 per quintal.
- 2.67 Economic cost of procuring foodgrains by FCI has three main components (i) pooled cost of grains, (ii) procurement incidentals consisting of statutory charges, gunny cost, labour, transportation, storage, interest etc. and (iii) distribution costs consisting of freight, handling, storage, interest, shortages and administrative overheads. Breakup of the economic cost in Chart 2.33 shows that the pooled cost of grain account for 67.4 percent of total economic cost, the share of procurement incidentals was 11.7 percent and distribution costs accounted for 20.9 percent in 2019-20 (RE). Trends in different components of procurement incidentals and distribution cost of rice for last five years are given in Annex Table 2.7.

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Chart 2.33: Share of different Components of Economic Cost of Rice Procurement during 2020-21



Source: Food Corporation of India

Awareness about MSP and FAQ Norms

2.68 Creating awareness about prevailing MSP, FAQ standards, system of procurement, payment mechanism etc. would help in ensuring better prices to farmers and adoption of modern technologies in farming through which we can ensure successful implementation of Scheme. Wide publicity about MSP, FAQ norms and procurement agencies by the Central and State Governments in regional/vernacular, electronic and print media and also through pamphlets and announcements in the villages well before the start of procurement season will help in reaching out to large number of farmers. In addition, farmers need to be trained about FAQ norms and post-harvest handling methods and access to infrastructure to minimize post-harvest losses and improve quality to get better prices.

Recapitulation

2.69 As per estimates of FAO, USDA and IGC, world production of rice in 2020-21 is projected to improve over 2019-20. In case of maize and soybean also, FAO USDA and IGC forecasts a rise in production. In India, with marginal increase in production, lower stocks and increase in exports, domestic prices of rice are projected to improve in 2020-21. Total production of pulses as well as kharif pulses in 2020-21 is estimated to be higher than 2019-20, though lower than the target for 2020-21. Also, cotton production in the country is estimated to rise significantly in 2020-21.

- 2.70 All India average market prices of paddy remained below MSP during the last five marketing seasons. The difference between market prices and MSP had narrowed in KMS 2019-20 which further narrowed in KMS 2020-21. In case of maize, there was a steep decline in the market prices in KMS 2020-21 and the average market price was 26.4 percent lower than MSP. For pulses such as tur and moong market prices remained below MSP in KMS 2020-21 though market prices improved over previous two years. In case of urad, average market prices remained slightly above MSP in KMS 2020-21. In case of groundnut, gap between MSP and average market price widened in KMS 2020-21. For soybean, average market prices remained slightly above MSP in KMS 2020-21. The market prices of cotton were above MSP from KMS 2016-17 to KMS 2018-19 but fell below MSP in subsequent years.
- 2.71 Significant improvement was witnessed in the procurement of rice in 2019-20 as compared to 2018-19. However, there exists a considerable disparity in procurement vis-à-vis production share. On the one hand, State which have relatively less production viz., Punjab, Telangana, Chhattisgarh and Haryana have procured more than their share in production, while on the other states viz., West Bengal, Tamil Nadu, Himachal Pradesh, Bihar and Assam have procured relatively less quantity than their production share. Rice procurement can be increased in leading rice producing states like West Bengal and Uttar Pradesh to meet at least the State requirement under NFSA and OWS. There is a dire need to holistically execute procurement operations covering mainly the small and marginal farmers and low procurement states having significant production.
- 2.72 In addition, creating large scale awareness campaign about prevailing MSP, FAQ standards, system of procurement, payment mechanism etc. is highly warranted in order to bring more farmers under safety net/ assurance system. The procurement agencies of the Central and State Governments may organise wide publicity about MSP, FAQ norms in regional/vernacular, electronic and print media and also through pamphlets and announcements in the villages well before the start of procurement season. Also farmers need to be trained about FAQ norms and post-harvest handling methods and access to infrastructure to minimize post-harvest losses and improve quality to get better prices.



Crop Yield and Input Management

- 3.1 Agriculture is the crucial sector in India as it ensures food and nutritional security to growing population. The availability of land for agriculture is diminishing due to rapid urbanization and industrialization, thus in order to feed growing population, enhancement of yield level is only viable option. Moreover, improvement in yield will bring down the cost of production and make farming a viable, remunerative and globally competitive enterprise. Although, there are considerable improvements in crop cultivation and management in the last several decades leading to a significant rise in yield level in almost all crops, but in recent years it was observed that the yield levels have stagnated or started declining in selected crops in some regions. Current yield levels are also lower than potential yield pointing to realizable Yield gains. Further, India's overall yield levels in major crops still lag behind many countries in the world. The prime reasons attributed to this are monsoon dependency, slow pace of irrigation expansion, and decline in soil fertility among others. Given the set of binding constraints on use of key inputs and other resource endowments, India is at the cusp of enhancing yield levels of major crops. This chapter presents an analysis of the trends in yield for kharif crops at the national as well as State level and compares the country's yield level with the prominent countries of the world. In addition, the chapter also enumerates various factors that impede agricultural yield at the national level along with various initiatives taken to improve yield.

Yield Growth Trends

- 3.2 Table 3.1 analyses and presents the average growth rates in the area, production and yield of major kharif crops for Triennial Ending (TE) 2010-11, 2015-16 and 2020-21.

Cereals

- 3.3 Production of total cereals witnessed the highest growth (2.4%) in TE2020-21 as a result of highest growth in area (0.4%) and yield (2.0%) during the last 14 years. Similarly, kharif cereals recorded highest growth in production (2.1%) in TE2020-21 as a result of highest growth in yield (2.2%) though there was a marginal decline in rate of growth of area under kharif cereals over the same period. Growth in rice production accelerated to 2.2 percent in TE2020-21 after recovering from a decline of (-)0.3 percent in TE2015-16 as a result of steep increase in rate of growth of yield from (-)0.8 percent in TE2015-16 to 2 percent in TE2020-21. Jowar recorded the highest rate of growth of yield (7.4%) among all kharif cereals in TE2020-21



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after recording deceleration in growth of yield in TE2015-16 (-)5.4 percent and (-)2 percent in TE2010-11. Owing to this, rate of growth of jowar production has also sharply increased to 3 percent in TE2020-21 after recording successive negative growth rates in TE2010-11 and TE2015-16. However, growth in area under jowar has been negative for the last 14 years. Bajra and ragi have also shown growth in production at 4.4 percent and 3.6 percent, respectively in TE2020-21 as a result of growth in yield even though both the crops suffered declined in area under cultivation in TE2020-21. Maize is the only kharif cereal with positive growth in area in the last fourteen years. Maize production recorded a growth of 1.7 percent in TE2020-21, which though higher than the growth recorded in TE2015-16 (0.7%), is much less than that recorded in TE2010-11 (6.3%). After recording a growth of 4.2 percent in yield in TE2010-11, maize yield has been stagnant in TE2015-16 followed by marginal increase (0.5%) in TE2020-21.

Pulses

3.4 After recording a growth of 8 percent in TE2010-11 there has been a deceleration in production of total pulses though the deceleration has slowed from (-)3.6 percent in TE2015-16 to (-)0.9 percent in TE2020-21. Growth in yield slowed to (-)5.9 percent in TE2015-16 after recording a growth of 3.6 percent in TE2010-11 and has been stagnant in TE2020-21. Growth in area under pulses declined by (-)0.9 percent in TE2020-21 after registering growth of 4.1 percent in TE2010-11 and 2.5 percent in TE2015-16. The trend in kharif pulses has been similar with deceleration in production in TE2020-21 (-)2.8 percent as a result of decline in both area under kharif pulses and yield. Urad recorded a steep decline in production at (-)8.9 percent in TE2020-21 as a result of significant deceleration in area under cultivation (-)7.4 percent and negative growth in yield (-)1.2 percent. Rate of growth in production and yield of tur has been continuously negative since TE2010-11, though the rate of decline in both production and yield has been slower in TE2020-21 compared to TE2015-16. Moong recorded the highest growth in production among major kharif pulses in TE2020-21 at 9.4 percent as a result of growth in yield (5.1%) and area (4%).

Oilseeds

3.5 There has been a sharp increase in production of total oilseeds in TE2020-21 by 6 percent after decline of (-)6.1 percent in TE2015-16 as a result of increase in both area (5.6 %) and yield (0.4 %) in TE2020-21. Similarly, kharif oilseeds witnessed an impressive growth of 6.2 percent in production in TE 2020-21 after a negative growth of (-)6.5 percent in TE2015-16 as a result of increase in rate of growth of area at 6.5 percent outweighing marginal decline in yield in TE2020-21. Of all major kharif oilseeds, soybean recorded the sharpest increase in production at 9.4 percent in TE2020-21 after a decline of (-)16.4 percent in TE2015-16 as a result of increase in area (8%) and yield (1.5%) in TE2020-21. Groundnut also witnessed a growth of 7.5 percent in production in TE2020-21 supported by growth in both area (6.7%) and

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yield (1.4%). Sesamum also recorded 3.4 percent growth in production as a result of growth in area (1.4%) and yield (2.8%) in TE2020-21. After recording negative growth in production in TE2010-11 (-)23.6 percent and TE2015-16 (-)17.7 percent, sunflower recorded positive growth in production (0.5%) in TE2020-21 as a result of steep growth in yield (7.9%), which outweighed a decline in growth in area by (-)6.7 percent. Nigerseed registered a sharp decline in production (-)15.2 percent in TE2020-21 as a result of steep decline in area (-)19.7 percent outweighing growth in yield by 4.9 percent in TE2020-21.

Cotton

3.6 Rate of growth of production of cotton accelerated to 5.1 percent in TE2020-21 after a decline of (-)4 percent in TE2015-16 as a result of growth in area by 2 percent and yield by 2.7 percent.

Table 3.1: Triennial Trends in Growth Rate of Area, Production and Yield of Major Kharif Crops

(percent)

	Area			Production			Yield		
	TE2010-11	TE2015-16	TE2020-21	TE2010-11	TE2015-16	TE2020-21	TE2010-11	TE2015-16	TE2020-21
Total Cereals	0.0	0.3	0.4	1.8	-0.5	2.4	1.8	-0.7	2.0
Kharif Cereals	-1.1	0.1	-0.2	0.3	-0.7	2.1	1.2	-0.8	2.2
Rice	-0.7	0.6	0.2	0.0	-0.3	2.2	0.6	-0.8	2.0
Jowar	-1.6	-0.6	-5.2	-3.9	-6.3	3.0	-2.0	-5.4	7.4
Bajra	0.4	-0.6	-0.7	7.2	-2.4	4.4	5.7	-1.7	4.9
Ragi	-2.4	0.3	-2.0	1.2	6.1	3.6	3.5	5.3	3.1
Maize	1.8	0.6	1.2	6.3	0.7	1.7	4.2	0.0	0.5
Total Pulses	4.1	2.5	-0.9	8.0	-3.6	-0.9	3.6	-5.9	0.0
Kharif Pulses	3.2	4.6	-1.6	10.8	-2.2	-2.8	4.8	-6.1	-0.5
Tur	6.4	0.6	0.8	-0.5	-5.1	-1.9	-6.9	-5.7	-2.5
Moong	0.6	13.5	4.0	33.2	11.7	9.4	25.8	-0.9	5.1
Urad	1.5	4.9	-7.4	9.4	0.3	-8.9	7.0	-4.5	-1.2
Total Foodgrains	0.7	0.7	0.1	2.2	-0.7	2.1	1.4	-1.4	2.0
Total Oilseeds	0.8	-0.3	5.6	4.5	-6.1	6.0	3.3	-6.0	0.4
Kharif Oilseeds	0.5	1.2	6.5	4.6	-6.5	6.2	3.9	-7.7	-0.4
Groundnut	-2.1	-0.1	6.7	2.0	24.7	7.5	2.4	19.9	1.4
Soybean	2.7	2.5	8.0	6.2	-16.4	9.4	4.1	-17.9	1.5
Sesamum	5.1	4.7	1.4	9.4	7.6	3.4	3.7	3.1	2.8
Sunflower	-20.3	-16.3	-6.7	-23.6	-17.7	0.5	-1.6	-1.6	7.9
Nigerseed	-3.1	-5.9	-19.7	0.0	-9.2	-15.2	3.1	-3.0	4.9
Cotton	6.2	1.0	2.0	10.4	-4.0	5.1	3.4	-4.9	2.7

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare



Price Policy for Kharif Crops

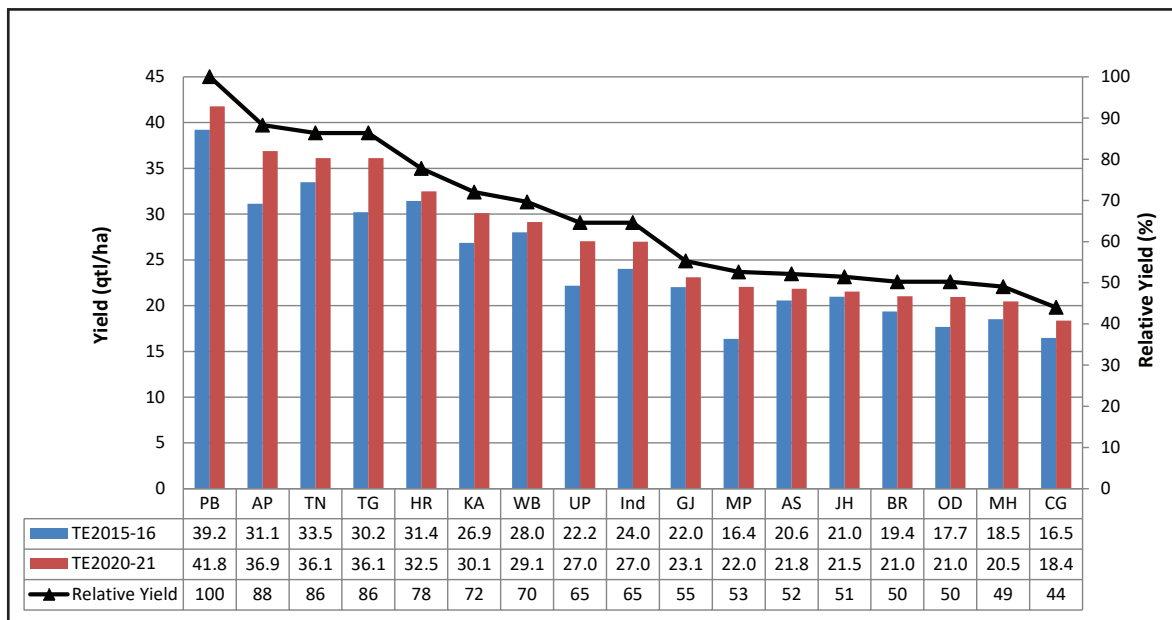
Yield Trends in Major Producing States

3.7 Trends in yield across major States vary due to differences in agro-climatic conditions, spatial diffusion of technology, quality and quantity of farm inputs and management practices. The yield of major kharif crops in major producing States for TE2015-16 and TE2020-21 have been analyzed to understand yield trends and compare inter-State variations in yield.

Rice

3.8 The yield trends of major rice producing States have been presented in chart 3.1. The yield at all-India level increased by 12.5 percent, from 24 quintal per hectare (qtl/ha) in TE2015-16 to 27 qtl/ha in TE2020-21. Among all the States, Punjab has achieved the highest yield during both the periods, while lowest yield was recorded in Chhattisgarh. Rice yield in Punjab, Andhra Pradesh, Tamil Nadu, Telangana, Haryana, Karnataka, West Bengal and Uttar Pradesh was above the national level in TE2020-21, while Gujarat, Madhya Pradesh, Assam, Jharkhand, Bihar, Odisha, Maharashtra and Chhattisgarh recorded lower yield than the all-India average. The yield of rice has improved in many States in TE2020-21 as compared to TE2015-16. Madhya Pradesh has registered the highest growth rate of 34.1 percent between two time periods, followed by Uttar Pradesh (21.6%), Telangana (19.5%), Andhra Pradesh (18.6%), Odisha (18.6%), Karnataka (11.9%), Chhattisgarh (11.5%) and Maharashtra (10.8%). Jharkhand (2.4%), Haryana (3.5%) and West Bengal (3.9%) have shown small improvement in rice yield during the same period. Given the stagnation in yields there is an urgent need to take appropriate steps to augment yield.

Chart 3.1: Average Yield of Rice in Major Producing States



Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

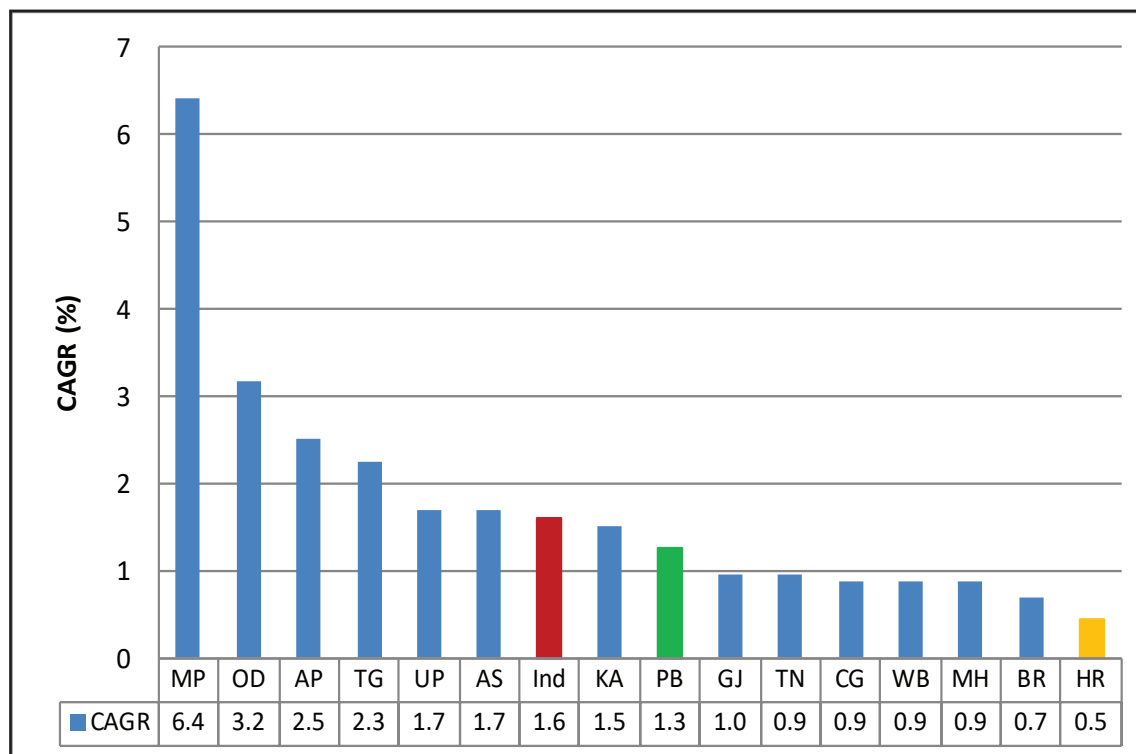
Price Policy for KHARIF CROPS



Box 3.1: Stagnation in Rice Yield Growth in Major Producing States

There is increasing evidence that average crop yields in some rice-producing States have plateaued with low growth and even some indications that potential yield has stagnated in some States. For example, rice yield increased at an annual compound growth rate of less than one percent in major producing States like West Bengal, Bihar, Haryana, Chhattisgarh and Tamil Nadu and 1.3 percent in Punjab during the last decade. The slow yield growth for some of the major rice-producing States coupled with lack of progress in yield potential in few States, is certainly cause for concern. This raises the critical issue of how much crop yields can continue to increase in the face of potentially stagnant yield potential in some States.

Chart 3.2: Compound Annual Growth Rate (CAGR) in Rice Yield, 2011-12 to 2020-21*



Note : * Second Advance estimates for 2020-21

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

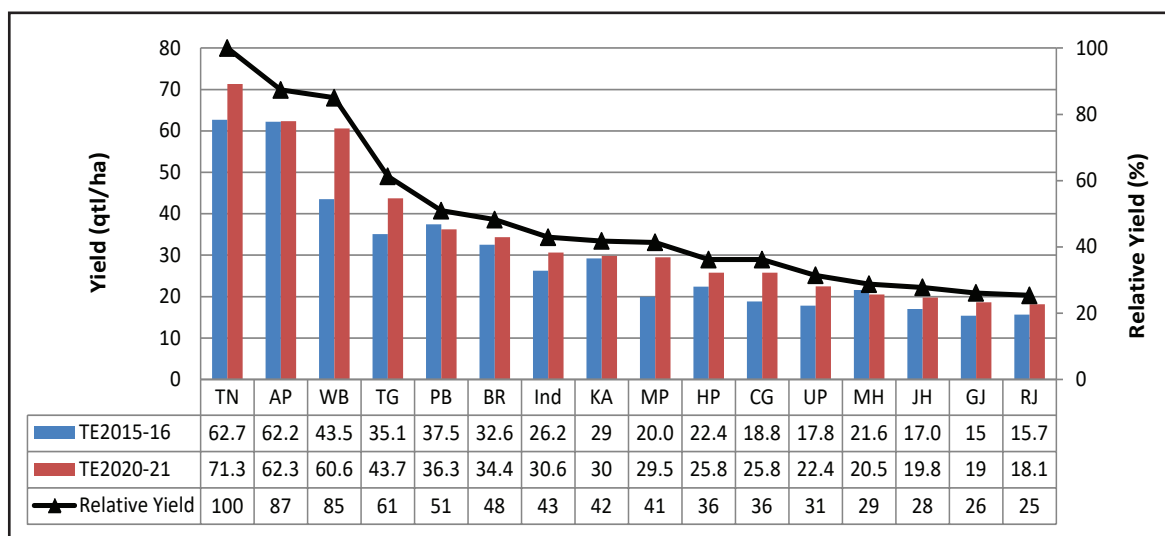


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Maize

3.9 Chart 3.3 presents the average yield of maize in major States. Maize yield at all-India level increased by 16.8 percent from 26.2 qtl/ha in TE2015-16 to 30.6 qtl/ha in TE2020-21. Madhya Pradesh (47.5%), West Bengal (39.3%), Chhattisgarh (37.2%), Uttar Pradesh (25.8%), and Gujarat (20.8%) have shown remarkable improvement in yield, higher than all-India level. However average yield has dropped in Punjab (-)3.2 percent and Maharashtra (-)5.1 percent resulting in lower maize production in these States. Hence, concerted efforts are required to improve yield levels in these states.

Chart 3.3: Average Yield of Maize in Major Producing States



Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

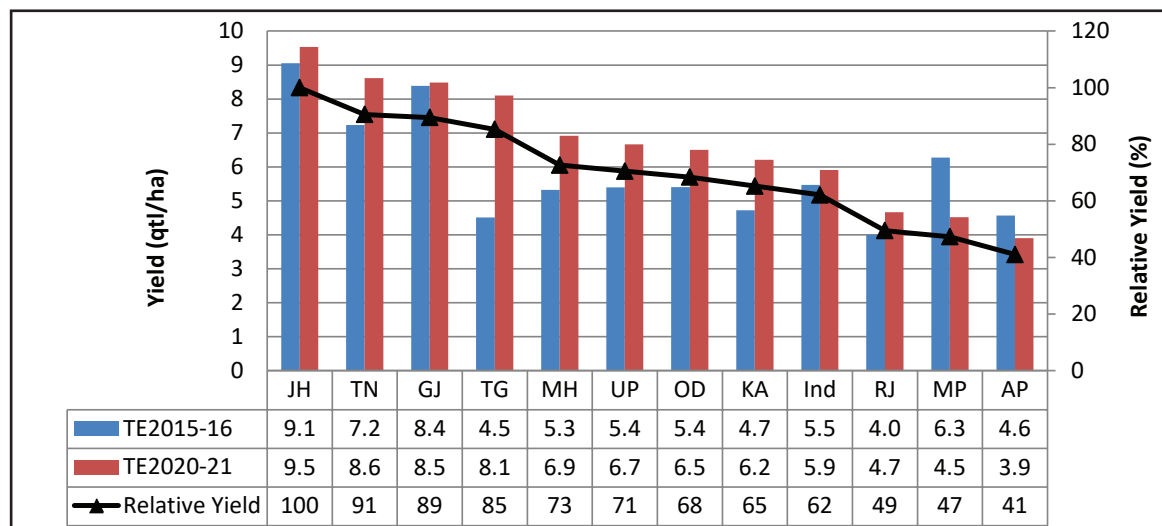
Pulses

3.10 State-wise yield of kharif pulses has been presented through Chart 3.4. Yield of kharif pulses at all-India level recorded an increase of 7.3 percent to reach a level of 5.9 qtl/ha in TE2020-21 from 5.5 qtl/ha in TE2015-16. At the State level, the largest increase in yield (80.0%) was seen in Telangana from 4.5 qtl/ha in TE2015-16 to 8.1 qtl/ha in TE2020-21. Rajasthan, Maharashtra and Karnataka, which constitute about 58 percent of total production of kharif pulses in the country, have shown impressive growth of 17.5 percent, 30.2 percent and 31.9 percent, respectively during the period under consideration. Yield of pulses in Jharkhand, Gujarat and Tamil Nadu remained much higher than national average in both the periods. It is pertinent to note that Telangana, Maharashtra, Odisha and Uttar Pradesh whose yield was lower than all-India average in TE2015-16, have made remarkable progress between two periods and achieved higher yield than all-India average in TE2020-21. In contrast, Madhya Pradesh having production share of around 10 percent, registered a dip of (-)28.6 percent in yield between TE2015-16 and TE2020-21.

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Chart 3.4: Average Yield of Kharif Pulses in Major Producing States

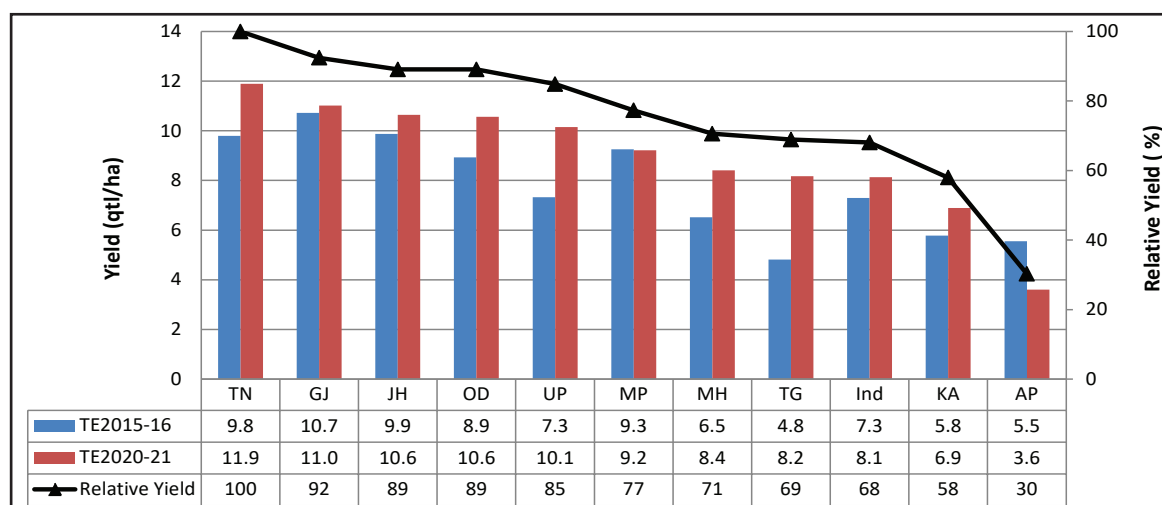


Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Tur

3.11 Data on average yield of tur in major States is presented in Chart 3.5. Yield of tur at all-India level recorded an increase of 11 percent, from 7.3 qtl/ha in TE2015-16 to 8.1 qtl/ha in TE2020-21. Yield increased in all major tur producing States during the reference periods. Tamil Nadu had the highest yield for tur in TE2020-21, an increase of 21.4 percent over TE2015-16. Telangana (70.8%) recorded the highest increase in yield, followed by Uttar Pradesh (38.4%), Maharashtra (29.2%), Odisha (19.1%) and Karnataka (19%) during the periods under study. All major tur producing States except Andhra Pradesh, where yield growth was (-)34.5 percent, have shown positive growth in yield.

Chart 3.5: Average Yield of Tur in Major Producing States



Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

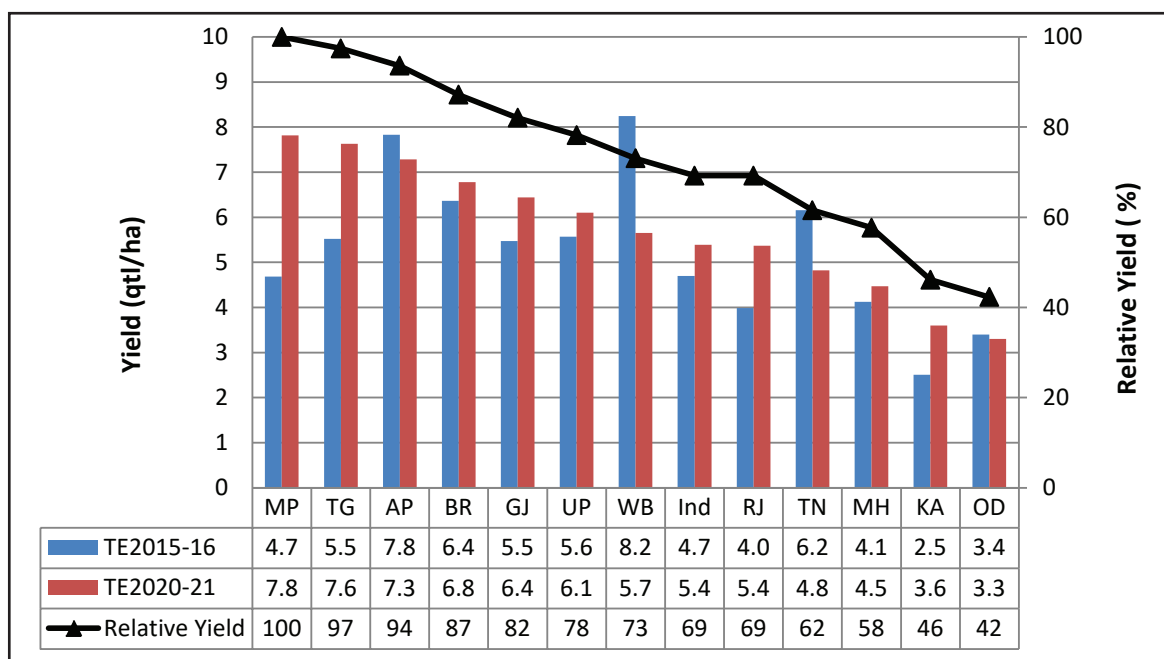


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Moong

3.12 Yield of moong at all India level recorded an increase of 14.9 percent from 4.7 qtl/ha in TE2015-16 to 5.4 qtl/ha in TE2020-21(Chart 3.6). Madhya Pradesh achieved the highest Increase of 66 percent in moong yield followed by Karnataka (44%), Telangana (38.2%) and Rajasthan (35%) between the reference periods. Yield in Rajasthan, Tamil Nadu, Maharashtra, Karnataka and Odisha was observed to be below the national average in TE2020-21. Yield of moong improved in most of major producing States during TE2020-21, while it declined in West Bengal (-)30.5 percent, Tamil Nadu (-)22.6 percent, Andhra Pradesh (-)6.4 percent and Odisha(-)2.9 percent in TE2020-21 as compared to TE2015-16.

Chart 3.6: Average Yield of Moong in Major Producing States



Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

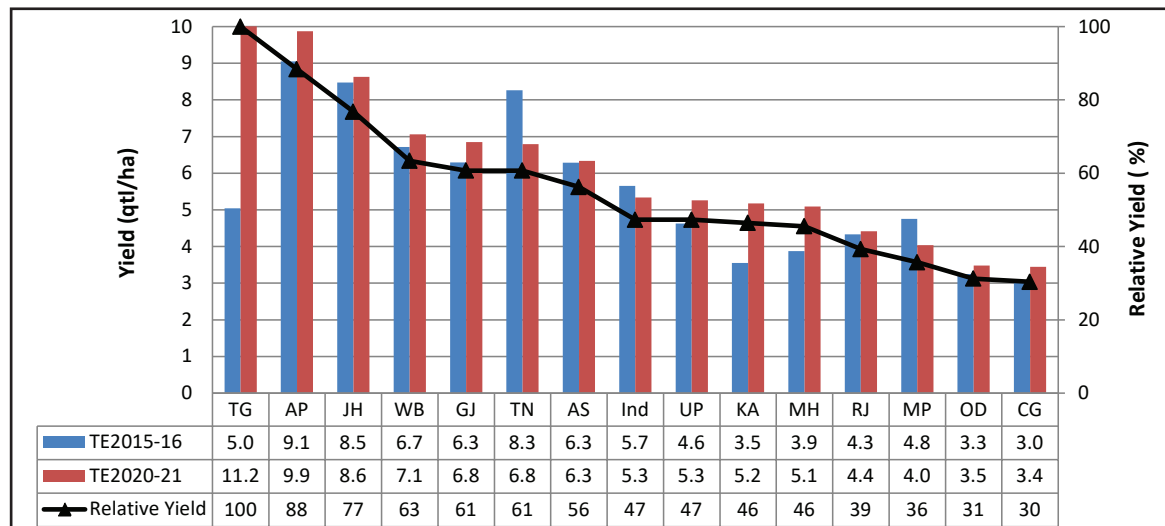
Urad

3.13 State-wise average yield of urad is presented in Chart 3.7. Telangana was the most productive State registering an impressive 124 percent increase in yield from 5.0 qtl/ha in TE2015-16 to 11.2 qtl/ha in TE2020-21. The other major increase in yield was also seen in Karnataka (48.6%), Maharashtra (30.8%), Uttar Pradesh (15.2%) and Chhattisgarh (13.3%). However, yield dropped in Tamil Nadu (-)18.1 percent and Madhya Pradesh (-)16.7 percent between two periods causing a decline of (-)7 percent in yield at all-India level, from 5.7 qtl/ha in TE2015-16 to 5.3 qtl/ha in TE2020-21. Largest decline in yield (-)18.1 percent was observed in Tamil Nadu (where yield declined from 8.3 qtl/ha in TE2015-16 to 6.8 qtl/ha in TE2020-21).

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Chart 3.7: Average Yield of Urad in Major Producing States

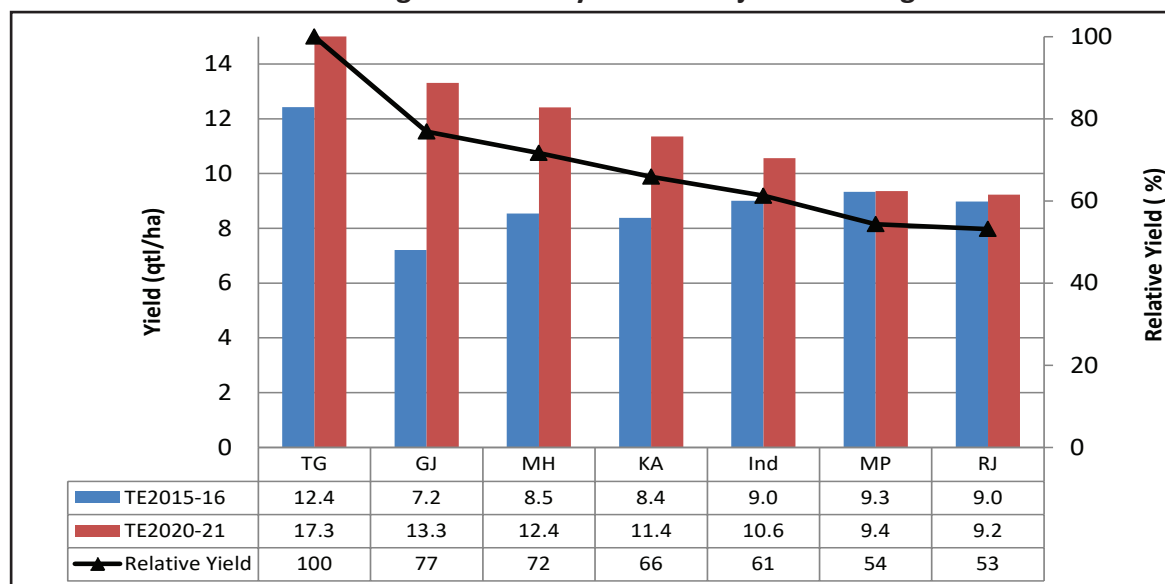


Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Oilseeds

3.14 Data on average yield of soybean, main kharif oilseed crop, in major producing States is presented in Chart 3.8. All-India yield for soybean increased from 9.0 qtl/ha in TE2015-16 to 10.6 qtl/ha in TE2020-21, an increase of 17.8 percent. Gujarat has shown the highest increase (84.7%) in yield, followed by Maharashtra (45.9%), Telangana (39.5%), Karnataka (35.7%) and Rajasthan (2.2%). Among major producers, yield in Madhya Pradesh recorded the lowest improvement, from 9.3 qtl/ha in TE2015-16 to 9.4 qtl/ha in TE2020-21.

Chart 3.8: Average Yield of Soybean in Major Producing States



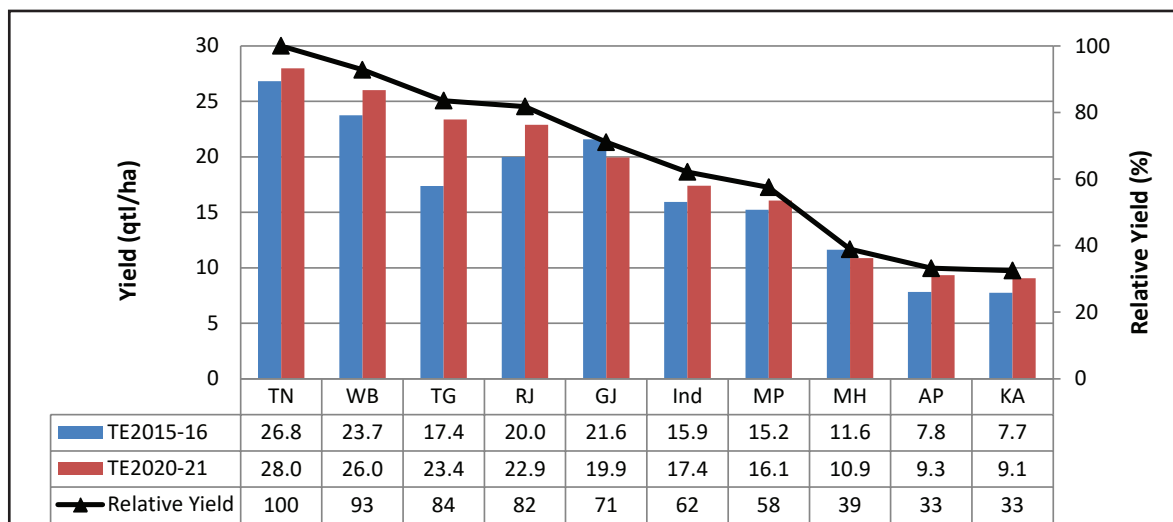
Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare



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3.15 Data on groundnut yield in major producing States is presented in Chart 3.9. Groundnut yield increased by 9.4 percent between TE2015-16 and TE2020-21 at all-India level. Tamil Nadu recorded the highest yield for groundnut in both the periods, while Karnataka had the lowest yield in the corresponding periods. Yield has increased in Tamil Nadu (4.5%), while Karnataka (18.2%) has shown impressive growth between two periods. The highest increase in yield was seen in Telangana (34.5%), where yield increased from 17.4 qtl/ha in TE2015-16 to 23.4 qtl/ha in TE2020-21. While Gujarat with largest production share, registered a decline of 7.9 percent in yield, from 21.6 qtl/ha in TE2015-16 to 19.9 qtl/ha in TE2020-21. Rajasthan, the second largest groundnut producing State, recorded a 14.5 percent increase in yield between TE2015-16 and TE2020-21.

Chart 3.9: Average Yield of Groundnut in Major Producing States



Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

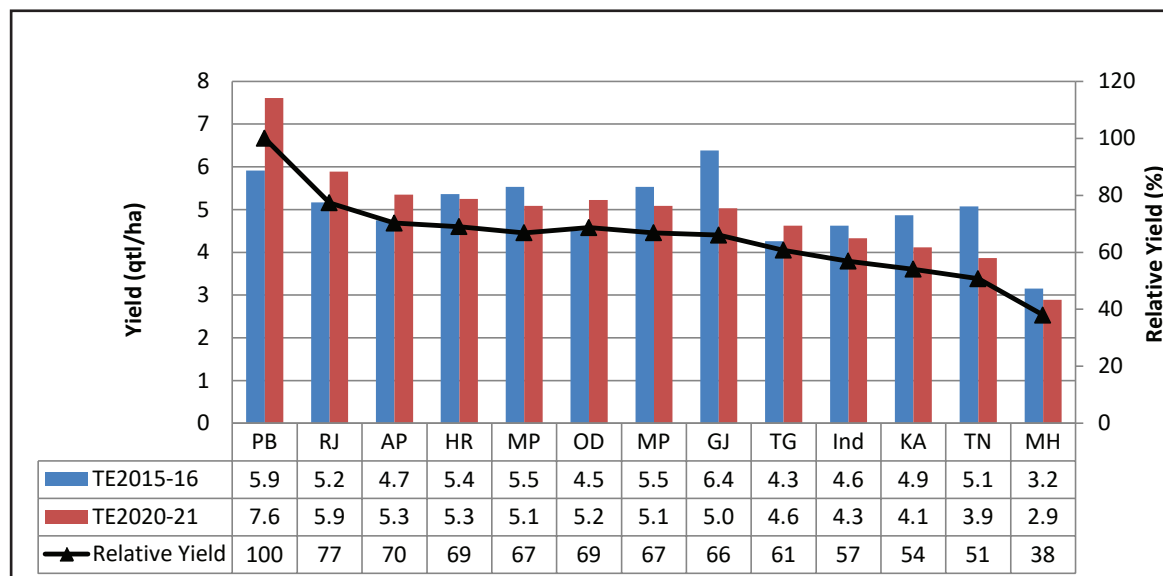
Cotton

3.16 Data on average yield of cotton in major States is presented in Chart 3.10. Cotton yield witnessed a decline at the all-India level, from 4.6 qtl/ha in TE2015-16 to 4.3 qtl/ha in TE2020-21 owing to a large decline in yield in the three major cotton producing States, viz. Tamil Nadu (-)23.5 percent, Gujarat (-)21.9 percent and Karnataka (-)16.3 percent. Marginal decline in yield was also observed in Madhya Pradesh and Haryana. Though, Punjab (28.8%), Odisha (15.6%), Rajasthan (13.5%), Andhra Pradesh (12.8%) and Telangana (7%) showed improvement in yield in TE2020-21 as compared to TE2015-16. With 19 percent production share, yield in Maharashtra is the lowest among major producers and has shown a reduction from 3.2 qtl/ha in TE2015-16 to 2.9 qtl/ha in TE2020-21.

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Chart 3.10: Average Yield of Cotton in Major Producing States



Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Yield Gap Analysis

3.17 Yield gaps are estimated by the difference between potential yield, realised yield and average farmers' yields and helps in identifying the constraints and management options to reduce yield gaps. Three types of yield levels have been considered; (i) yield achieved under Front Line Demonstration (FLD), where best scientific and management practices are followed, (ii) realized farm yield, yield attained under improved technology under farmers' practices, and (iii) State average yield. These three yield levels have been compared in the charts 3.11 to 3.20. Two types of yield gaps have been estimated, viz. (i) Yield Gap (A): defined as the difference between realized yield and State average yield (ii) Yield Gap (B): defined as the difference between FLD yield, i.e., potential yield and State average yield. Yield gap (A) may be due to non-availability of technology, inputs and management practices, while yield gap (B) is possibly due to combination of both biological and socio-economic constraints. Based on the above, an estimated increase in production by bridging yield gaps by 25 percent, 50 percent, 75 percent and 100 percent has been calculated and presented in Table 3.2 and Table 3.3.

Rice

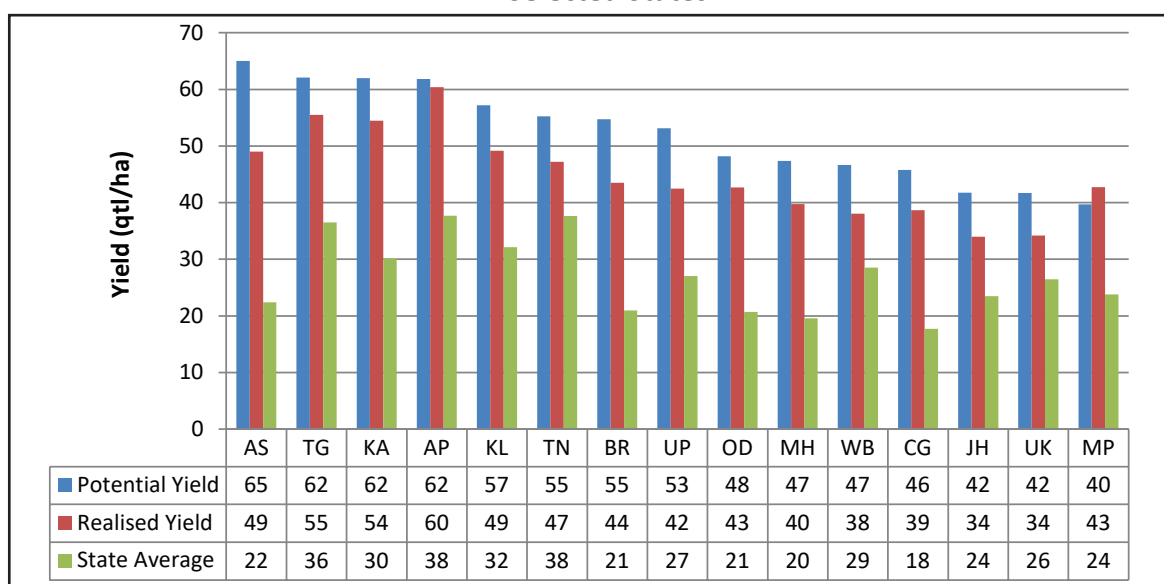
3.18 It is evident from the chart 3.11 that State average yield levels were significantly lower than potential and realized yield in all States. Assam had the highest yield gap (A) and (B) at 54.2 percent and 65.5 percent, respectively, while Tamil Nadu had the lowest yield gap (A) and yield gap (B) at 20.2 percent and 31.9 percent among all the States. For Uttar Pradesh and West Bengal, which are the two largest rice producers, yield gap (A) was 36.3 percent and 25.1 percent, respectively and yield



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gap (B) for these States was 49.1 percent and 38.9 percent, respectively. There are considerably large yield gaps in all major States that must be addressed on priority basis. With the sizable production and consumption of rice besides assuring food security, concrete efforts and dedicated roadmap are pre-requisite to fill this gap. In addition, farmers should be motivated and incentivized to adopt new technologies, farm mechanization, integrated nutrient and pest management to enhance the rice yield, thereby reducing unit cost of production.

Chart 3.11: Comparison of Potential, Realized and State Average Yields of Rice in Selected States



Source: ICAR-Indian Institute of Rice Research, Hyderabad

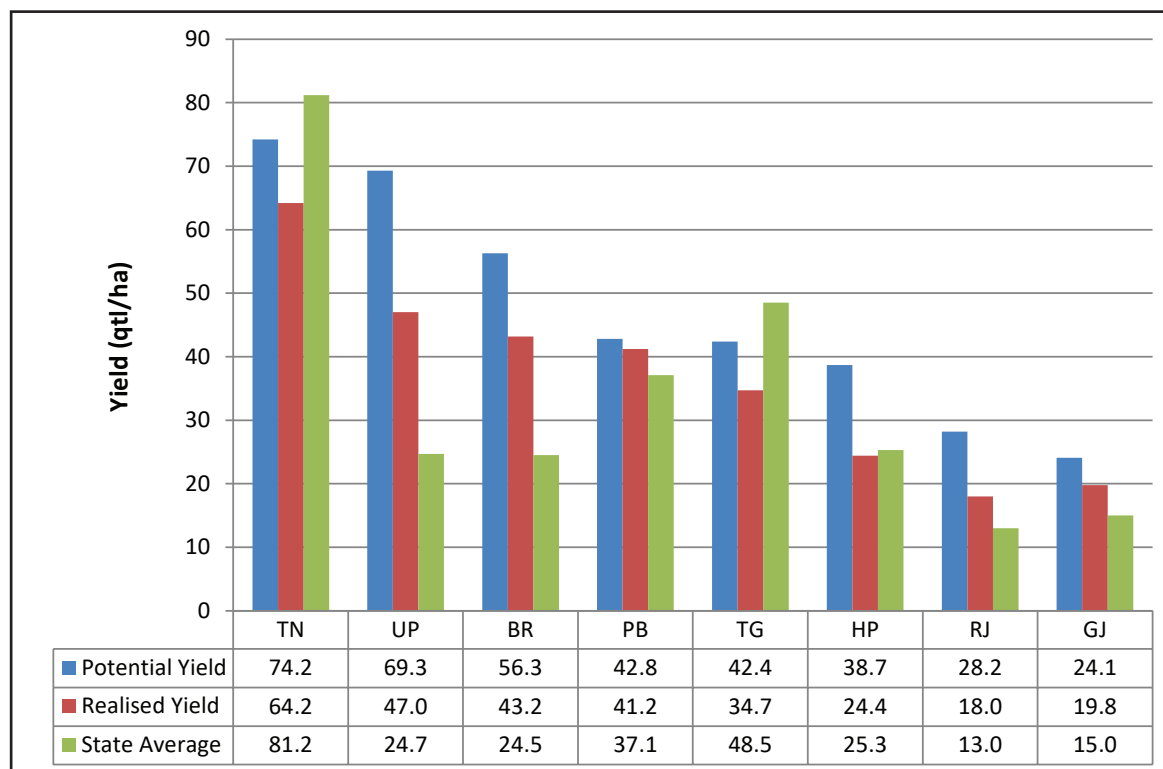
Maize

3.19 Though maize yield has improved during the last two decades, large yield gaps still exist in many States. Yield gap (A) was highest in Uttar Pradesh (47.4%), followed by Bihar (43.3%), Rajasthan (27.8%) and Gujarat (24.2%). Yield gap (B) was also highest in Uttar Pradesh (64.4%), followed by Bihar (56.5%), Rajasthan (53.9%) and Gujarat (37.8%) (Chart 3.12). Yield Gap (A) in Himachal Pradesh was negative as realized yield in the State was slightly lower than State average yield but Yield Gap (B) was 34.6 percent. Except Tamil Nadu, Telangana and Punjab, potential yields were much higher than realized and State average yield. The deployment of the best bet technology like single cross hybrids, zero tillage/raised bed planting of maize, post emergence herbicides based timely weed management, integrated management of fall army worm and balanced fertilization are the suggested strategies to bridge the yield gaps in maize crop.

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Chart 3.12: Comparison of Potential, Realized and State Average Yields of Maize in Selected States



Source: ICAR- Indian Institute of Maize Research, Ludhiana

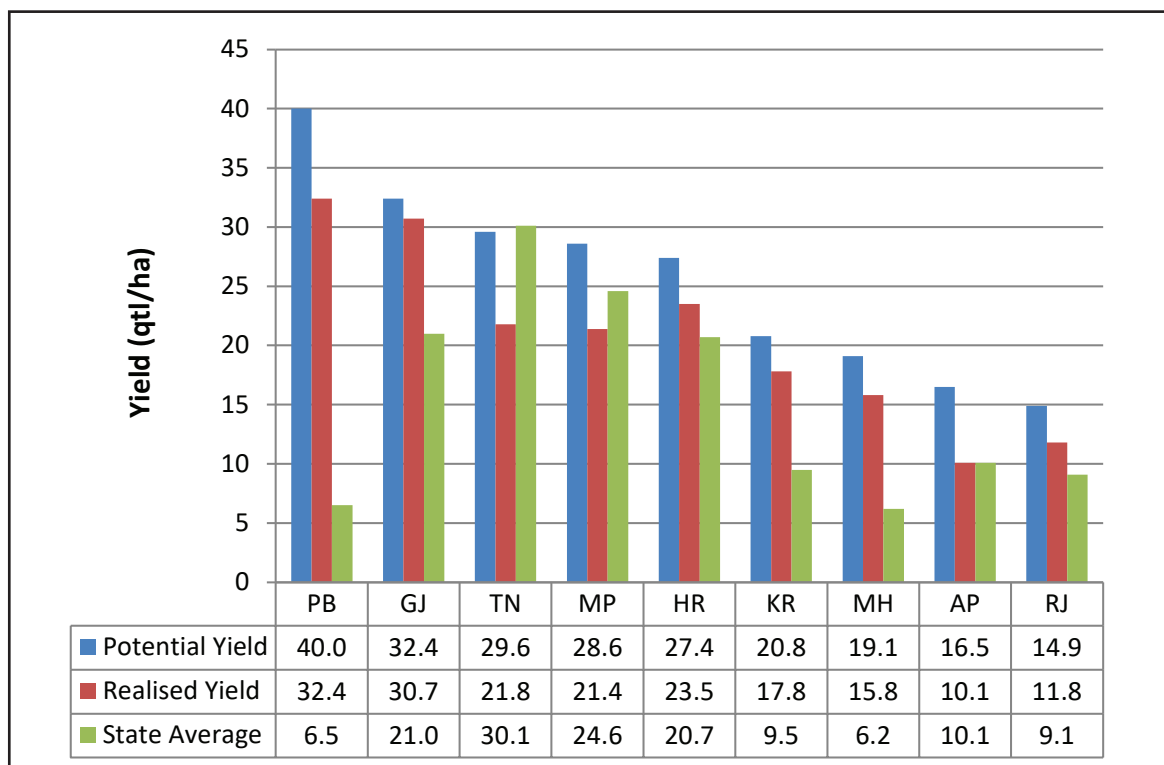
Bajra

3.20 Punjab had the highest yield gap (A) and (B) at 79.9 percent and 83.8 percent respectively. Maharashtra also had high yield gap (A) of 60.8 percent and yield gap (B) of 67.5 percent respectively. Rajasthan, which is the largest bajra producing State, had yield gap (A) at 22.9 percent and yield gap (B) at 38.9 percent, showing sufficient scope to further increase bajra production in the State with appropriate measures to narrow the yield gaps.



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Chart 3.13: Comparison of Potential, Realized and State Average Yields of Bajra in Selected States



Source : ICAR - All India Coordinated Research Projects on Pearl Millet, Jodhpur

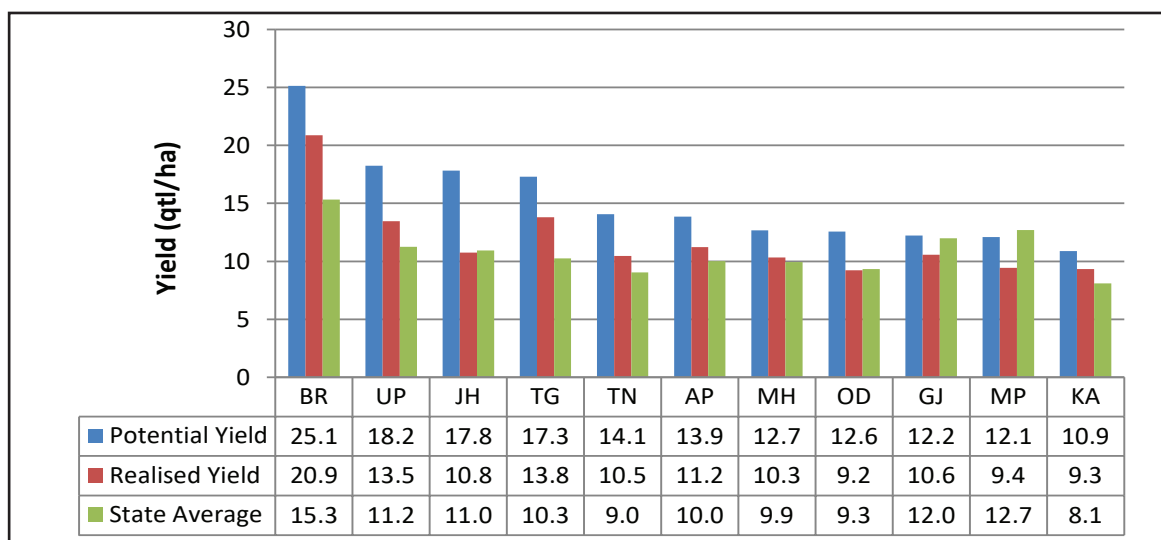
Pulses

3.21 In case of tur, realized yield varied from 9.2 qtl/ha in Odisha to 20.9 qtl/ha in Bihar as per data presented in Chart 3.14, while State average yield varied from 8.1 qtl/ha in Karnataka to 15.3 qtl/ha in Bihar. Bihar ranked the first having the highest potential yield of 25.1 qtl/ha, the highest realized yield of 20.9 qtl/ha and highest State average of 15.3 qtl/ha, that indicates good future prospects for improving tur production in Bihar. As far as yield gap is concerned, Karnataka, the largest producer of tur, had a yield gap (A) of 12.9 percent and yield gap (B) of 25.7 percent. Maharashtra, which is the second largest producer of tur, had comparatively low yield gap (A) of 3.9 percent and yield gap (B) of 22 percent. Among the major States, yield gap (A) was the highest in Bihar (26.8%) and yield gap (B) was the highest in Telangana (40.5%).

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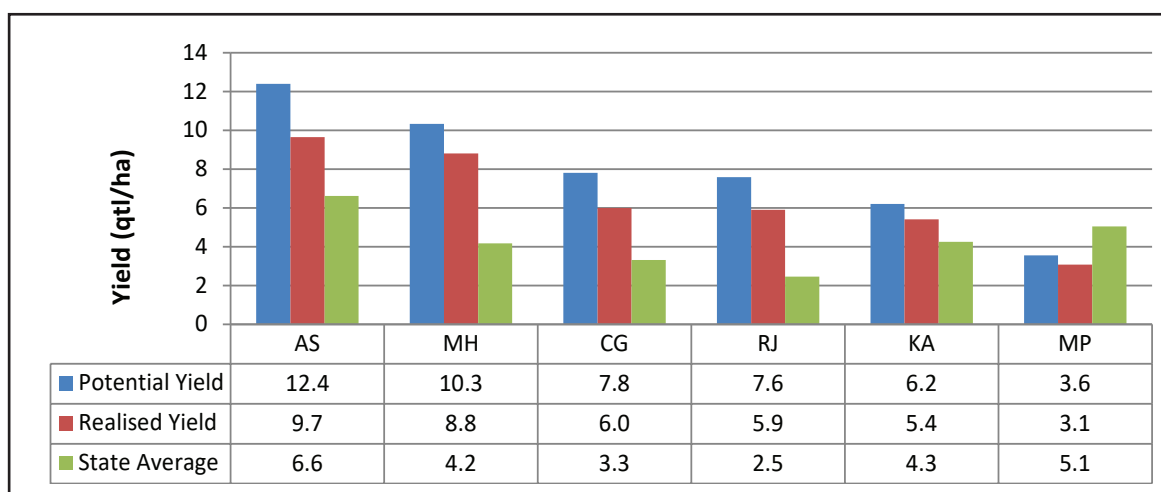
Chart 3.14: Comparison of Potential, Realized and State Average Yields of Tur in Selected States



Source: ICAR- Indian Institute of Pulses Research, Kanpur

3.22 In case of urad, State average yield was higher than realized and potential yield in Madhya Pradesh, the largest producer of urad in the country. The lower potential and realized yield was due to adverse weather conditions during harvesting time in the areas of front line demonstration for urad. For other States, yield gap (A) remained high and ranged from 21.4 percent in Karnataka to 58.3 percent in Rajasthan. Yield gap (B) varied from 31.5 percent in Karnataka to 67.5 percent in Rajasthan. Potential yield ranged between 12.4 qtl/ha in Assam to 3.6 qtl/ha in Madhya Pradesh among all major producing States, while State average yields ranged between 6.6 qtl/ha in Assam to 2.5 qtl/ha in Rajasthan.

Chart 3.15: Comparison of Potential, Realized and State Average Yields of Urad in Selected States



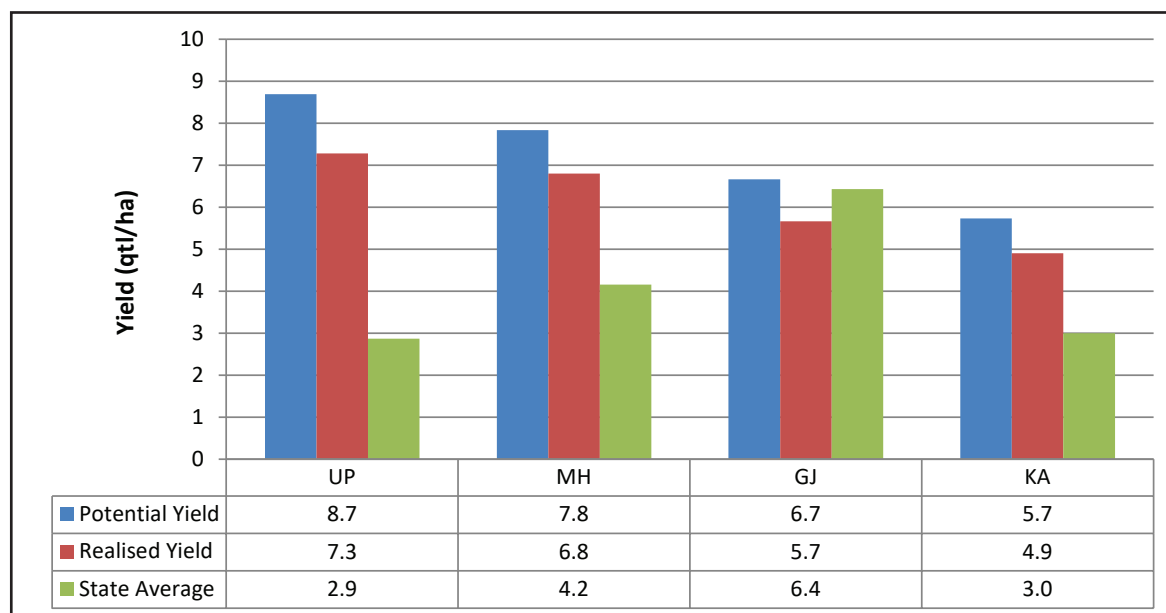
Source: ICAR-Indian Institute of Pulses Research, Kanpur



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3.23 For moong, State average yield levels were significantly lower than potential and realized yields in all the States except Gujarat. Potential yield and realized yield were highest in Uttar Pradesh at 8.7 quintal per hectare and 7.3 quintal per hectare, respectively while State average yield was highest in Gujarat at 6.4 quintal per hectare. Uttar Pradesh had the highest yield gap (A) of 60.6 percent and Yield gap (B) at 67.0 percent, while Maharashtra and Karnataka having more than 50 percent production share, also have significant yield gaps, while the yield gap (A) for the Gujarat was negative (-)13.6 percent.

Chart 3.16: Comparison of Potential, Realized and State Average Yields of Moong in Selected States



Source: ICAR-Indian Institute of Pulses Research, Kanpur

3.24 The yield gap analysis clearly shows that there is sufficient scope to improve yield of pulses in the country. It is evident from Table 3.2 that kharif pulses production can be increased by about 1.4 million tonnes to 3.6 million tonnes by adopting various modern crop production methods and use of modern implements. The yield gap can be closed/ reduced/ narrowed by increase in area under high-yielding varieties, efficient use of inputs, application of improved farm practices, sufficient credit flow, improved extension services and post-harvest management, among others.

Table 3.2: Estimated Additional Production of Kharif Pulses by Bridging Yield Gap

Crop	Likely Impact of Reduction in Crop Yield Gaps on Total Production ('000 tonnes)							
	Yield Gap (A)				Yield Gap (B)			
	25%	50%	75%	100%	25%	50%	75%	100%
Tur	245	489	734	978	557	1114	1670	2227
Urad	36	71	107	143	146	291	437	583
Moong	74	149	223	298	192	385	577	769
Total	355	710	1065	1419	895	1790	2685	3580

Source: Computed by CACP

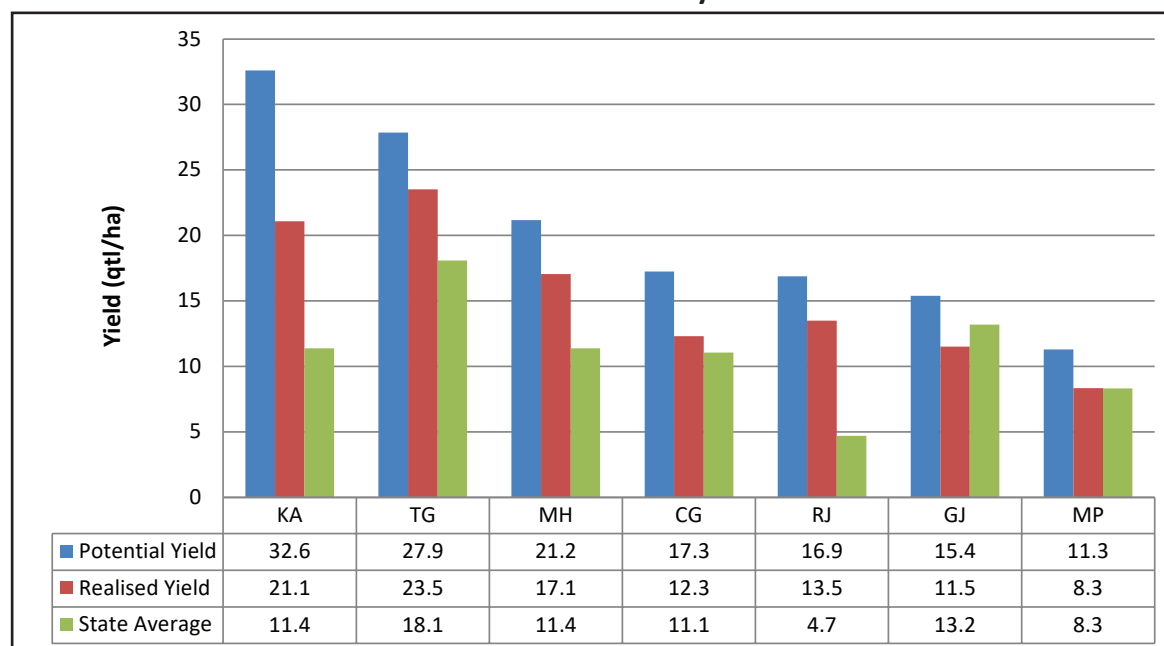
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Oilseeds

3.25 Average soybean yield at State level ranged from 4.7 qtl/ha in Rajasthan to 18.1 qtl/ha in Telangana, while potential yield varied between 11.3 qtl/ha in Madhya Pradesh and 32.6 qtl/ha in Karnataka and realized yield from 8.3 qtl/ha in Madhya Pradesh to 23.5 qtl/ha in Telangana. Highest yield gap (A) and (B) at 65.2 percent and 72.2 percent, respectively were observed in Rajasthan. Yield gaps were also quite high in Maharashtra, Telangana and Karnataka.

Chart 3.17: Comparison of Potential, Realized and State Average Yields of Oilseeds in Selected States- Soybean



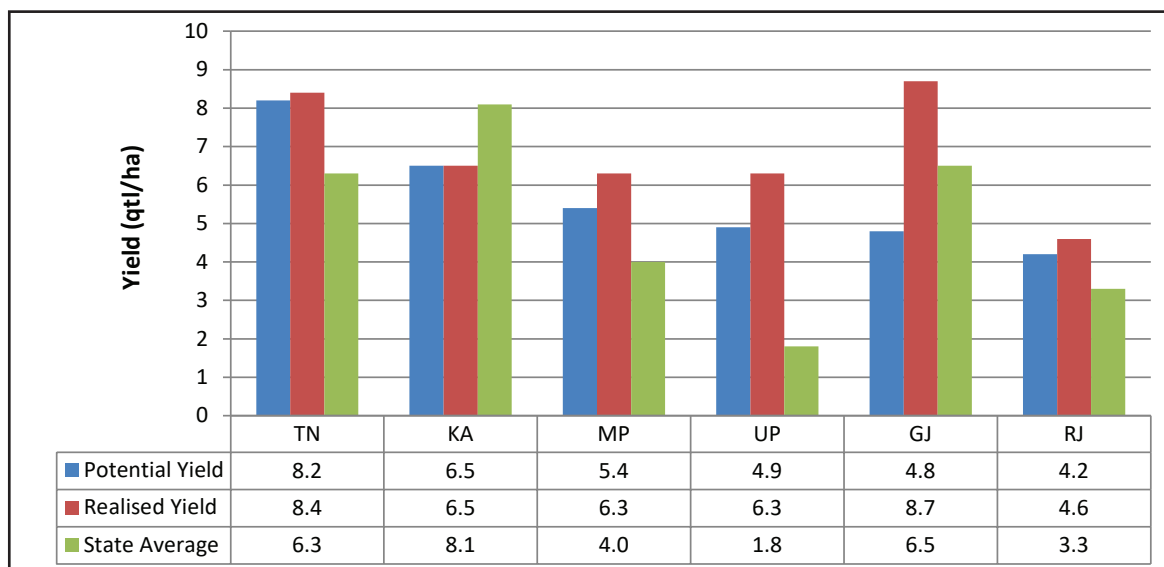
Source: ICAR-Indian Institute of Soybean Research-Indore

3.26 For sesamum, potential yield varied from 8.2 qtl/ha in Tamil Nadu to 4.2 qtl/ha in Rajasthan, while realized yield varied from 8.7 qtl/ha in Gujarat to 4.6 qtl/ha in Rajasthan. Realized yield was higher than potential yield in most of the States due to heavy rainfall and unfavourable weather conditions in the States. Further, sudden decline in area in some States also caused variations between potential yield and realized yield. The highest yield gap (A) and (B) were observed in Uttar Pradesh at 71.4 percent and 63.3 percent, respectively. Yield gaps were also quite high in Madhya Pradesh, Tamil Nadu and Rajasthan. State average yield of Karnataka was 8.1 qtl/ha, which was higher than potential yield (6.5 qtl/ha) and realized yield (6.5 qtl/ha).



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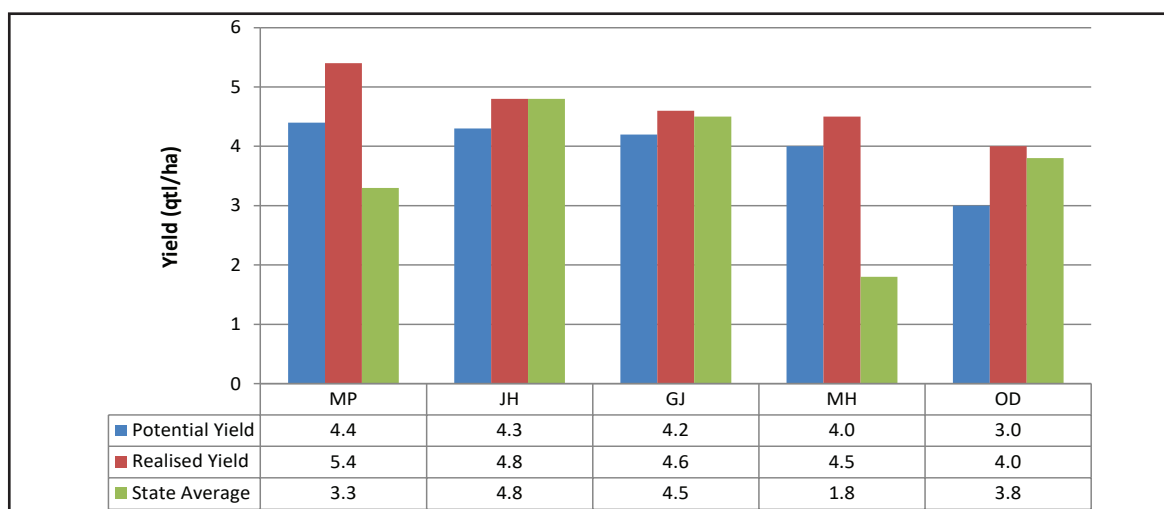
Chart 3.18 : Comparison of Potential, Realized and State Average Yields of Oilseeds in Selected States- Sesamum



Source: ICAR-All India Coordinated Research Projects on Sesame and Niger, Jabalpur

3.27 For nigerseed, State average yield was the highest in Jharkhand (4.8 qtl/ha), higher than potential yield of 4.3 qtl/ha in the State. Similarly, potential yield (4.2 qtl/ha) was lower than State average yield (4.5 qtl/ha) in Gujarat. Realized yield was higher than potential yield in almost all major nigerseed growing States due to favourable weather conditions and rainfall in these States. State average yield was lower than potential yield and realized yield in Madhya Pradesh and Maharashtra, which indicates that there is enough scope to increase the production of nigerseed by improving crop yield in these States.

Chart 3.19: Comparison of Potential, Realized and State Average Yields of Oilseeds in Selected States- Nigerseed



Source: ICAR-All India Coordinated Research Projects on Sesame and Niger, Jabalpur

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3.28 It is obvious from the above analysis that potential yields of oilseeds are much higher than the actual yields, so there is huge potential for further improvement in oilseeds yield and production in the country. By bridging just 50 percent of the yield gap, the average actual production of oilseeds in the country can be increased significantly by 4.8 million tonnes, while by bridging 75 percent of the potential yield gap, production can be increased by 7.2 million tonnes (Table 3.3). In order to reduce import dependence on edible oils, intensive efforts are required to bridge yield gap.

Table 3.3: Estimated Additional Production of Kharif Oilseeds by Bridging Yield Gaps

Crop	Likely Impact of Reduction in Yield Gaps on Total Production ('000 tonnes)							
	Yield Gap (A)				Yield Gap (B)			
	25%	50%	75%	100%	25%	50%	75%	100%
Soybean	1148	2297	3445	4594	2297	4595	6892	9190
Sesamum	83	167	250	334	23	46	69	92
Nigerseed	40	80	119	159	9	17	26	35
Sunflower	64	128	192	256	65	130	196	261
Total	1336	2671	4007	5343	2394	4789	7183	9577

Source: Computed by CACP

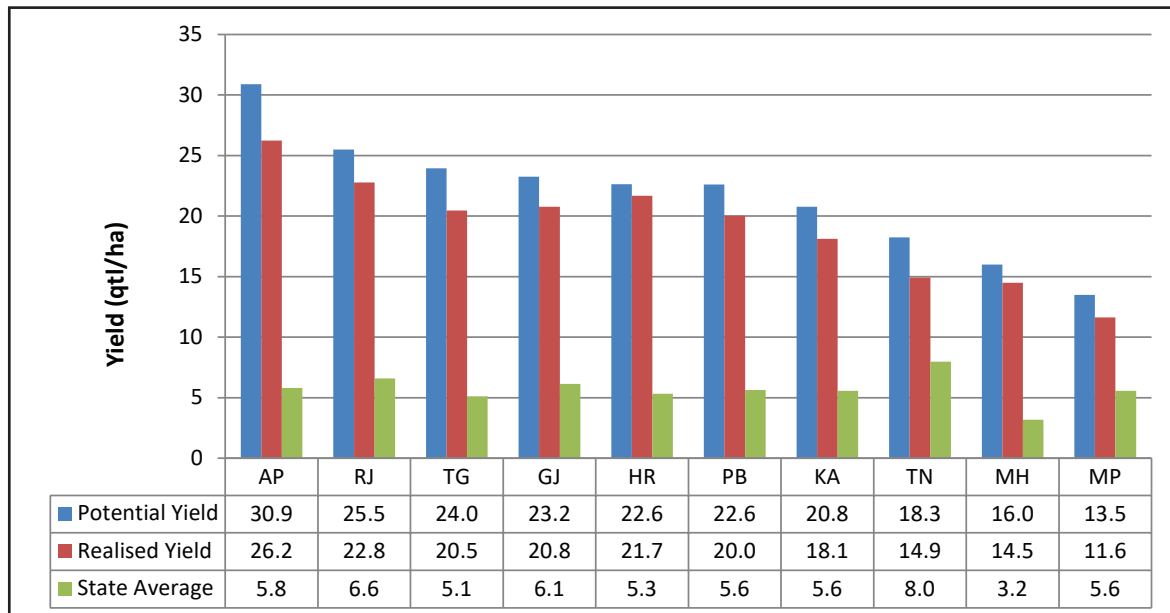
Cotton

3.29 Potential yield of cotton among the main producing States varied from 13.5 qtl/ha in Madhya Pradesh to 30.9 qtl/ha in Andhra Pradesh, while realized yield ranged from 11.6 qtl/ha in Madhya Pradesh to 26.2 qtl/ha in Andhra Pradesh. While realized yield was little lower than potential yield in all major cotton producing States, State average yield was much lower than potential yield and realized yield in all major cotton producing States, resulting in large yield gaps. State average yield ranged between 3.2 qtl/ha in Maharashtra to 8 qtl/ha in Tamil Nadu. Yield gap (A) was the highest in Maharashtra (78%), second largest producer of cotton, while it was the lowest in Tamil Nadu (46.6%). Yield gap (B) was the highest (81.2%) in Andhra Pradesh and the lowest (56.3%) in Tamil Nadu. Gujarat, the largest cotton producing State, also had significant yield gap.



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Chart 3.20: Comparison of Potential, Realized and State Average Yields of Cotton in Selected States



Source: ICAR-Central Institute for Cotton Research, Coimbatore

3.30 The yield gaps in cotton may be bridged by encouraging farmers to adopt of improved varieties/hybrids, use high density planting systems, improved farm practices, etc. Pest and disease management is equally important to bridge wide yield gaps in the cotton, as cotton yield is affected by infestation of pink boll worm, whitefly, cotton leaf curl virus, etc.

Drivers of Yield Growth

3.31 High yielding varieties of seeds, improved irrigation facilities with efficient use of water resources, optimum use of fertilizers and pesticides, farm mechanization, adoption of modern techniques, management practices, and extension services are important factors for continuous increase in yield level. These factors have been crucial during the Green Revolution in the 1960s, helping India achieve self-sufficiency in foodgrains production. It is imperative to ensure timely and proper availability of these inputs and services to enhance crop yield. Government of India and State Governments have taken various initiatives in this regard. Various research institutions and scientists are making continuous efforts for technological upgradation and modernization of agriculture to improve yield level.

Quality Seeds

3.32 The use of better quality seeds is one of the most important factors for enhancing crop yield. Adoption of high yielding varieties with disease, insect, lodging, and shattering resistance, along with other desirable characteristics are basic strategies for satisfactory crop performance and yield. Agricultural research Institutions are

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making concerted efforts to develop high yielding varieties as per requirement of varied agro-climatic conditions and large number varieties have been developed so far. It is equally important to sensitize farmers about the importance of quality seed and make improved varieties available to improve Seed Replacement Rate (SRR) and Varietal Replacement rate (VRR).

- 3.33 The requirement of certified/quality seeds is assessed by State Governments on the basis of the area sown under different crop varieties, area covered by hybrids and self-pollinated varieties as well as the seed replacement rate achieved whereas the availability of seed is ascertained on the basis of the production of seed in Government farms and production of seed by State Seeds Corporations and other agencies. It is evident from Table 3.4 that SRR was lower than the target in jowar, bajra, groundnut and sunflower.

Table 3.4: Seed Replacement Rate Target and Achievement in Major Kharif Crops, 2019-20

Crop	Target (%)	Achievement (%)
Rice	33	37.89
Maize	50	67.64
Jowar	50	34.31
Bajra	50	36.01
Ragi	33	52.24
Tur(Arhar)	50	61.05
Groundnut	33	26.71
Sesamum	33	43.64
Sunflower	50	43.07
Soybean	33	41.04

Source: Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

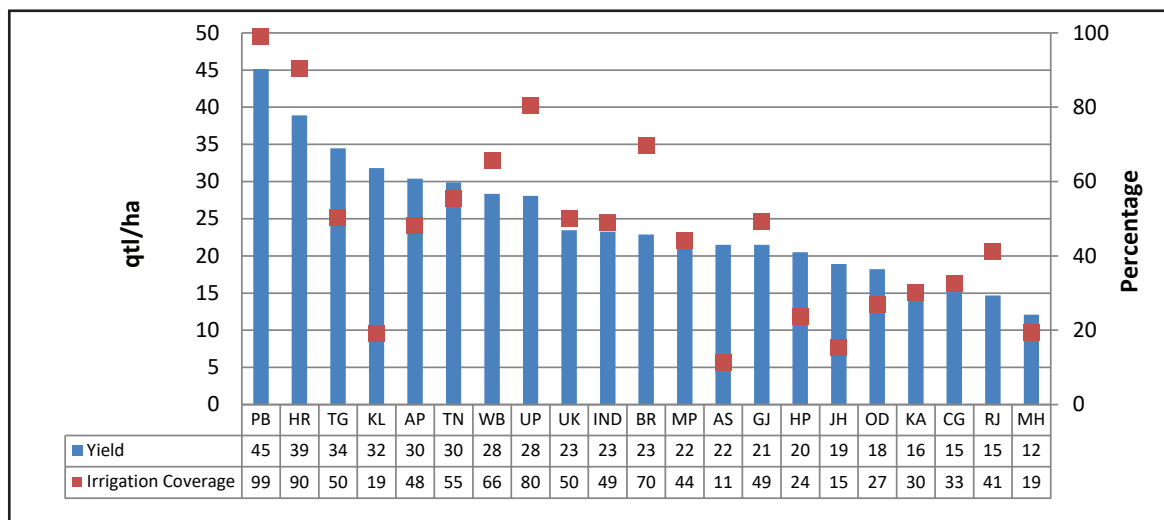
Irrigation

- 3.34 It is observed that both levels and growth in yield in rainfed areas are much lower and variable compared to those in irrigated regions. Lack of irrigation makes agricultural operations more risky as it is subjected to the uncertainties of monsoon and discourages investment by farmers. Thus, low crop yield in rainfed regions highlights the importance of irrigation. Chart 3.21 shows the foodgrains yield along with percentage of irrigation coverage for major States. There is direct correlation between foodgrains yield and irrigation coverage. For example, Punjab, which has the highest irrigation coverage (99%), also had the highest yield (45qtl/ha), while both irrigation coverage (19%) and foodgrains yield (12 qtl/ha) were the lowest in Maharashtra. Thus expansion in irrigation coverage and improvement in water use efficiency, have immense potential to improve yield in Indian agriculture.



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Chart 3.21: Foodgrains Yield and Irrigation Coverage in Major States



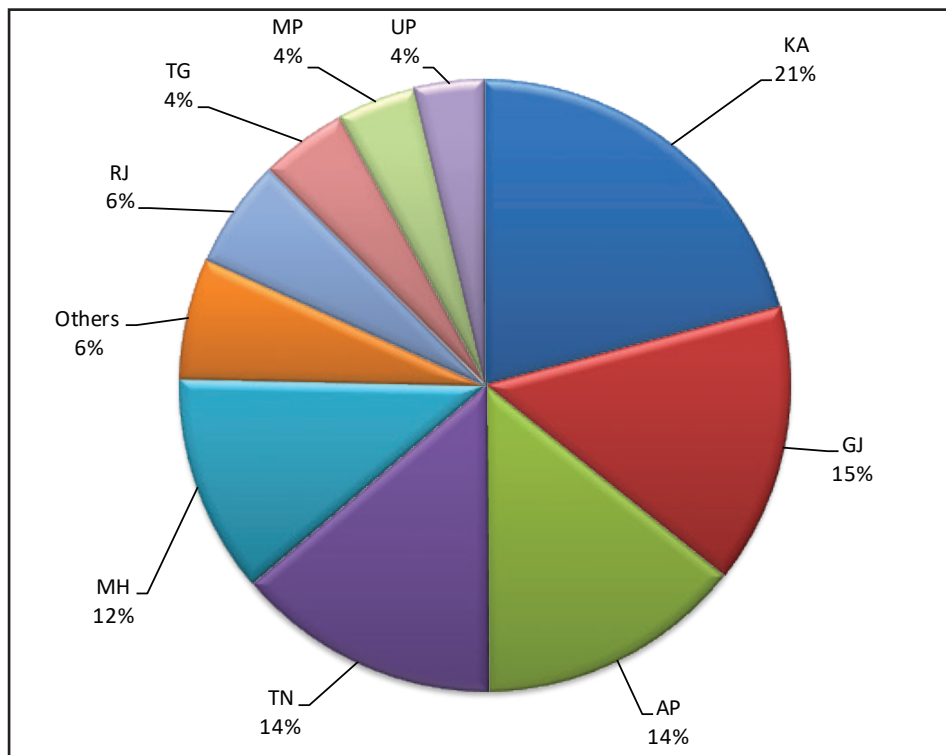
Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

- 3.35 Although, there is a positive correlation between irrigation and crop yield, inefficient methods of irrigation such as flood irrigation may be harmful for agriculture production and accelerate groundwater depletion. So farmers should be incentivized to adopt water-efficient practices in order to avert a looming water crisis. Micro irrigation is a better option for conserving water without depleting scarce groundwater resources and improving water use efficiency. “Pradhan Mantri Krishi Sinchayee Yojana (PMKSY)” was launched in 2015-16 with the objectives of extending the coverage of irrigation “Har Khet Ko Pani” and improving water use efficiency “More Crop Per Drop” in a focused manner with end to end solution on source creation, distribution, management, field application and extension activities.
- 3.36 PMKSY lays special emphasis on micro-irrigation to maximize water use efficiency at field level. Since the inception of the Scheme till 2020, 52.34 lakh hectares area has been covered under the micro-irrigation at all-India level. Share of major States in area covered under micro-Irrigation under PMKSY has been presented in chart 3.22. As seen from the Chart, Karnataka accounted for 21 percent of the total area covered under micro-irrigation, followed by Gujarat (15%), Andhra Pradesh (14%) and Tamil Nadu (14%). Maharashtra has also significant share of 12 percent under micro-irrigation. It is observed that progress of micro irrigation is comparatively better in water scarce States while Uttar Pradesh and Madhya Pradesh have very low share of 4 percent each. As water crisis is looming large, it is imperative to expand area under micro-irrigation in all States.

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Chart 3.22: Share of Major States in Area Covered under Micro-Irrigation under PMKSY- More Crop Per Drop (2019-20)



Source: Department of Agriculture, Cooperation and Farmers Welfare, Ministry of Agriculture and Farmers Welfare

Fertilizers

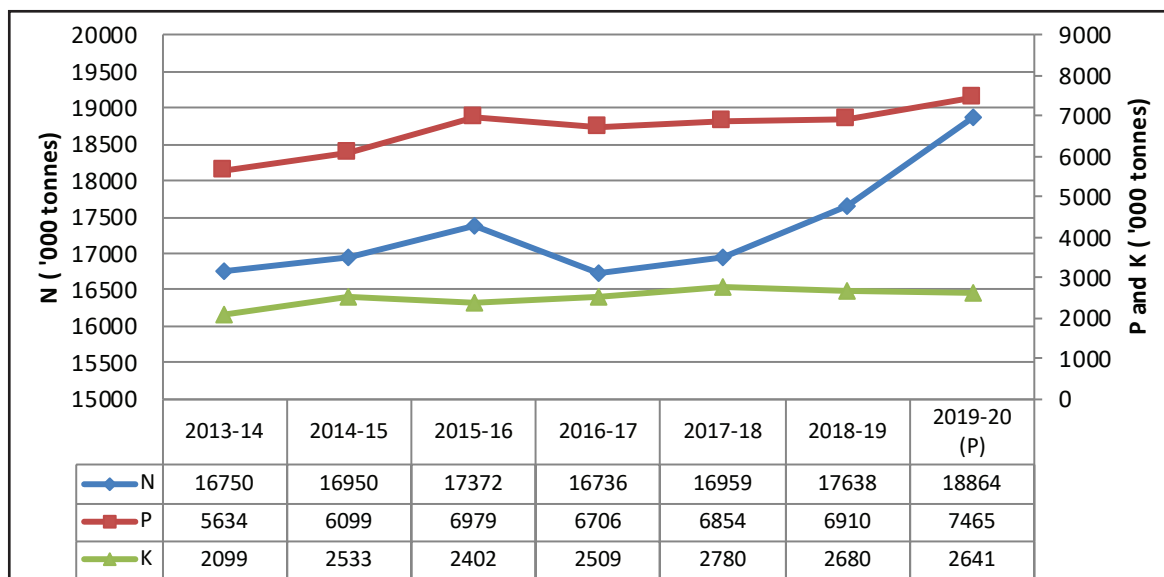
- 3.37 Fertilizer is one of the key inputs in crop production that has played a major role in ensuring food security in India. Indian fertilizer industry has been reportedly facing the problem of raw material availability for production of fertilizers causing the import of both raw materials and finished products. Moreover, heavy subsidy on urea, custom duties on imported raw material and higher GST rate on certain inputs are other major constraints for the fertilizer industry in India that need to be rationalized.
- 3.38 On consumption part, India is second largest consumer of fertilizers in the world. However, per hectare fertilizer consumption is still low compared to most of the developed countries. Besides, fertilizer use in India is highly imbalanced. Nutrient consumption is skewed in favour of nitrogenous (N) fertilizers due to heavy subsidy on urea. The distortion in nutrient prices has created distortion in NPK consumption ratio. The trend in consumption of NPK fertilizers is given in Chart 3.23. As seen from the Chart, there was a significant increase in the consumption of phosphatic (5.0%) and potassic fertilizers (4.3%) compared with nitrogenous fertilizers (2.1%) between 2013-14 and 2019-20. As a result, NPK ratio improved from 8.0:2.7:1.0 in 2013-14 to 6.1:2.5:1.0 in 2017-18, but the ratio deteriorated to (7.1:2.8:1.0) in



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2019-20 due to increased use of nitrogen based fertilizers, while potassic fertilizers declined in last couple of years.

Chart 3.23: Trends in Consumption of Fertilizers



Source: Fertilizer Association of India

3.39 Fertilizer use efficiency is low and declining due to imbalanced and inefficient use of fertilizers. The use efficiency of applied nutrients is only 30 to 50 percent for nitrogenous, 15 to 25 percent for phosphatic, 50 to 60 percent for potassic, 8 to 12 percent for sulphurous and 2 to 5 percent for other micronutrients. The inefficient use of chemical fertilizer also affects the nearby water bodies, aquifers and groundwater. In short, soil quality is degraded if fertilizers are not used judiciously, consequently affecting the crop yield.

Box 3.2: Fertilizer Response

The crop response to fertilizer application is also declining due to imbalanced and inefficient fertilizer use. As shown in the Table 3.5, during 8th plan, farmers used to get 7.5 kg foodgrains with 1 kg of fertilizers, which has come down to 5 kg grains at present.

Table 3.5: Fertilizer Responses during Different Plan periods

Period	Foodgrains (kg) per Fertilizers-NPK (kg)
8 th Plan	7.5
9 th Plan	7.0
10 th Plan	6.5
11 th Plan	6.0
At present	5.0

Source: Fertilizer Association of India

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- 3.40 Various products and practices are being developed to enhance nutrient use efficiency such as water-soluble fertilizers (WSF) that help fertigation by releasing essential plant nutrients at the root zone from where they are readily absorbed and used elsewhere in the plant system. There has been significant growth in consumption of water-soluble fertilizers. The heavy subsidy on urea has adversely affected the development and use of value-added innovative fertilizer products.
- 3.41 Therefore, farmers need to be encouraged to use soil specific fertilizers. Kisan Call Centres can be effectively leveraged to educate farmers on the need for judicious use of fertilizers. While farmers should be motivated to use bio-fertilizers along with chemical fertilizers as these are cost effective, eco-friendly and renewable source of plant nutrients. Government Agencies like KVKs (Krishi Vigyan Kendra) and ATMAS (Agricultural Technology Management Agency) need to strengthen their efforts in promotion of balanced use of fertilizers, bio-fertilizers as well as micro nutrients at ground level.

Soil Health Management: “Swasth Dhara, Khet Hara”

- 3.42 The Soil Health Card (SHC) Scheme is one of the most important interventions under National Mission for Sustainable Agriculture (NMSA), which was introduced by the Central Government in 2014-15 with an objective to promote scientific evidence-based Integrated Nutrient Management (INM). Under this Scheme, farmers are educated about the nutrient status of their soil along with appropriate dosage of nutrients to be applied for improving soil health and fertility. Soil Health Card is provided to the farmers at the interval of three years to enable them to apply recommended doses of nutrients based on soil test to realize improved and sustainable soil health and fertility resulting in lower costs and higher profits. In the first phase (2015 to 2017), 10.7 crore cards were distributed, while in second phase (2017 to 2019) against the target of 12.5 crore cards around 11.9 crore cards have been distributed.
- 3.43 The soil health card scheme is an excellent intervention to improve the soil health. It helps the farmers to increase crop production by using a balanced amount of fertilizers. The soil card gives the farmers a proper idea of which nutrients their soil is lacking and which crops they should invest in. Accordingly, they can plan the future of their crops and land. Farmers are also given information about using natural fertilizers under this scheme. Hence, more efforts are required to extend the coverage of this scheme.

Farm Mechanization

- 3.44 Farm mechanization is one of the important elements of modernization of agriculture, enhancing agricultural yield and consequently rural prosperity. Government of India has taken various initiatives such as training and demonstrations, financial assistance to farmers for procurement of farm machinery and implements, setting



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up custom hiring centres and financial assistance to small and marginal farmers for hiring machinery and implements in low mechanized regions to promote farm mechanization. Farm Machinery Training and Testing Institutes (FMTTIs), State Agricultural Universities (SAUs) and ICARs are working to ensure quality of farm machinery and implements.

- 3.45 Farm mechanization is required in the present context of shortage of labour and rising agricultural wages. Mechanization also enhances the yield of natural resources and reduces drudgery associated with various farm operations. In order to pay special emphasis towards promotion of agricultural mechanization in the country, Sub-Mission on Agricultural mechanization (SMAM) had been initiated since April, 2014. The mission was set up with the objectives of increasing the reach of farm mechanization to small and marginal farmers; promoting Custom Hiring Centers to help small and marginal farmers who could not procure machines due to high cost of individual ownership; creating hubs for hi-tech and high value farm equipments; creating awareness among stakeholders through demonstration and capacity building activities; ensuring performance testing and certification through testing centers. Promotion through training, testing and demonstration is the main component of this scheme. Financial assistance for procurement of agricultural machinery and equipment is also given under this scheme. Since the inception of the Scheme, an amount of ₹ 4,354.65 crore has been released, 1,288.06 thousand subsidized machines have been distributed to individual farmers and 27.74 thousand Custom Hiring Centres/ Farm Machinery Banks have been established in the different part of the country. In 2020-21, budget of ₹1,033 crore have been provided for the scheme, out of which ₹ 553 crore have been released to the State Governments.
- 3.46 A 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 since April 2018. The scheme aims to promote in-situ management of crop residue by its retention and incorporation into the soil through the use of appropriate mechanization technology with a view to protecting the environment from air pollution and preventing loss of nutrients and micro-organisms caused by burning of crop residue. Since the inception of the Scheme, fund of ₹ 1,671.68 crore has been released, 70.53 thousand machines have been distributed under subsidy to individual farmers and 30.96 thousand Custom Hiring Centres / Farm Machinery Banks have been established in the different part of the country.
- 3.47 As far as coverage in term of types of machinery in Custom Hiring Centres is concerned, it includes machinery related to land development, tillage, seed bed preparations, crop protection, harvesting, threshing and value addition machinery appropriate for the area according to crops grown. The Custom Hiring Centres established under Crop residue management scheme include machine for management of crop residue such as Super Straw Management System for Combine harvester, happy seeder, super seeder, hydraulically reversible mould board plough, zero seed drill,

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straw chopper, rotary slasher, rota vator, straw baler, crop ripper and ripper binder. In order to make effective use of machines available with the Custom Hiring Centres and farmers, Farm Machinery Solutions App - FARMS App has been developed, which connects the farmers with Custom Hiring Service Centers in their area. This mobile app encompasses a fair and transparent rental process while focusing on quality, dependability and timely delivery of the services. More than 55.03 lakh farmers have also been registered on this mobile app till 10th March, 2021. State-wise Number of Machinery distributed on Individual Ownership Basis and CHCs / Hitech Hubs/Farm Machinery Banks established since inception of SMAM and CRM (Crop Residue Management) Schemes is provided in Annex Table 3.1.

- 3.48 Though various initiatives have been taken for increasing the level of farm mechanization, still it stands at about 40 to 45 percent in India which is low as compared to other developed countries. Regional disparities have also been observed in the mechanization of agriculture. Uttar Pradesh, Haryana and Punjab have high level of farm mechanization while it is negligible in north- eastern States. Thus, progress of farm mechanization in India is slow due to small size of holdings in India and low income level of small and marginal farmers. Moreover, imposition of GST on farm implements and equipments has put extra burden on farmers as manufacturers would be compelled to increase the prices. More concerted efforts are required to increase the level of mechanization in India. There are many self-propelled machineries and equipments, which are suitable for small land holdings and can be used by even individual farmers. Farmers should be made aware about the benefits of farm mechanization and should be motivated through organizing more demonstrations and awareness programmes in this regard.

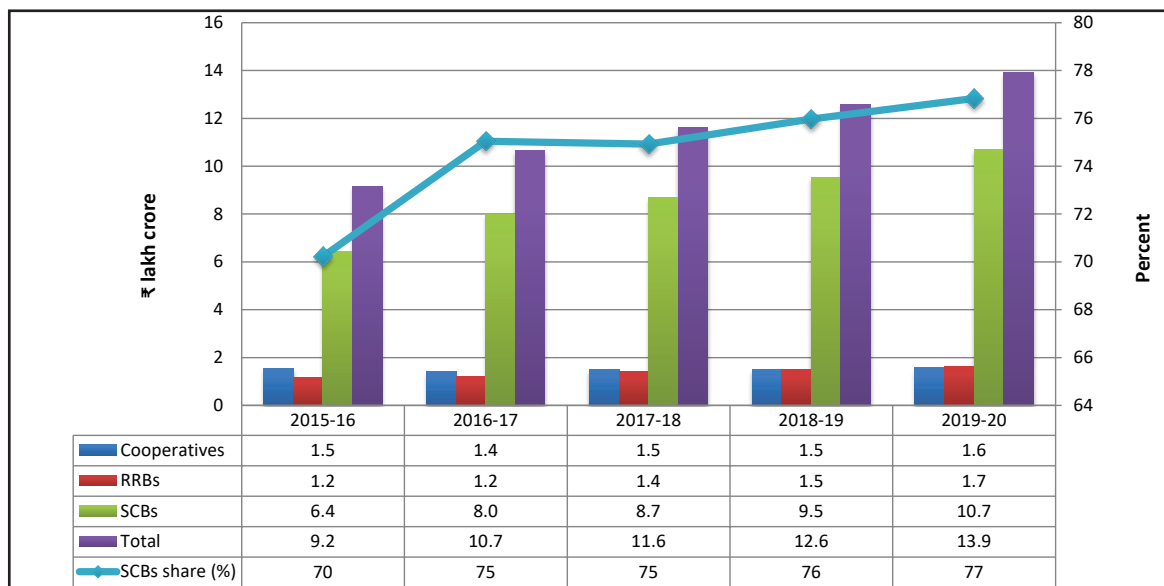
Agricultural Credit

- 3.49 The trend of agriculture credit from different agencies has been presented in Chart 3.24. The flow of credit to agricultural sector has increased from ₹9.2 lakh crore in 2015-16 to ₹13.9 lakh crore in 2019-20. Impressive growth has been witnessed in agriculture credit flow from scheduled commercial bank (SCBs), which has increased from ₹6.4 lakh crore in 2015-16 to ₹10.7 lakh crore in 2019-20, an increase of 66.4 percent. The performance of cooperative Banks and Regional Rural banks (RRB) in this regard is unsatisfactory. The share of Cooperative banks in agriculture credit was 17 percent in 2015-16, which reduced to 11 percent in 2019-20 and share of Regional Rural Banks declined from 13 percent in 2015-16 to 12 percent in 2019-20.



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Chart 3.24: Trend in Distribution of Agricultural Credit



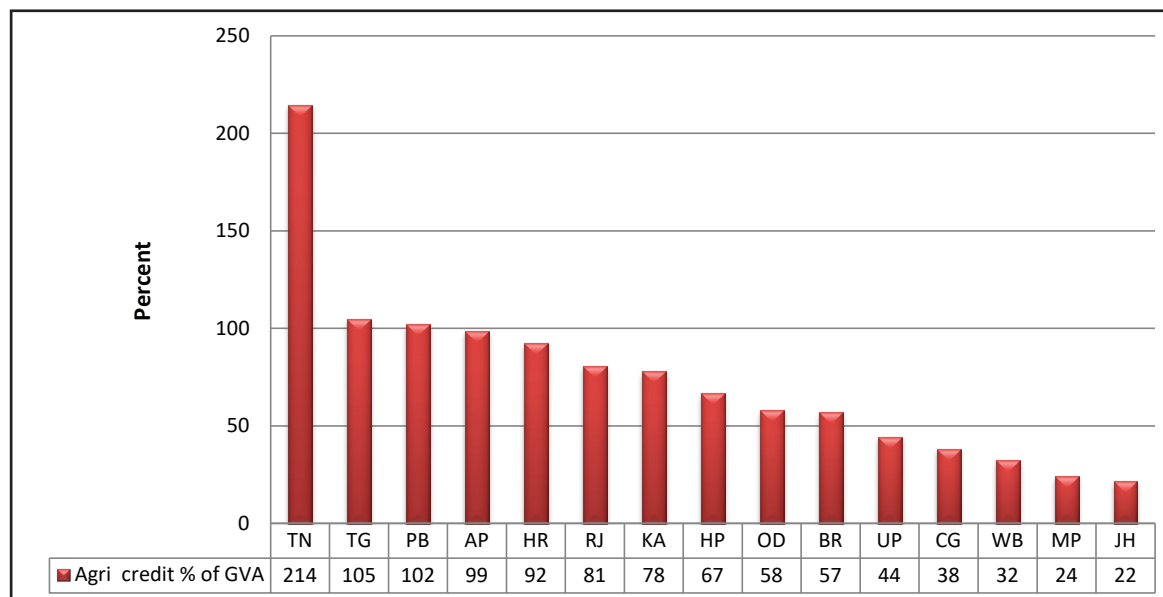
Source : National Bank for Agricultural and Rural Development (NABARD)

- 3.50 Though agricultural credit amount has increased substantially, both the quantum and timely distribution of loan is essential to enable farmers to use it for agricultural operations. Rules and formalities adopted by credit institutions for advancing loan to farmers need to be further simplified to wean farmers away from costly non-institutional sources of credit.
- 3.51 To analyse the disparity amongst the states, the ratio of State-wise total agricultural credit outstanding in relation to its agricultural Gross Value Addition (GVA) have been plotted in Chart 3.25. This chart shows that some of the states are getting agri-credit higher than their agri-GVA indicating the possibility of diversion of credit for non-agricultural purposes. It also highlights the problem of regional disparity as states falling under central, eastern and north eastern regions are getting very low agri-credit as percentage of their agri-GVA. Agricultural credit to gross value added from crops ratio was quite high in case of Tamil Nadu, Telangana, Punjab and Andhra Pradesh while it was very low in the States of Jharkhand, Madhya Pradesh, West Bengal, Chhattisgarh and Uttar Pradesh. The ratio of agricultural credit to agricultural (Crops) gross value added shows regional disparities, which ranged from a high of 214 percent in Tamil Nadu to a low of 22 percent in Jharkhand. This analysis clearly indicates that some States are getting agricultural credit more than agricultural Gross value added by crops, while some other States are not getting sufficient agricultural credit for various agricultural operations. These regional disparities may be addressed for balanced growth of agriculture sector in the country.

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Chart 3.25: State-wise Agricultural Credit to GVA (Crops) Ratio (2019-20)



Source: 1. National Bank for Agricultural and Rural Development, NABARD
2. National Statistical Office, Ministry of Statistics and Programme Implementation, Government of India

Country Comparisons of Crop Yield

- 3.52 Table 3.6 shows the comparison between global crop yield and Indian yield level for selected crops for the year 2019. It is obvious from the data presented in the Table that all-India yield for all crops except groundnut and total pulses was much lower than the world average. All-India yield of rice was 2,722 kg/ha, which is almost half of the world average (4,662 kg/ha). The level of yield in Punjab, which has the highest yield of 4,034 kg/ha in rice, is less than half of the yield level of United State of America which recorded world highest yield of 8,374kg/ha. Similarly, all-India yield of maize (3,006 kg/ha) was about half of the world average (5,824 kg/ha) and about one-third of United States of America which had the highest yield level of 10,532 kg per hectare in the world.
- 3.53 In case of soybean, all-India yield (921kg/ha) was about only one third of world average (2,769 kg/ha). The yield of Telangana, which achieved highest yield during 2019, was also lower than world average. All India average yield of groundnut was 2,063 kg per hectare which was higher than world average of 1,647 kg per hectare during this period, however it was almost half of the world highest of 4,426 kg per hectare in United State of America. For total pulses, all India yield (823 kg/ha) was also recorded higher than world average of 759 kg per hectare, still much below the world highest level of 4,051 kg/ha for Uzbekistan in the same period. This indicates that there is sufficient scope to improve the yield level of these agricultural crops. As India has second largest population in the world so it is imperative to enhance yield level to meet food requirement of fast growing population.



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Table 3.6: Yield Comparison for Major Crops (2019)

(kg/ha)

Crop	World Average	World Highest	All India Average	State Highest
Rice	4662	8374 (United States of America)	2722	4034 (Punjab)
Maize	5824	10532 (United States of America)	3006	7424 (Tamil Nadu)
Soybean	2769	3334 (Argentina)	921	1808 (Telangana)
Ground Nut	1647	4426 (United States of America)	2063	2980 (Tamil Nadu)
Total Pulses	759	4051 (Uzbekistan)	823	1172 (Gujarat)

Source: 1. Food Agriculture Organisation, 2019

2. Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Recapitulation

- 3.54 Rate of growth of yield of cereals, pulses, oilseeds grown in kharif season and cotton has improved in TE2020-21 compared to TE2015-16 but rate of growth of kharif pulses yield continues to be negative. In TE2020-21 among major kharif cereals, rate of growth of yield of jowar was the highest followed by bajra, while maize recorded the lowest growth in yield. Area under kharif cereals has declined in TE2020-21. Of all the major kharif cereals, nutri-cereals suffered decline in rate of growth of area while rice and maize registered positive growth in area under cultivation in TE2020-21. Of the major kharif cereals, bajra recorded highest growth in production, while rate of growth in maize was lowest. Kharif pulses recorded deceleration in rate of growth of production in TE2020-21 as a result of decline in growth rate of both area and yield. Out of the major kharif pulses, tur and urad recorded deceleration in production, while moong recorded growth in production. Kharif oilseeds recorded impressive growth in TE2020-21 as a result of significant growth in area.
- 3.55 Comparison of inter-State yield levels show wide variability in all crops due to uncertainties not only in weather but in many aspects of the crop environment, including pest and disease incidence, soil nutrients, and usage of farm inputs, irrigation facilities, etc. The yield gap analysis points to opportunities to improve yield in most States for major kharif crops by improving resource use efficiency, adopting high yielding varieties, using modern techniques etc. Poor quality seed has been an important handicap in boosting yield. Thus, there is a need to improve SRR for all crops in general and for crops like bajra, groundnut, sunflower in particular where SRR is lower than the target. There is a need to focus on technology by evolving location specific high yielding varieties of various crops, in particular, pulses and oilseeds. Assured irrigation encourages farmers to adopt high yielding variety seeds and thereby helps augmenting yield. Adoption of modern technologies has largely occurred in regions endowed with assured irrigation facilities. Hence strengthening various components of PMKSY will go a long way in boosting yield. Deteriorating soil health and environmental quality is a major challenge for sustainability of agriculture. Aligning NPK ratio in consonance with nutrient status of soil will significantly improve fertilizer use efficiency. Rationalization of fertilizer prices and subsidies will

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encourage farmers to adopt balanced fertilizer use based upon soil fertility, organic content, cropping pattern, etc. resulting in higher efficiency and crop yields. Sub-Mission on Agricultural Mechanization is good initiative to improve the level of farm mechanization in India, especially establishment of CHCs will expand the reach of farm mechanization to small and marginal farmers. As far as agricultural credit is concerned, there is urgent need to lessen the regional disparities for the balanced agricultural growth. Government should ensure timely and sufficient agricultural credit to perform different agricultural operations.



Chapter 4

Chapter 4

Trade Competitiveness of Indian Agriculture

- 4.1 Global economy saw an unprecedented disruption in 2020 owing to COVID-19 pandemic and subsequent lockdown to contain the spread of virus across the countries. As movement of people across the borders was severely curtailed, it led to disruptions in the supply-chains and demand shocks. These disruptions have further dampened the prospects of the global trade in goods and services after an event of trade war and protectionism in 2019. However, after considering the situation and its anticipated repercussion, agricultural trade from India reinforced India's position as a valued and trusted partner across the globe. This chapter presents a comprehensive analysis of the performance and trends in India's trade in major Kharif crops besides providing an overview of India's trade policy and global outlook in agricultural trade.

Global Trade Performance

- 4.2 According to World Trade Statistical Review 2020, world merchandise trade in 2019 registered a value of US\$19.05 trillion, a decline of 3 percent over 2018. In the total merchandise exports in 2019, the share of agricultural commodities was 9.7 percent. The world merchandise exports increased on an average by 2.2 percent per year during 2008-2019 as compared to 3.1 percent growth in exports of agricultural products during the same period. The top ten exporters of agricultural products led by the European Union, the United States and Brazil accounted for about 69.5 percent of world exports in 2019. The highest increases in exports of agricultural products among the top ten exporters were recorded by Argentina (15%), and Mexico (3%) while Indonesia experienced the biggest decline (-8%), followed by Canada (-6%) and Brazil (-5%). As per UNCTAD, in 2020, world trade recorded a drop in value of output of about 9 percent, with trade in goods declining by about 6 percent and trade in services falling by about 16.5 percent. The effect of COVID-19 on global trade was most severe in the first half of 2020, with a decline in value of about 15 percent. Global trade recovered in Q3 and Q4 of 2020. While COVID-19 has affected world trade in some sectors significantly, but most of the agri-food sectors (with the exception of tobacco and beverages) have been stable or recorded some increase in Jan-Sep 2020 relative to Jan-Sep 2019.

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India's Agricultural Trade Performance

- 4.3 India's share in total world exports was 1.8 percent in 2019, while the share in world agri-exports was 2.1 percent, valued at US\$37.4 billion. The share of India in total world imports was 2.5 percent in 2019, whereas the share in agri-imports was 1.5 percent, valued at US\$27.9 billion. India has improved its share in world agricultural exports from 1.7 percent in 2010 to 2.1 percent in 2019 and in world agricultural imports, from 1.3 percent to 1.5 percent during 2010-2019.
- 4.4 As per the data of Directorate General of Commercial Intelligence and Statistics (DGCIS), India exported agricultural commodities worth ₹262 thousand crore against agricultural imports of ₹169.7 thousand crore in the year 2019-20. While agricultural exports constituted about 11.8 percent of total export earning of the country, agricultural imports accounted for 5 percent of the total import bill of India in 2019-20¹. However, agricultural exports, which grew at an average annual rate of 8.4 percent during 2016-19, declined in 2019-20 by 7.6 percent over previous year. While the agricultural imports grew at the rate of 4.9 percent in the same year. However, in 2020-21 (Apr-Dec 2020), India's total merchandise exports declined by about 15.5 percent year-on-year but agricultural exports registered growth of about 15.8 percent during the same period due to steep rise in global commodity prices. In contrast, agricultural imports declined by about 2.6 percent and led to increase in agricultural trade surplus from ₹62.8 thousand crore in Apr-Dec 2019 to ₹96.6 thousand crore in Apr-Dec 2020.
- 4.5 Chart 4.1 illustrates the composition of India's agricultural exports and imports in 2019-20. It is seen therein that marine products emerged as the single largest commodity group of agricultural exports from India in 2019-20 with a share of 18.2 percent, followed by rice (17.3%), spices (9.8%) and meat and processed meat (9.1%). In these top four commodity groups, except spices which saw an increase in absolute value of export earnings, total exports earnings fell for rice (-15.8%) and meat (-10.3%) in 2019-20 as compared to previous year. Fall in rice exports in 2019-20 was mainly due to withdrawal of 5 percent tax incentive, provided to non-basmati rice under MEIS (Merchandise Exports from India Scheme) w.e.f 25th March, 2019. Fall in exports of meat and its processed products was mainly on account of sluggish global demand and cancelled orders, in the last quarter of 2019-20, which was due to COVID-19 scare. Sugar alone accounted for 5.3 percent of total agricultural exports and export earnings from sugar increased significantly by 46.8 percent in 2019-20 over the previous year. Among other major commodities in India's export basket, share of cotton declined from 5.2 percent in 2018-19 to 2.9 percent in 2019-20, as the export value of the commodity nearly halved. Similarly, oil meals exports from India also fell by about 44 percent in 2019-20 over previous year and its share decreased from 3.7 percent in 2018-19 to 2.2 percent in total agri-exports in 2019-20.

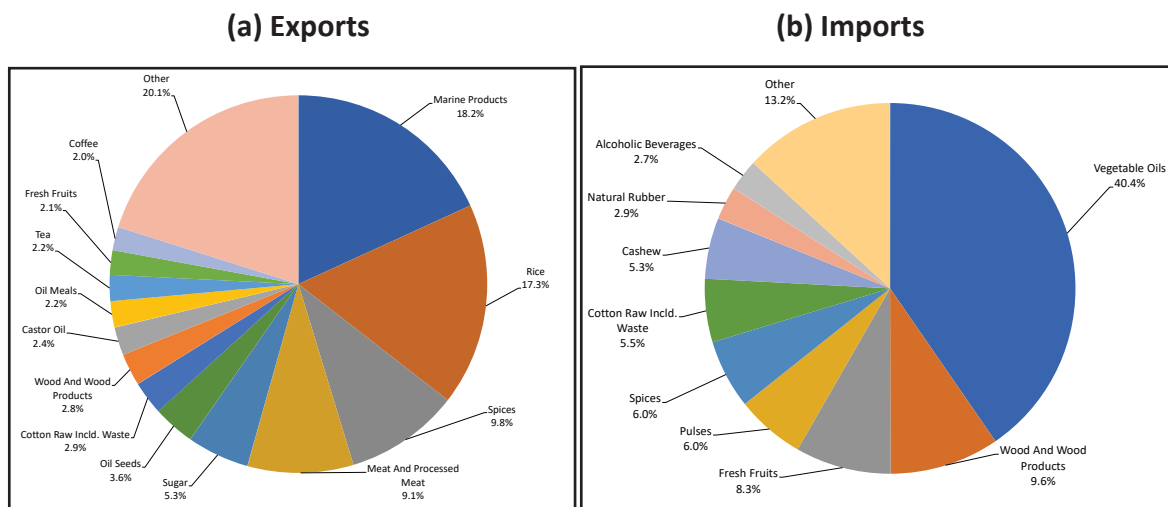
¹The composition of agricultural products is as per Chart 4.1.

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4.6 As regards the import basket of agricultural commodities, vegetable oils have been the single largest commodity group, with a share of 40.4 percent in total agri-imports in the year 2019-20. Wood and wood products constitute the second largest import item in agricultural products with a share of 9.6 percent, followed by fresh fruits (8.3%), pulses (6.0%), spices (6.0%) and raw cotton including waste (5.5%). Among the major commodities imported by India, it is notable that as compared to previous year, India imported more than double of the cotton in 2019-20 while the imports of pulses increased by 27.2 percent and spices imports grew by 28.4 percent during the same period.

Chart 4.1 Composition of India's Agricultural Exports and Imports in 2019-20



Source: Directorate General of Commercial Intelligence and Statistics (DGCIIS)

Trade Patterns and Trade Policy of Major Kharif Crops

Rice

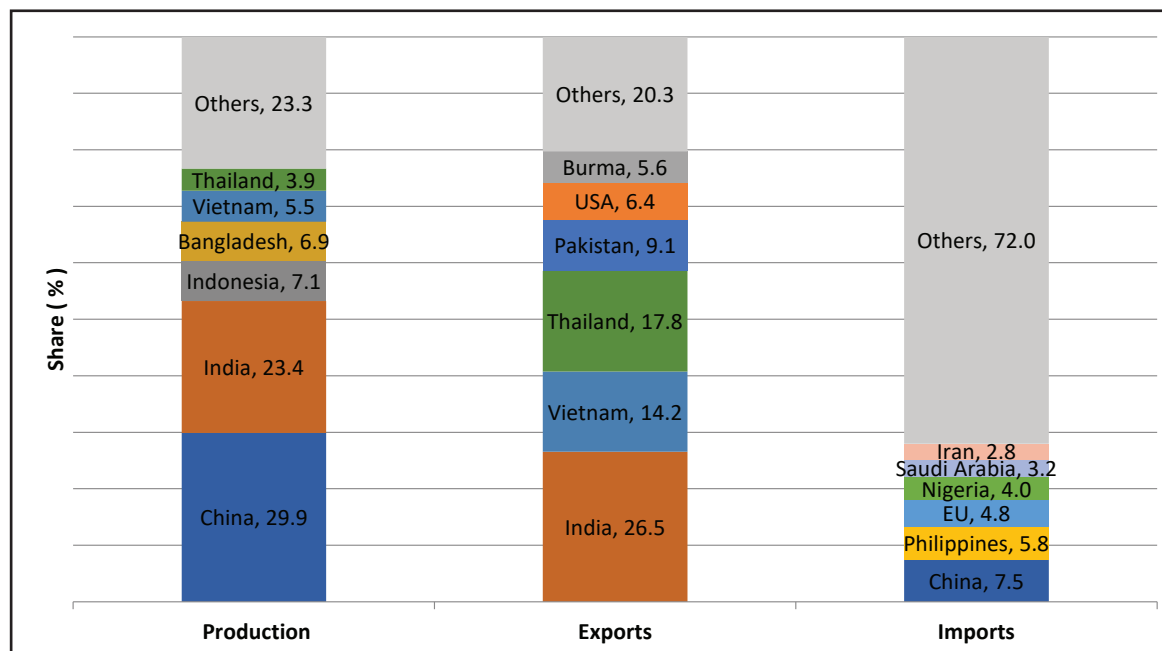
Global Production and Trade

4.7 As per the estimates of United States Department of Agriculture (USDA), the global rice production was 496.31 million tonnes in TE2019-20 with China and India accounting for more than half of the total rice production. Rice is thinly traded commodity and about 9 percent of the world rice production is traded. Chart 4.2 depicts shares of major rice producers in the world in TE2019-20. It is notable from the chart that global rice production is largely concentrated in the South-Asian countries. In the year 2020-21, rice production is expected to increase by 1.38 percent to 504 million tonnes.

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Chart 4.2: Global Players in Rice Markets, TE2019-20



Source: United States Department of Agriculture (USDA)

- 4.8 With reference to world trade in rice, India has been consistently the world's largest exporter of rice since 2011-12. India accounted for 26.5 percent of global rice exports in TE2019-20, followed by Thailand (17.8%), Vietnam (14.2%), Pakistan (9.1%) and USA (6.4%). China, which is the largest producer, also happens to be the single largest importer of rice, with a share of 7.5 percent. Philippines, European Union (EU), Nigeria and Saudi Arabia are other major importers of rice. It is observed that in contrast to rice exports, imports of rice are widely dispersed across countries and top five importers account for about 24.8 percent of the world imports of rice during TE2019-20, while top 5 exporters accounted for about 74 percent of world exports.
- 4.9 As per the projections of USDA, global trade in rice is forecast to rise with higher imports by Bangladesh, while larger exports are forecast from India. In fact, Bangladesh is expected to return to the global market as a significant rice importer in 2020-21. Reduced production of rice due to unfavorable weather conditions in the country has already resulted in higher domestic prices of rice in Bangladesh. This has spurred purchases from the global market. The Bangladesh Government has lowered its rice import tariff from 62.5 percent to 25 percent in December 2020 which makes rice exports from India extremely competitive in Bangladesh.
- 4.10 Imports by Philippines are set to decline in 2020-21 owing to higher production estimated in the country on account of higher area and yields, as indicated in USDA Report. In addition, the Philippines Department of Agriculture is implementing programmes to boost production of rice through better quality seeds, machinery,



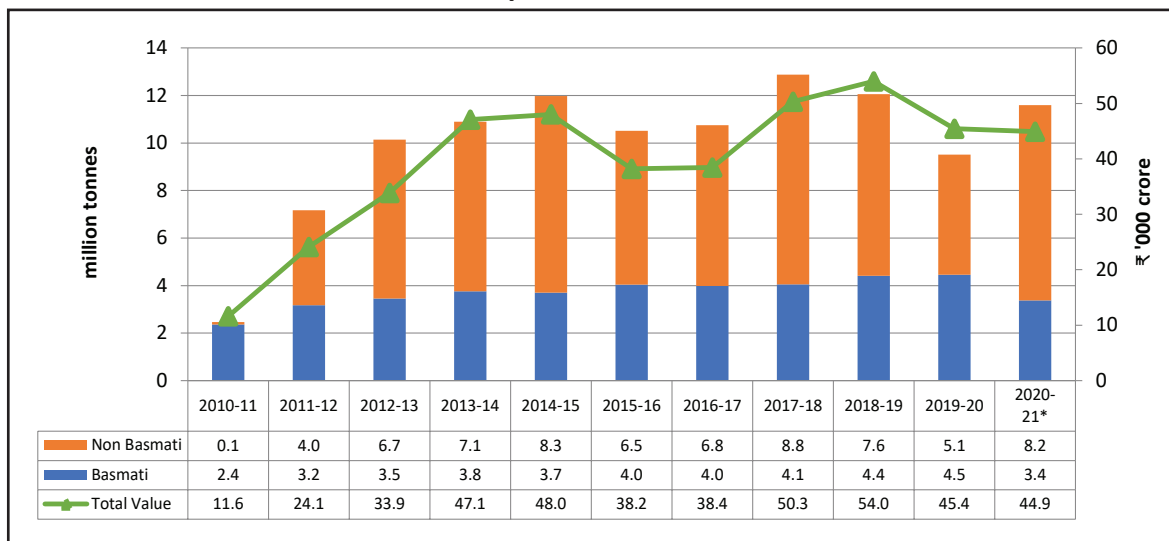
Price Policy for **KHARIF CROPS**

farm credit, and extension through the “Rice Competitiveness Enhancement Fund.” Typically, Thailand and Vietnam are the largest suppliers to the Philippines due to their proximity and competitive prices. However, both Thailand and Vietnam had experienced drought in 2019-20 and hence, have limited exportable surplus of rice in 2020-21.

India's Trade

4.11 Rice constitutes about 40 percent of total foodgrains production in India and accounted for 17.3 percent of total value of agricultural exports from India in 2019-20. The ban imposed on export of non-basmati rice in India in October 2008, was lifted in September 2011 and India emerged as the largest exporter of rice since 2012-13. India's exports of rice (basmati + non-basmati) from 2010-11 to 2020-21 (April-December) are shown in Chart 4.3. Total exports of rice from India reached a record high of 12.9 million tonnes in 2017-18 due to increase in demand for non-basmati rice from Bangladesh and Sri Lanka. However, in 2019-20 rice exports declined significantly to 9.6 million tonnes. Simultaneously, export earnings from rice fell by 15.9 percent i.e. from ₹54 thousand crore in 2018-19 to ₹45.4 thousand crore in 2019-20. This is mainly attributable to withdrawal of MEIS (Merchandise Exports from India Scheme) benefits to rice from 25th March, 2019 (non-basmati rice was eligible for 5 percent MEIS benefit during the period 26th November, 2018 to 25th March, 2019). However, rice exports are expected to reach a new record in 2020-21, due to increased imports by traditional buyers and opening up of new markets in South America and Eastern Africa. In 2020-21 (till December 2020), total rice exports from India have reached ₹44.9 thousand crore.

Chart 4.3: India's Export of Rice, 2010-11 to 2020-21



Note: * For 2020-21 (April- December)

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS)

Price Policy for **KHARIF CROPS**



- 4.12 In 2020-21, total rice exports have reached about 11.6 million tonnes till December 2020, which is an increase of 80 percent over the corresponding period last year. Out of this, exports of basmati rice have grown by about 19 percent while that of non-basmati rice have seen an increase of about 129 percent. Further, as per trend of rice exports in the past decade, it is observed that basmati rice accounted for an average 42 percent of the total rice export volumes from India. India exports basmati rice mainly to Iran, Saudi Arabia, Iraq and UAE. These countries have been old trade partners of India in rice trade and collectively constitute about two-thirds of the total basmati exports from India. Due to concerns over payment issues, the exports of basmati rice to Iran, traditionally the largest buyer of Indian basmati, have declined by about 29 percent during Apr-Dec 2020 over Apr-Dec 2019. Further it was observed that the export volumes of basmati rice have been stable over the last decade and the volatility in rice exports is mainly due to fluctuating exports of non-basmati rice.

Trade Policy

- 4.13 Export of non-basmati rice from India was banned on 15th October, 2007. However, the ban on export was replaced with Minimum Export Price (MEP) of US\$425 per tonne on 31st October, 2007, which was revised from time to time. Export of non-basmati rice was prohibited from Central Pool in March 2008 and also on private account in April 2008 in view of tight position of rice in the domestic market. This ban continued till July 2011 when export of one million tonnes of non-basmati rice on private account was allowed with a MEP of US\$425 per tonne. In September 2011, export of non-basmati rice was allowed under the Open General License (OGL) by private parties, out of privately held stocks and this has continued thereafter. The export of rice of seed quality and other rice in husk (paddy) was placed from Free to Restricted category in October 2015.
- 4.14 As regards import policy of rice, in view of tight position of rice in domestic market, import of milled and semi-milled rice was allowed at zero percent import duty during 01st March, 2008 to 01st April, 2009. With some intermittent relaxations, import duty on rice remains at 70-80 percent. At present, import duty on husked (brown) rice and broken rice is 80 percent and on milled and semi-milled rice is 70 percent.
- 4.15 As regards the trade policy for rice exports, a Certificate of Inspection from Export Inspection Council/ Export Inspection Agency is mandatory for export to EU and other European countries, namely, Iceland, Liechtenstein, Norway and Switzerland. DGFT, vide notification dated 9th January, 2020, had mandated this certification requirement for remaining European countries also w.e.f from 01st July, 2020. However, the same has now been deferred to 1st July, 2021 (vide DGFT notification dated 29th December, 2020).
- 4.16 As regards various constraints in rice exports, India faces competition from international peers in export of basmati rice due to strict regulations on maximum residue limits (MRLs) for fungicide (Tricyclazole) by European Union (EU). This is

Price Policy for KHARIF CROPS

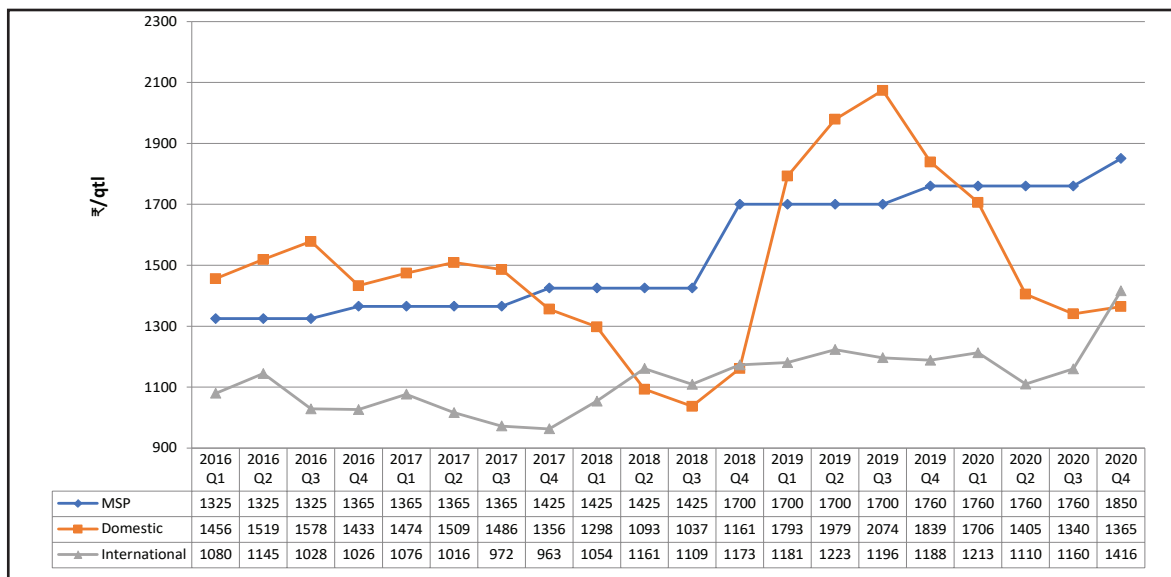


likely to be compounded as middle east countries are also insisting on EU pesticide residue parameters. In November 2018 The EU had imposed stricter level of MRL for Tricyclazole, a fungicide used in paddy crop in India, from 1 PPM to 0.01 PPM from 31st December, 2017. This put basmati rice exporters in a tough position. The MRL on other pesticides set by EU is 6.0 mg/kg for Isoprothiolane and 0.01 mg/kg for Buprofezin.

Comparative Trends in Prices

4.17 Chart 4.4 plots the trends in quarterly domestic wholesale prices of paddy, along with international prices (both Thailand and Indian variety, 25% broken rice) and MSP during 2016 to 2020. It is seen that domestic wholesale prices of rice have been generally lower than international prices, which explains part of the reason for India's high share in global rice exports. In fact, in the year 2020, international prices of paddy have risen to record highs. The average price of paddy in international market (Thailand variant) in 2020 was 23.6 percent higher than the price in 2019 while the international price of Indian variant in 2020 was only 6 percent higher vis-à-vis previous year. At the same time, the domestic wholesale price of paddy, which remained below the MSP in 2019 and 2020, has inched above its 2019 levels. Notwithstanding this increase in domestic prices, the wedge between domestic and international paddy prices widened in 2020 adding to the export competitiveness of Indian rice globally.

Chart 4.4: MSP, Domestic and International Prices of Paddy, 2016 to 2020



Note: 1. Rice (Thailand), 25 percent broken, WR, milled indicative survey price, Government standard, f.o.b. Bangkok

2. Rice (India), 25 percent broken in export market

3. International Prices of rice converted into paddy using out-turn ratio of 0.67

Source: 1. Directorate of Economics and Statistics for MSP

2. AGMARKNET for domestic wholesale prices

3. World Bank for Rice (Thailand) International Prices

4. FAO for Export prices of Rice (India), 25% broken

Price Policy for KHARIF CROPS

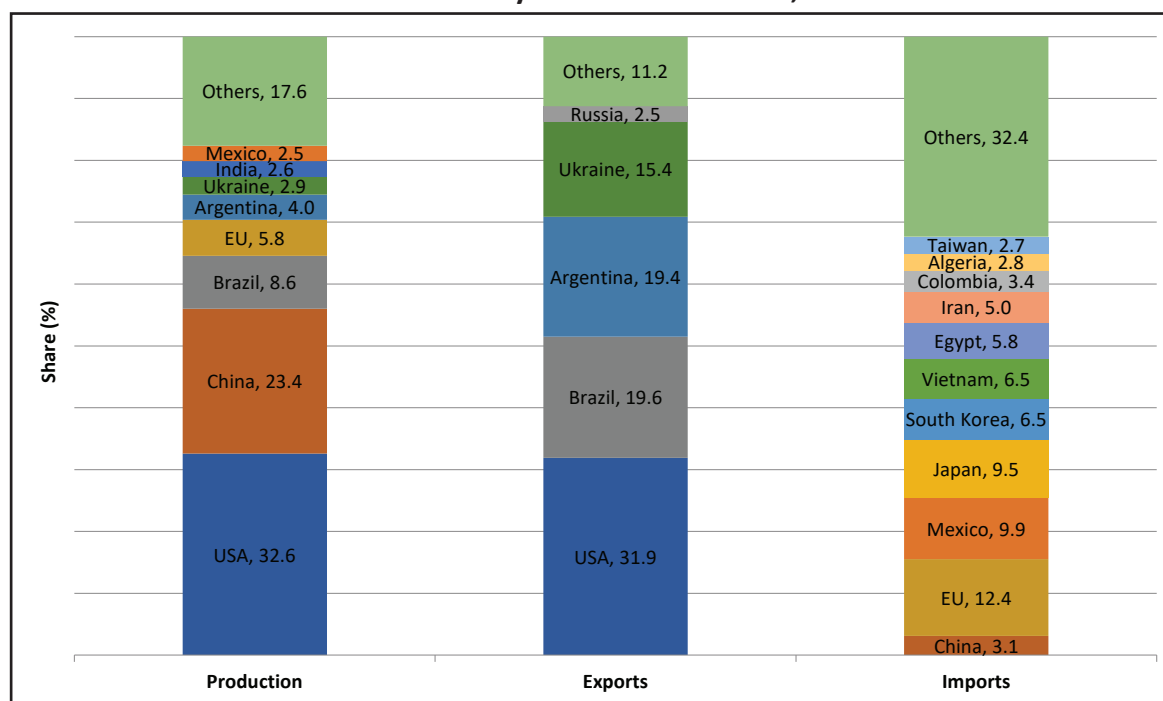


Maize

Global Production and Trade

4.18 As per USDA, global production of maize was 1,106.3 million tonnes in TE2019-20. USA has been the largest producer of maize (corn) with a share of 32.6 percent in world maize production in TE2019-20, followed by China (23.4%), Brazil (8.6%), EU (5.8%) and Argentina (4%). India (2.6%) was the seventh largest producer globally in TE2019-20 (Chart 4.5).

Chart 4.5: Global Players in Maize Market, TE2019-20



Source: United States Department of Agriculture (USDA)

4.19 About 15 percent of the global maize production was traded in TE2019-20. The exports of maize are highly concentrated and top three exporters of maize, namely, USA (31.9%), Brazil (19.6%) and Argentina (19.4%) account for more than 70 percent of total exports (Chart 4.5). On the other hand, imports of maize are more dispersed. As seen in Chart 4.5, EU was the largest importer of maize in TE2019-20 with a share of 12.4 percent, followed by Mexico (9.9%), Japan (9.5%), Vietnam (6.5%) and South Korea (6.5%).

India's Trade

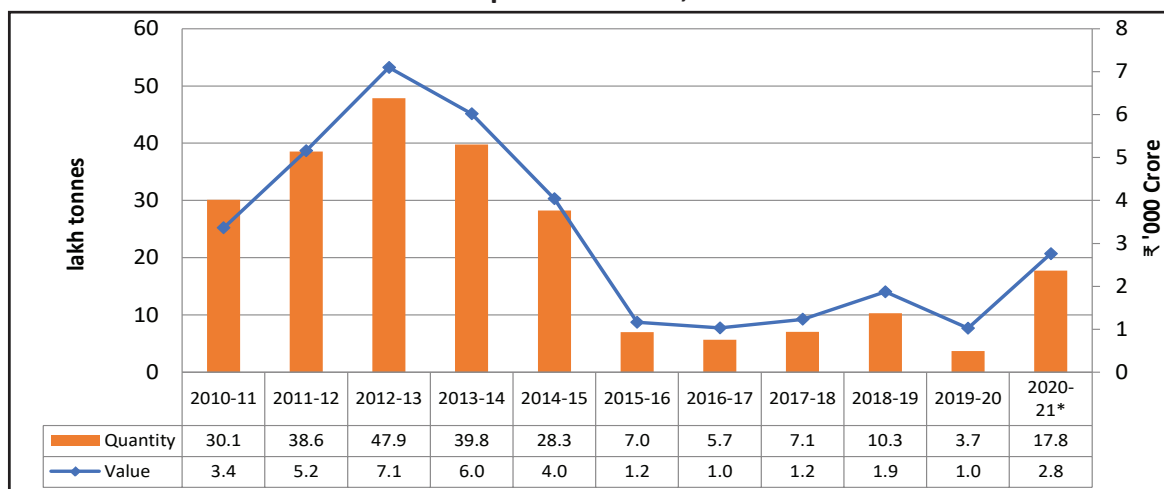
4.20 Chart 4.6 shows the exports of maize from India, in value and volume terms, during the period 2010-11 to 2020-21 (till December 2020). Exports of maize from India increased substantially from 2010-11 to 2012-13 and reached an all-time high value of ₹7.1 thousand crore in 2012-13. However, in the second half of the last decade



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i.e. 2015-16 onward, India's maize exports started dipping. Maize exports plunged to 7 lakh tonnes in 2015-16 and further to 3.7 lakh tonnes in 2019-20. However, the maize exports have picked up significantly in 2020-21 till December 2020, to 17.8 lakh tonnes. Maize exports from India in 2020-21 are expected to grow owing to dip in production of major producing countries like Argentina, Ukraine and the USA in 2020-21. World trade in maize in 2020-21 is forecast to increase due to higher purchase by China, while global stocks of maize are expected to be significantly lower than 2019-20.

Chart 4.6: India's Exports of Maize, 2010-11 to 2020-21



Note: * For 2020-21 (April- December)

Source: Directorate General of Commercial Intelligence and Statistics (DGCIIS)

Trade Policy

4.21 The trade policy of imports of maize in India has been restricted. DGFT vide Trade Notice dated 03rd April, 2019 and 09th July, 2019, limited the total import of maize in 2019-20 to 5 lakh tonnes. The import license for the same was meant only for actual users and imports were allowed only through State Trading Enterprises (STE), under the Tariff Rate Quota (TRQ) scheme at 15 percent custom duty.

Comparative Trends in Prices

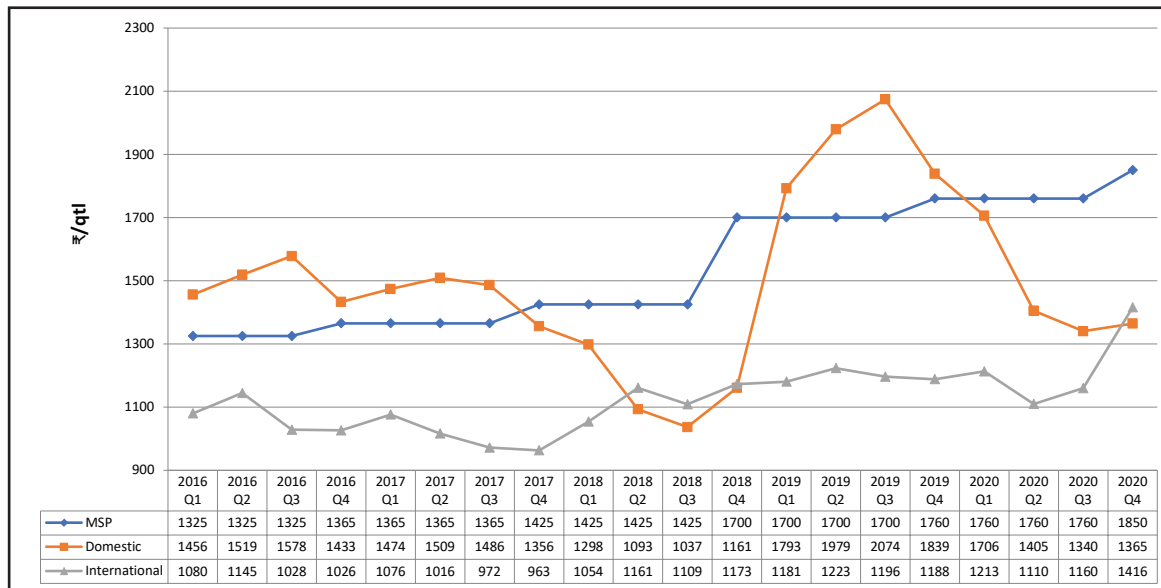
4.22 Chart 4.7 compares the trends in domestic wholesale prices, MSP and international prices of maize. It can be seen from the chart that except in 2018 (Q2, Q3 and Q4) and 2020 (Q4), the domestic wholesale prices of maize have stayed consistently above the international prices during 2016-2020. This renders India's maize exports uncompetitive and explains the declining export volumes of maize since 2015-16. Further, domestic wholesale prices of maize are also highly volatile as compared to international prices. The domestic prices dipped below MSP in 2018 and rose sharply in 2019, rising above MSP before moderating in 2019(Q4). Interestingly, while the international prices of maize have been rising from 2020(Q2) onwards,

Price Policy for KHARIF CROPS



the domestic prices have been falling during the same period, bringing about a convergence between the two by the end of 2020.

Chart 4.7: MSP, Domestic and International Prices of Maize, 2016 to 2020



Source: 1. Directorate of Economics and Statistics for MSP
2. AGMARKNET for domestic wholesale prices
3. World Bank for international prices

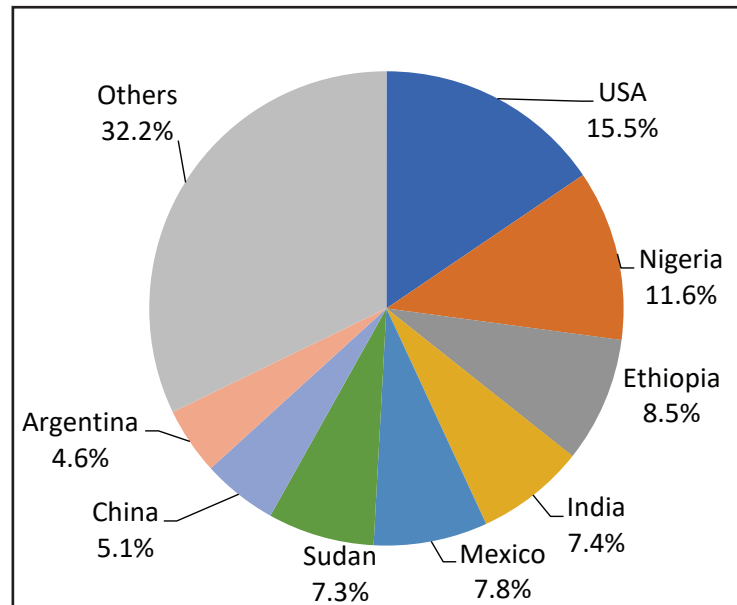
Sorghum/Jowar

Global Production and Trade

4.23 Global production of sorghum/jowar in 2019-20 was about 58 million tonnes, which was 2.1 percent below the previous year's production. Chart 4.8 depicts the major producers of jowar in TE2019-20. USA is the largest producer with a share of 15.5 percent followed by Nigeria (11.6%), Ethiopia (8.5%), India (7.4%) and Mexico (7.8%). About 9.3 percent of world jowar production is traded and USA was the largest exporter, with a share of 78.1 percent in TE2019-20 followed by Argentina (7.1%) and Australia (4.0%). Similar to the concentration of exports, imports of jowar are also highly concentrated. China is the largest importer (53.9%), followed by Japan (8.9%) and EU (8.4%).



Chart 4.8: Major Producers of Jowar in TE2019-20



Source: United States Department of Agriculture (USDA)

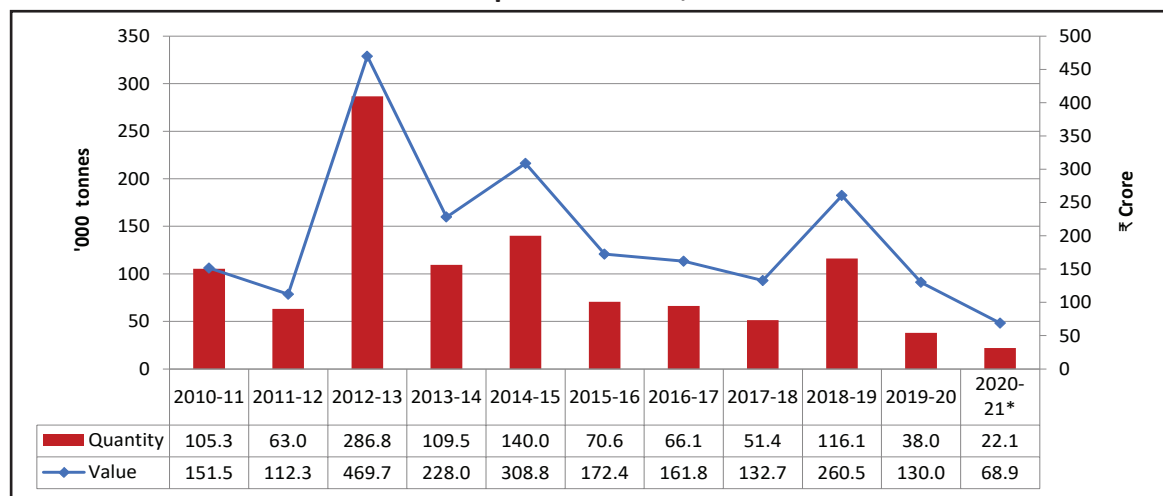
India's Trade

4.24 India being fifth largest jowar producer has been exporting small volumes of jowar to neighbouring countries like Pakistan, Saudi Arabia, UAE and Kenya, mainly due to freight advantage. Chart 4.9 gives the trends in exports of sorghum/ jowar from India during the period 2010-11 to 2020-21 (till December 2020). During this period, India's exports of jowar have fluctuated between a low of about 38 thousand tonnes in 2019-20 to a high of 286.8 thousand tonnes in 2012-13. The export earnings from jowar have also moved in tandem with the export volumes, ranging from ₹130 crore in 2019-20 to ₹469.7 crore in 2012-13. The recent trends of declining exports in jowar point to a gradual decline in India's competitiveness in the commodity in the international market. According to USDA estimates, China's rising demand for jowar is likely to be met by higher USA exports, as India's higher domestic prices negates the freight advantage vis-à-vis USA for exporting to China.

Price Policy for KHARIF CROPS



Chart 4.9: India's Exports of Jowar, 2010-11 to 2020-21



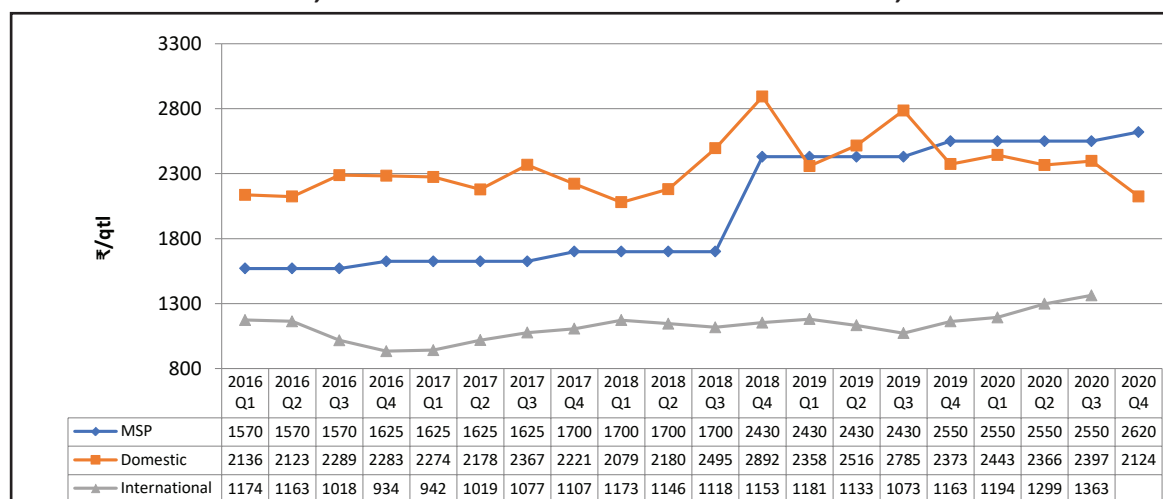
Note: * For 2020-21 (April- December)

Source: Directorate General of Commercial Intelligence and Statistics (DGCISS)

Comparative Trends in Prices

4.25 Domestic wholesale prices and MSP of jowar have been continuously higher than international prices during 2016 to 2020 (Chart 4.10). This renders exports of jowar from India uncompetitive. Domestic market prices of jowar were higher than the MSP in the year 2019. However, since the last quarter of 2019, the domestic prices have been continuously falling, resulting in rising gap between domestic prices and MSP. The fall in domestic prices is accentuated by the reduced exports and hence, reduced demand. This calls for increased focus on procurement of jowar in the ensuing Kharif season.

Chart 4.10: MSP, Domestic and International Prices of Jowar, 2016 to 2020



Source: 1. Directorate of Economics and Statistics for MSP

2. AGMARKNET for domestic wholesale prices

3. World Bank for international prices

Pulses

4.26 India holds the distinction of being the world's largest producer, consumer and importer of pulses. Pulses are a major source of protein for a majority of Indians, particularly the vegetarian population. Promotion of pulses cultivation has been a policy priority in India as it is widely understood that pulses can help India overcome problem of malnutrition, improve soil fertility by nitrogen fixation and provide income support to farmers.

Global Production and Trade

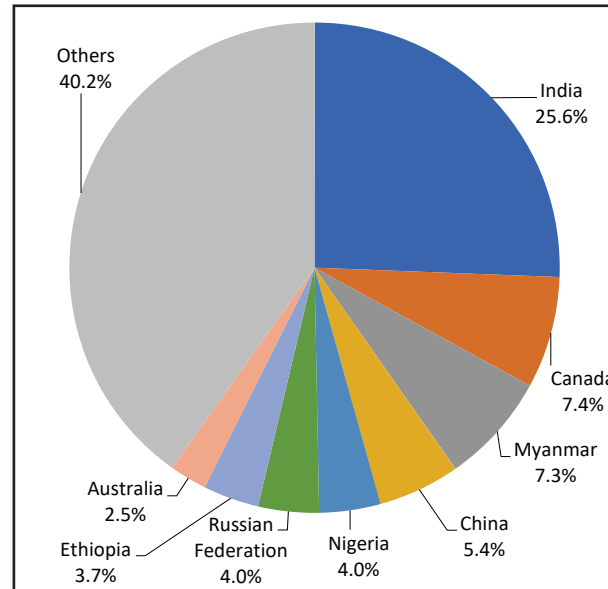
4.27 As per the estimates of Food and Agricultural Organisation (FAO), global production of pulses was 92.13 million tonnes in TE2019. India was the largest producer of pulses, with a share of 25.6 percent, followed by Canada (7.4%), Myanmar (7.3%), China (5.4%), Russian Federation (4.0%) and Nigeria (4.0%). Chart 4.11 gives the shares of major producers of pulses around the world in TE2019. As per FAO- OECD Agricultural Outlook, the Asian market accounts for more than half of the total consumption of pulses, but only about 40 percent of the production, making it the most significant import destination. About 20 percent of global production of pulses is traded. Canada (40% share) is the largest exporter, while India is, the largest importer (30% share) of pulses. Africa has become self-sufficient in pulses during the past decade by further expanding its production.

4.28 The OECD-FAO Agricultural Outlook 2020-2029 has noted that the health benefits of pulses and role of pulses in manufacturing products like artificial meat would propel the growth of the global pulses market. The pulses-producing countries are already providing assistance to farmers, in turn, strengthening the growth of the market. Support to pulses production plays an important role in the Protein Strategy of the European Union. Accordingly, global supply of pulses has been projected to grow by another 16 million tonnes in the coming decade and more than half of this increase is expected to come from Asia, particularly India. This production expansion is expected to be driven by improved yields and area expansion. About 80 percent of the production growth can be attributed to yield improvements while the remaining 20 percent is expected from land use intensification, mainly in Asia and Africa. Sustained yield improvements through high-yielding varieties/hybrids and price support through MSP are expected to raise India's domestic production.

Price Policy for **KHARIF CROPS**



Chart 4.11 Major Producers of Pulses, TE2019



Source: Food and Agricultural Organisation (FAO)

4.29 As regards the trade outlook, the OECD-FAO Agricultural Outlook 2020-2029 estimates that world trade in pulses, which grew from 11 million tonnes to 17 million tonnes over the past decade, is projected to remain at this level upto 2029. Given India's recent efforts to become self-sufficient in pulses, India is expected to experience a reversal in net-importing trend by 2025. This would restructure the global pulses trade and Africa is expected to emerge the main importing region in the longer term. Canada and Australia will remain the major exporters of pulses in the world.

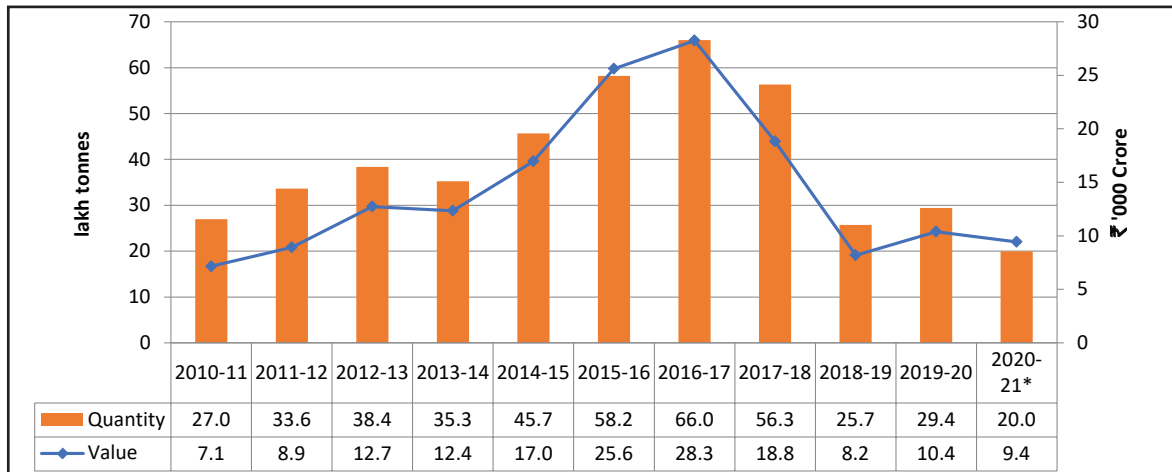
India's Trade

4.30 Chart 4.12 depicts the trends in volume and value of import of pulses in India during the period 2010-11 to 2020-21 (till December 2020). As per DGCIS data, import of pulses steadily increased from 27 lakh tonnes in 2010-11 to 66 lakh tonnes in 2016-17. During the same period, the import bill on pulses increased from ₹7.1 thousand crore in 2010-11 to ₹28.3 thousand crore in 2016-17. To curb rising imports of pulses, Government took several initiatives to encourage domestic production and reduce dependence on imports. Imports of pulses were restricted through import duties/quantitative restrictions while export restrictions were removed. As a result of these measures, imports of pulses started declining and reduced by more than 50 percent between 2016-17 and 2018-19 but in import volumes of pulses increased by 14 percent in 2019-20. So far in 2020-21, 20 lakh tonnes of pulses have been imported till December 2020.



Price Policy for **KHARIF CROPS**

Chart 4.12: India's Import of Pulses, 2010-11 to 2020-21

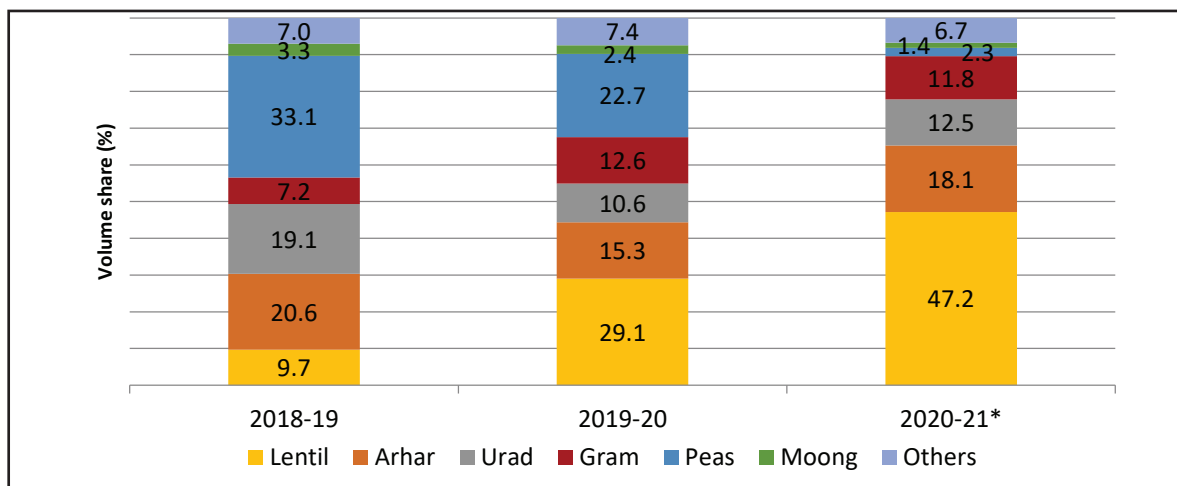


Note: * For 2020-21 (April- December)

Source: Directorate General of Commercial Intelligence and Statistics (DGCIIS)

4.31 Chart 4.13 illustrates the changing composition of India's pulses imports for last three years. It is seen that lentil is emerging as the major pulse to be imported in India while the share of tur/arhar has significantly reduced. During 2019-20, lentil accounted for major share in the pulses import (29.1%), followed by peas (22.7%), arhar (15.3%) and chana (12.6%). During Apr-Dec 2020, lentil accounted for 47.2 percent of total pulses imports, followed by arhar (18.1%), urad (12.5%) and gram (11.8%). Canada (lentils and peas), Myanmar (moong/urad and tur) and Australia (chickpeas and lentils) are major exporters of pulses to India and account for about three-fourth of total imports in the country. Other exporters of pulses to India are Russia, Mozambique, Kenya and USA. The key import origins for major pulses in India for the year 2019-20 and 2020-21 are given in Annex Table 4.5.

Chart 4.13: Changing Composition of India's Pulses Imports



Note: * For 2020-21 (April- December)

Source: Directorate General of Commercial Intelligence and Statistics (DGCIIS)

Price Policy for **KHARIF CROPS**



Trade Policy

- 4.32 India's trade policy in pulses was relatively liberal. In 1979, import of pulses was placed under Open General License (OGL) and import duties declined steadily during the 1980s and 1990s. The import duty on pulses which was 10 percent during 1989 to 1994, was later reduced to zero percent in June 2006 but due to steep decline in domestic prices as a result of increased domestic production and higher imports, 10 percent import duty was imposed on tur (arhar) in June 2017. On 21st December 2017, Government imposed 30 percent import duty on chickpeas and lentils, which was further increased to 60 percent on chickpeas in March 2018 due to depressed prices in domestic market. Import duty on gram was raised from zero to 30 percent on 21st December 2017, which was further raised to 40 percent on 6th February, 2018 and 60 percent on 1st March, 2018. The MEIS benefit of 7 percent for bengal gram available up to 20th June, 2018 was extended for exports up to 20th June, 2018 vide DGFT public notice No.22/2015-2020 dated 13th July, 2018. As on 2nd February 2021, import of urad, moong and tur are subject to 30 percent import duty.
- 4.33 Simultaneously, to protect pulse growers from cheap imports, three pulses viz. tur, urad and moong were brought under quantitative restrictions for imports in 2017. On 5th August, 2017, 2 lakh tonnes annual quota was imposed on tur and on 21st August, 2017, 3 lakh tonnes annual quota each was imposed on urad and moong. Government vide notification dated 25th April, 2018 revised import policy of yellow peas from 'free' to 'restricted' and imposed quantitative restriction on imports with 1 lakh tonnes for the period 1st April, 2018 to 30th September 2018. Import of peas (including yellow peas, green peas, dun peas and kaspa peas) was restricted till 31st March, 2019 vide Department of Commerce's notification dated 28th December, 2018. Import of peas were subject to an annual quota of 1.5 lakh tonnes till 31st February, 2020 as per Department of Commerce's notification dated 16th April, 2019. Later, Department of Commerce imposed an annual quota of 4 lakh tonne on import of urad till 31st March, 2020 vide notification dated 18th December, 2019. Government of India extended quantitative restrictions on peas, moong and tur till 31st March, 2021 vide DGFT notifications dated 28th March, 2020 and 16th April, 2020. For green peas and other categories, quota was fixed at 75,000 tonnes each while for yellow peas, imports were prohibited altogether. For moong, import quota was fixed at 1.5 lakh tonnes and for tur, at 4 lakh tonnes. The import policy conditions such as minimum import price (MIP) of ₹200/kg and port restriction from Kolkata port only, as notified on 18th December 2019, remains unchanged. These quota restrictions do not apply to Government's import commitments under any bilateral/regional agreement or Memorandum of Understanding. Further, on 3rd March, 2021, Government has notified an annual quota of 4 lakh tonnes for import of urad in fiscal year 2021-22.
- 4.34 As regards the export policy, Government lifted ban on export of tur, urad and moong in September 2017 but permission from Agricultural and Processed Food Products

Price Policy for **KHARIF CROPS**

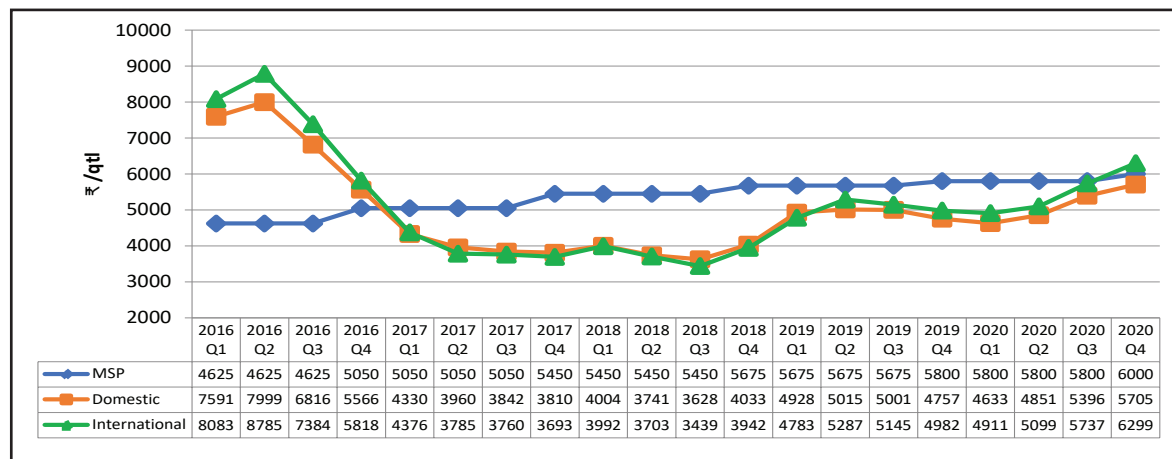
Export Development Authority (APEDA) was needed. However, in November 2017, Government removed prohibition on export of all types of pulses subject to the condition that export shall be through Customs Electronic Data Interchange (EDI) Ports only. However, exports through Land Custom Stations (LCS) Indo-Bangladesh and Indo-Nepal border shall also be allowed subject to registration of quantity with DGFT.

Comparative Trends in Prices

4.35 The comparative trends of quarterly domestic wholesale prices, MSP and international prices of kharif pulses, namely, tur/arhar, urad and moong, during the period 2016 to 2020 are presented in Charts 4.14, 4.15 and 4.16, respectively. The domestic prices are closely aligned with the international prices as India is a key player in the global pulses market. In fact, for tur/ arhar and urad, the gap between domestic and international prices has been very low for the entire period. In moong, international prices have stayed above the domestic prices from 2017 onwards, with an average mark-up of ₹1,017 per quintal.

4.36 As regards the movement in the prices of pulses vis-à-vis their MSP, it is seen that in case of tur/ arhar, market prices (both domestic and international) have been below MSP since beginning of 2017 till Q3 of 2020, indicating greater role of procurement and associated price support. However, during 2020, both domestic and international prices showed an upward trend and international prices were higher than MSP. In case of urad, domestic prices remained below MSP during 2017(Q3) to 2020(Q1) but have moved above MSP since then. Similarly, in case of moong, domestic prices have remained below MSP during 2017- 2020, barring the first two quarters of 2020. Though pulse production in the country has shown an upward trend during the last five years, ensuring remunerative prices is important to sustain the momentum of pulse production and crop-diversification.

Chart 4.14: MSP, Domestic and International Prices of Arhar, 2016 to 2020

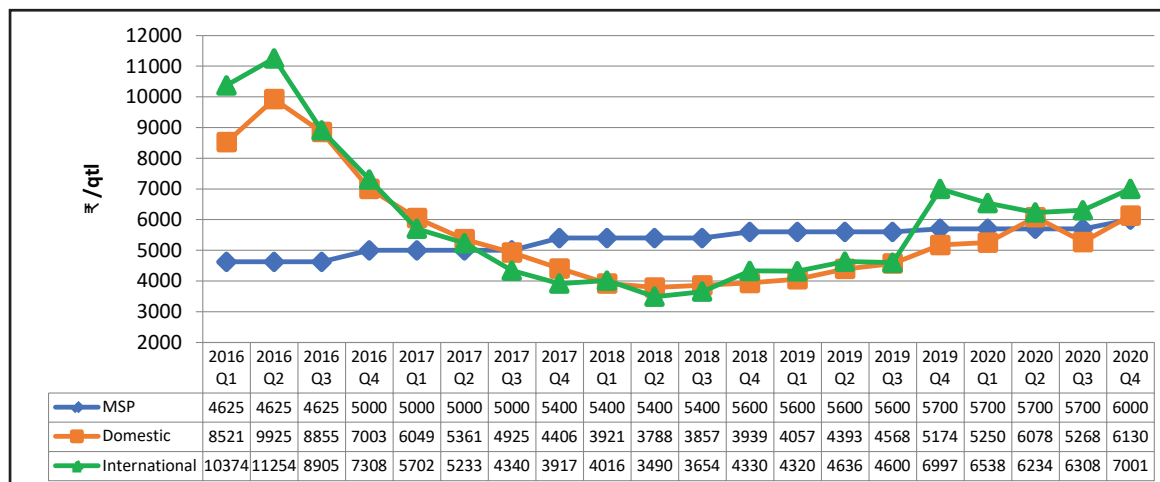


Source: 1. Directorate of Economics and Statistics for MSP
2. AGMARKNET for domestic wholesale prices
3. Agriwatch for international prices

Price Policy for KHARIF CROPS

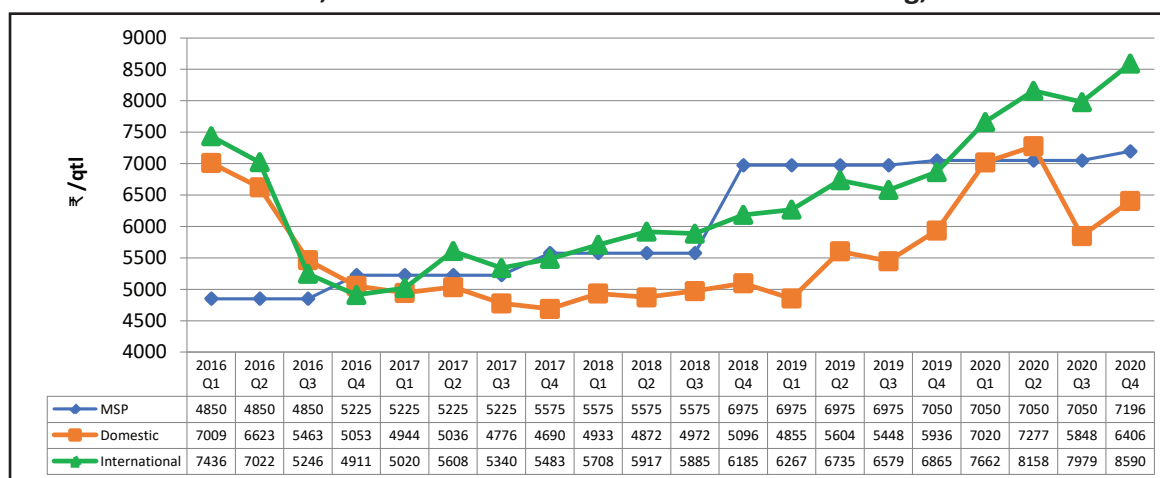


Chart 4.15: MSP, Domestic and International Prices of Urad, 2016-2020



Source: 1. Directorate of Economics and Statistics for MSP
2. AGMARKNET for domestic wholesale prices
3. Agriwatch for international prices

Chart 4.16: MSP, Domestic and International Prices of Moong, 2016-2020



Source: 1. Directorate of Economics and Statistics for MSP
2. AGMARKNET for domestic wholesale prices
3. Agriwatch for international prices

Oilseeds and Edible Oils

Global Production and Trade

4.37 Major oilseeds produced around the world include soybean, rapeseed, sunflower seed, groundnut and cottonseed etc. Palm cultivation is also a major source of edible oil and account for more than one-third of world vegetable oil production. As per estimates of USDA, global production of major oilseeds was 586.3 million tonnes in TE2019-20, out of which 30.2 percent was traded. Soybean has the largest share (59.1%) in total oilseeds production, followed by rapeseed (12.4%), sunflower seed

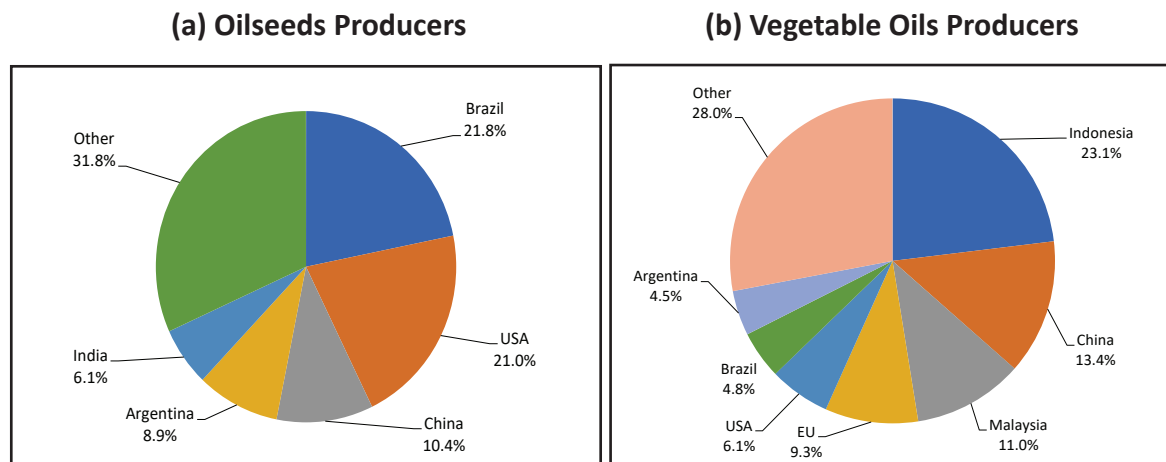
Price Policy for **KHARIF CROPS**



(8.7%), groundnut (7.9%) and cottonseed (7.5%). Production of oilseeds reached an all-time high of 600 million tonnes in 2018-19 but, declined by 4 percent in 2019-20 to 57.6 million tonnes. Global oilseeds production for 2020-21 is projected to be higher at 595 million tonnes.

- 4.38 As regards the spatial aspects of production of oilseeds, USA had been the largest producer till 2018-19. In 2019-20, Brazil overtook USA to become the largest oilseeds producer. Chart 4.17(a) shows the shares of major producers of oilseeds and vegetable oils in TE2019-20. In TE2019-20, Brazil accounted for 21.8 percent of total production of major oilseeds and USA was a close second with 21 percent share. Other major producers are China (10.4%), Argentina (8.9%) and India (6.1%). Top three producers, namely, Brazil, USA and China, account for more than half of the global production of oilseeds. However, China being a major consumer of oilseeds, Brazil and USA are top exporters and accounted for 74.3 percent of global exports in TE2019-20. Major importers of oilseeds include China (54.3%) and European Union (12.2%).

Chart 4.17: Major Producers of Oilseeds and Vegetable Oils, TE2019-20



Source: United States Department of Agriculture (USDA)

- 4.39 Global production of major vegetable oils was 203.1 million tonnes in TE2019-20, out of which 39.4 percent was traded, as per USDA. In TE2019-20, palm oil had the largest share (35.8%) in total vegetable oils production, followed by soybean oil (27.7%), rapeseed oil (13.7%) and sunflower oil (9.8%). As shown in chart 4.17(b), Indonesia was the largest producer of vegetable oil in TE2019-20, with a share of 23.1 percent, followed by China (13.4%), Malaysia (11%), EU (9.3%) and USA (6.1%). Indonesia and Malaysia together account for 57.3 percent of global exports with a share of 35.1 percent and 22.2 percent, respectively in TE2019-20. India was the largest importer of edible oils with a share of 18.2 percent in TE2019-20, followed by EU (14.4%) and China (13.6%). Demand for edible oils is steadily rising in India. Accordingly, the Government of India is incentivizing production of oilseeds to reduce its import dependence through careful synchronization of price policy and trade policy.

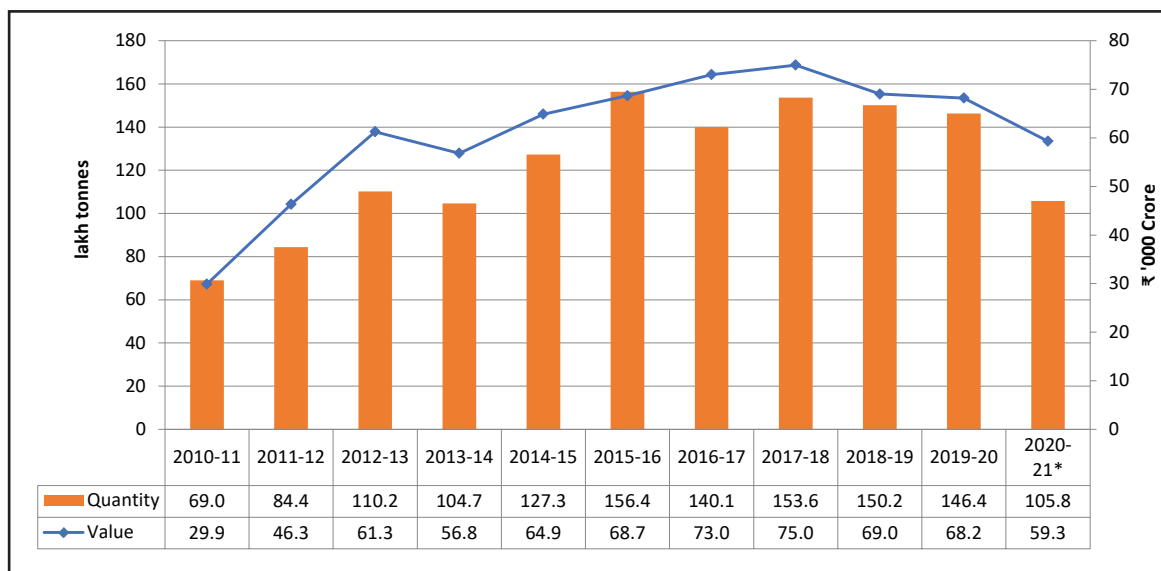
Price Policy for KHARIF CROPS



India's Trade

4.40 India has been the largest importer of edible oils in the world in recent years. As per DGCIS data, India's imports of edible oils have increased from 69 lakh tonnes valued at ₹29.9 thousand crore in 2010-11 to 156.4 lakh tonnes valued at ₹68.7 thousand crore in 2015-16 (Chart 4.18). Imports of edible oils increased significantly during 2014-15 and 2015-16 due to fall in domestic production coupled with decline in international prices of edible oils, particularly palm oil. While the import volumes fell marginally in 2016-17, the edible oil imports increased to 153.6 lakh tonnes and import bill swelled up to ₹75 thousand crore in 2017-18. Edible oil imports recorded a declining trend in 2018-19 and 2019-20. In 2019-20, 146.4 lakh tonnes of edible oils valued at ₹68.2 thousand crore were imported. In 2020-21, imports of edible oils are likely to stay below the previous year levels, perhaps on account of economic contraction and associated fall in consumer spending on fats and oils. Still, in 2020-21, India is forecast to meet 65 percent of consumption requirements of edible oils from imports, as per USDA.

Chart 4.18: India's Import of Edible Oils, 2010-11 to 2020-21



Note: * For 2020-21 (April- December)

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS)

Soybean Complex

Global Production and Trade

Soybean

4.41 As per USDA, global production of soybean was 346.8 million tonnes during TE2019-20, out of which about 45 percent was traded. Global production of soybean decreased in 2019-20 by 6.8 percent as compared to previous year but is forecast to increase by about 7.3 percent at about 361.1 million tonnes in 2020-21. Till 2018-19, USA was the largest producer of soybean but in 2019-20, Brazil overtook USA to become world's largest producer of soybean. In TE2019-20, Brazil produced 35.5 percent of global soybean, followed by USA (32.4%), Argentina (13.6%), China (4.7%) and India (2.7%). Brazil and USA are not just the largest producers but also, largest exporters contributing 84.4 percent of total world exports in TE2019-20, with respective share of 52.0 percent and 32.4 percent. China (59.2%) is the single largest importer of soybean followed by a distant second highest importer, EU (9.7%) in TE2019-20.

Soybean Oil

4.42 Global production of soybean oil has been consistently growing over the recent years. In 2019-20, as per USDA, the world soybean oil production increased by 3.7 percent over the previous year and stood at 57.9 million tonnes. Subsequently, the soybean oil production in 2020-21 is expected to further grow by 4.2 percent, to all time high of 60.3 million tonnes. In TE2019-20, of the 56.3 million tonnes of soybean oil produced, about 20 percent was traded. China, being the largest importer of soybean oilseed, was the largest producer of soybean oil, with a share of 28.3 percent, followed by USA (19.6%), Brazil (14.9%) and Argentina (13.5%). India's share in global production is only 2.7 percent. Argentina, Brazil and USA together account for about 65 percent of total soybean oil exports while India is the largest importer (30.3%) of soybean oil, followed by Bangladesh (8%) and China (7.1%).

Soybean Meal

4.43 The global production of soybean meal was 236.3 million tonnes in TE2019-20, out of which 28 percent was traded. As per USDA, China is the largest producer of soybean meal, with a share of 29.8 percent in TE2019-20, followed by USA (19.1%), Brazil (14.3%) and Argentina (12.6%). Argentina (41.3%), Brazil (24.8%) and USA (18.8%) export nearly 85 percent of total world exports. EU is the largest importer of soybean meal, with a share of 29.1 percent, followed by Vietnam (8.1%) and Indonesia (7.4%).

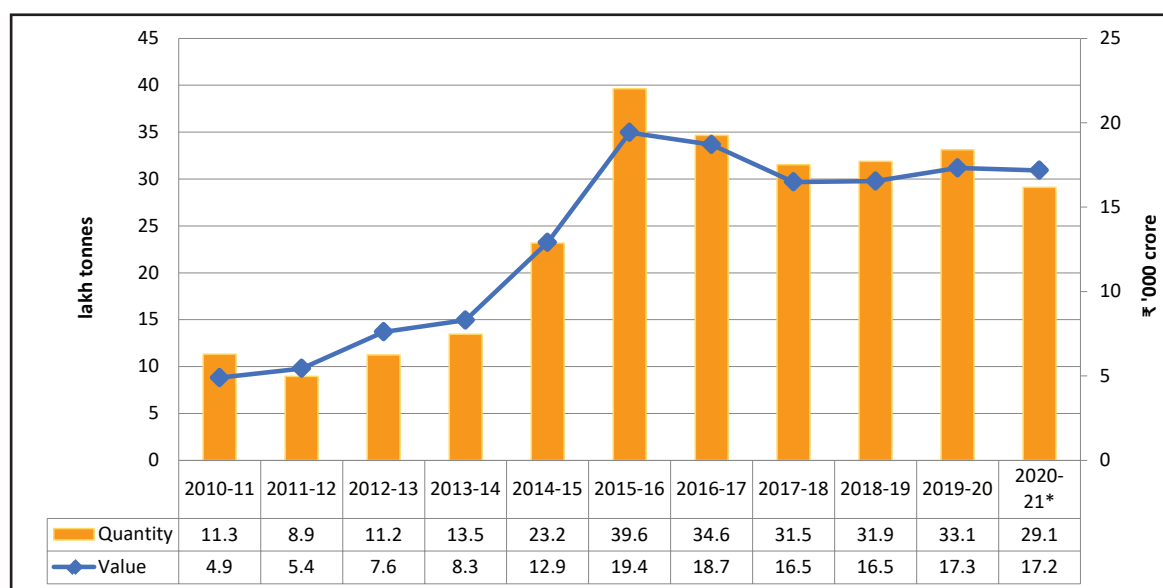
Price Policy for KHARIF CROPS



India's Trade

4.44 Soybean is an industrial crop and its price is linked to the prices of its derived products i.e. soybean meal and oil. India is not able to export soybean as domestic prices have typically remained higher than international prices. However, the country imports soybean oil to meet domestic requirement. Imports of soybean oil increased from 11.3 lakh tonnes in 2010-11 to 39.6 lakh tonnes in 2015-16 but declined in next two years and were 33.1 lakh tonnes in 2019-20 (Chart 4.19). Imports of soybean oil significantly increased in 2014-15 and 2015-16 due to decline in domestic production and lower international prices of soybean oil during this period. Soybean oil imported into the country is mainly GM-soybean oil as most of exporting countries grow GM soybean.

Chart 4.19: India's Import of Soybean Oil, 2010-11 to 2020-21



Note: * For 2020-21 (April- December)

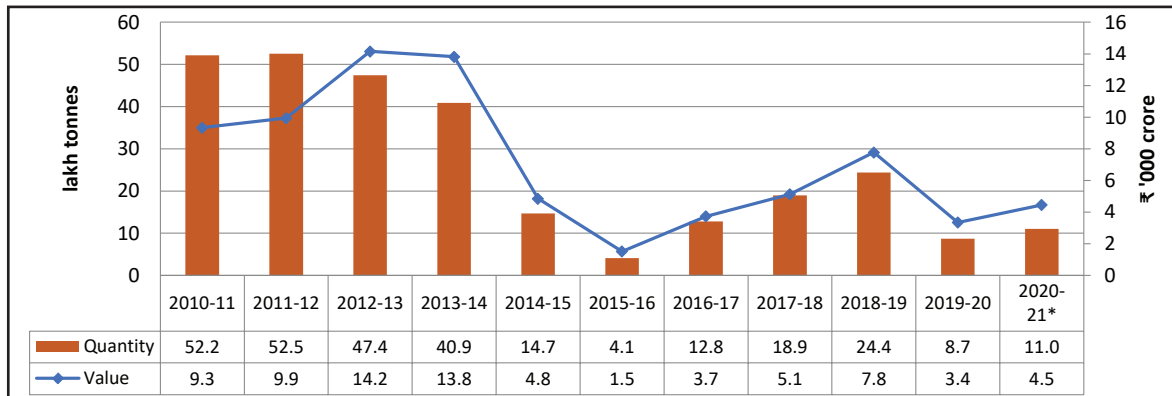
Source: Directorate General of Commercial Intelligence and Statistics (DGCIS)

4.45 Indian exports of soybean meal picked up during 2016-17 to 2018-19 because of low soybean prices in India and opening up of Iranian market for Indian soybean meal. Moreover, the export volumes of soybean meal fell to one-third of previous year levels in 2019-20 (Chart 4.20). However, the exports in 2020-21 (till December) have improved and reached 11 lakh tonnes, surpassing the level reached in 2019-20.



Price Policy for **KHARIF CROPS**

Chart 4.20: India's Export of Soybean Meal, 2010-11 to 2020-21



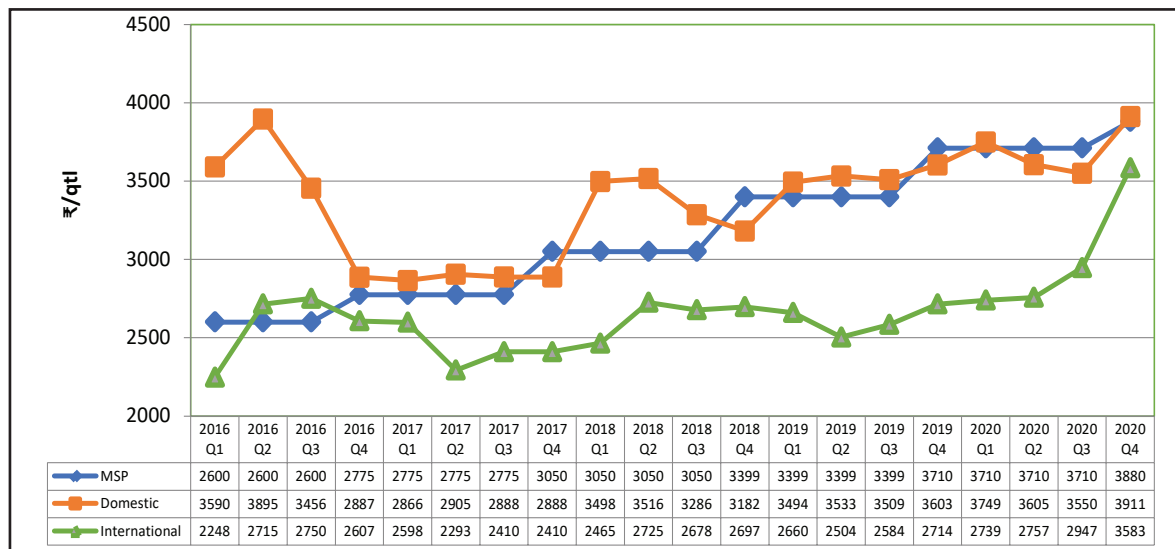
Note: * For 2020-21 (April- December)

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS)

Comparative Price Trends

4.46 Domestic wholesale prices of soybean have remained higher than the international prices during 2016 to 2020 (Chart 4.21). MSP of soybean has been continuously lower than domestic wholesale prices except 2017 (Q4), 2018 (Q4), 2019 (Q4) and 2020(Q2 and Q3). The domestic wholesale price of soybean started falling 2016 (Q2) onwards. During 2017, the domestic prices remained stable and started rising in 2018. Domestic price has been gradually rising since the beginning of 2019, though some temporary fall was seen in 2020 Q2 and Q3, probably owing to COVID-19 pandemic related disruptions in supply chain. Domestic prices, however, improved in Q4 of 2020 and were marginally higher than the MSP.

Chart 4.21: MSP, Domestic and International Prices of Soybean, 2016 to 2020



Source: 1. Directorate of Economics and Statistics for MSP

2. AGMARKNET for domestic wholesale prices

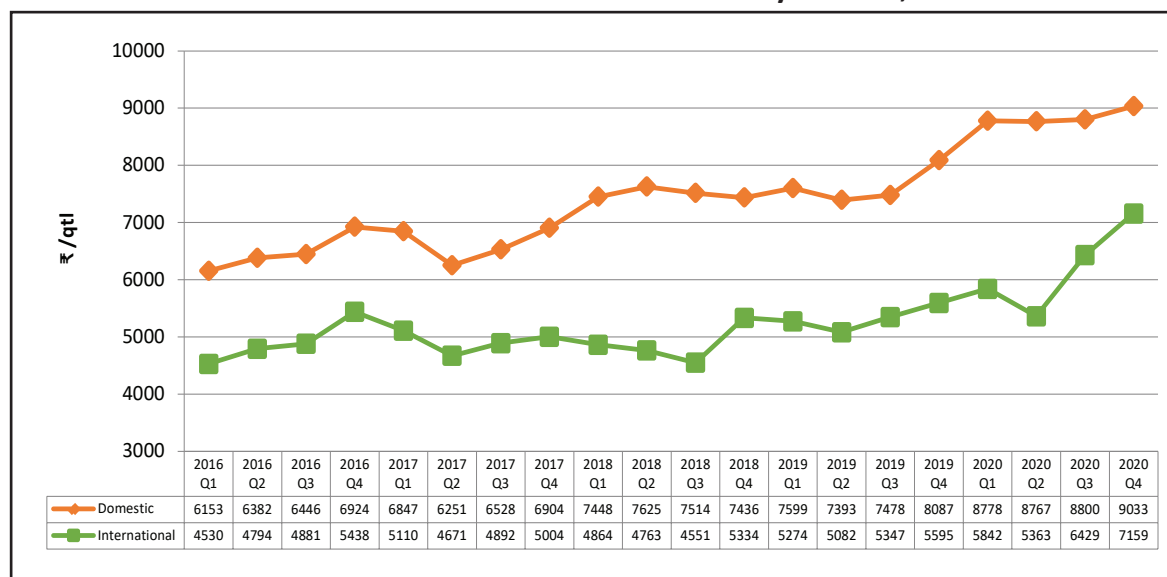
3. USDA for international prices

Price Policy for KHARIF CROPS



4.47 Domestic wholesale price of soybean oil has been higher than international price during 2016 to 2020 and the gap has widened since the beginning of 2018 (Chart 4.22). It is also observed that the soybean oil prices have been less volatile as compared to prices of soybean seed, the coefficient of variation of domestic seed prices being 10 percent as compared to 12.1 percent for soybean oil.

Chart 4.22: Domestic and International Prices of Soybean Oil, 2016 to 2020



Note: Argentina Up River, FOB Crude: IGC

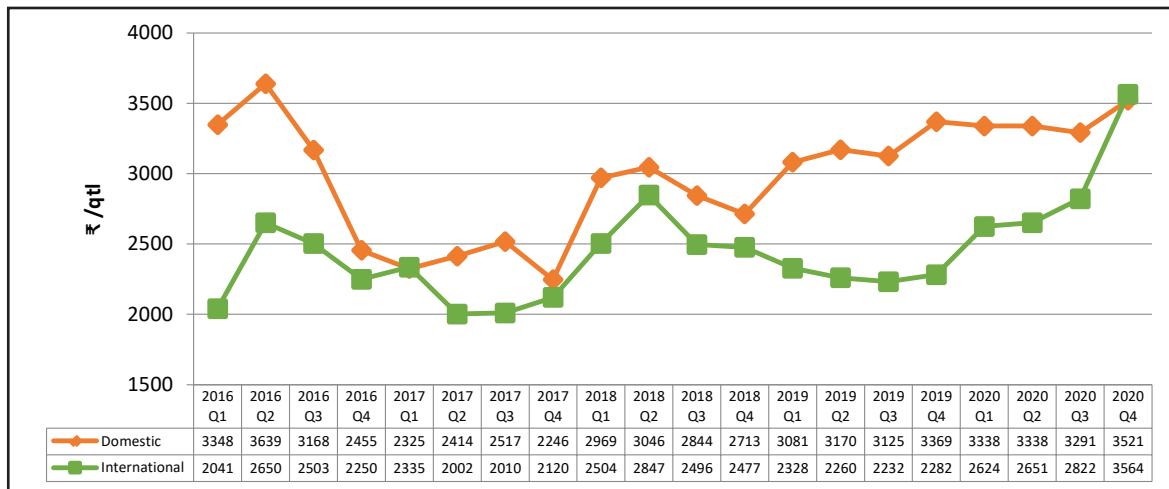
Source: 1. Directorate of Economics and Statistics for domestic wholesale prices
2. USDA for international prices

4.48 As seen in Chart 4.23, domestic wholesale prices of soybean meal, similar to soybean oil, have been continuously higher than international prices from 2016 to 2020, except 2017(Q1) and 2020(Q4), indicating that Indian soybean meal exports are not competitive in the global market. With a view to make Indian exports competitive in soybean meal, Government had allowed certain incentives which include MEIS of 10 percent on export of soybean meal. However, once this benefit expired in March 2019, the exports of soybean meal subsequently fell to one-third of previous year volumes in 2019-20 (Chart 4.22). As a long-term strategy, India should take advantage of non-GMO soybean and target niche markets.

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Chart 4.23: Domestic and International Prices of Soybean Meal, 2016 to 2020



Source: 1. Solvent Extractors Association for Domestic Wholesale Prices
2. USDA for International Prices

Groundnut

Global Production and Trade

4.49 As per USDA, global production of groundnut was 46.6 million tonnes in TE2019-20, out of which 8.4 percent was traded. China, India, USA and Nigeria are the major producers of groundnut. Groundnut oil is the major derivative of groundnut. World production of groundnut oil was around 6 million tonnes in TE2019-20, out of which only 5.2 percent was traded. It shows that most of groundnut oil is produced for self-consumption. China (49.7%) and India (19.5%) produce nearly 70 percent of the total world production. Despite being the largest producer, China is the largest importer of groundnut oil with a share of 60.6 percent in global imports, followed by EU (23.4%) in TE2019-20. As regards exports, India, China and USA export small quantities of groundnut oil.

India's Trade

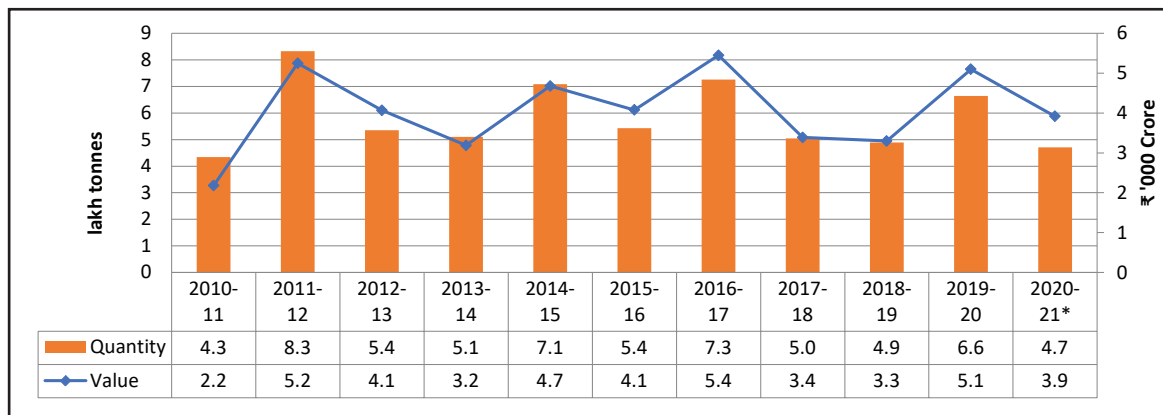
4.50 Chart 4.24 illustrates the trends in groundnut exports from India for the period 2010-11 to 2020-21 (till December 2020). While export volumes and earnings have been somewhat volatile in the last decade, on an average, India exported about 5.9 lakh tonnes of groundnut every year during the period 2010-11 to 2019-20. India's exports of groundnut are mainly to South-East Asian nations, Gulf countries and South Asian countries like Nepal, Pakistan and Sri Lanka, where India has freight advantage in comparison to other competitors like Argentina and USA. This freight

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advantage favours exports from India which otherwise has domestic prices higher than international prices. Further, exports of groundnut to all countries except Russia are permitted subject to compulsory registration of contracts with APEDA, along with controlled toxic compound Aflatoxin level certificate given by laboratories nominated by APEDA.

Chart 4.24: India's Export of Groundnut, 2010-11 to 2020-21



Note: * For 2020-21 (April- December)

Source: Directorate General of Commercial Intelligence and Statistics (DGCIIS)

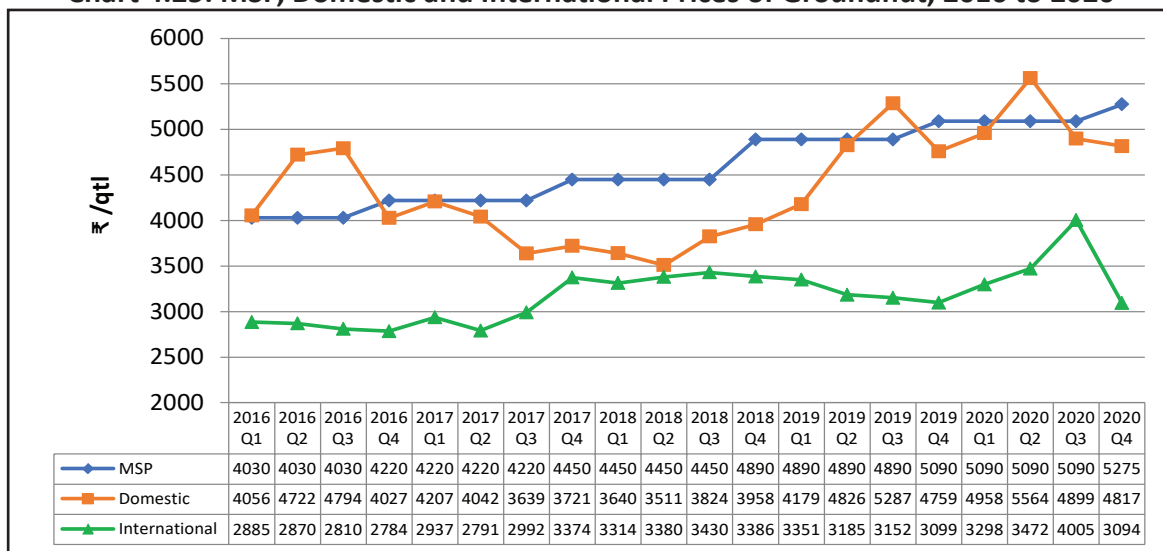
Comparative Price Trends

4.51 During 2016 to 2020, domestic prices of groundnut have been higher than international prices (Chart 4.25). From 2016 to 2018 (Q2), the gap between the domestic and international prices of groundnut narrowed down but the difference widened thereafter as domestic prices sharply rose in 2019 even though international prices fell during that period. In 2020, international prices of groundnut also started moving up and the average mark-up of domestic prices of groundnut over international prices stood at ₹1,592 per quintal. The MSP of groundnut was higher than domestic prices during the period 2016-2020 except 2016 (Q1, Q2& Q3), 2019(Q3) and 2020 (Q2) while MSP has been higher than international prices for the entire period.



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Chart 4.25: MSP, Domestic and International Prices of Groundnut, 2016 to 2020



Note: US Farm Price, in Shell

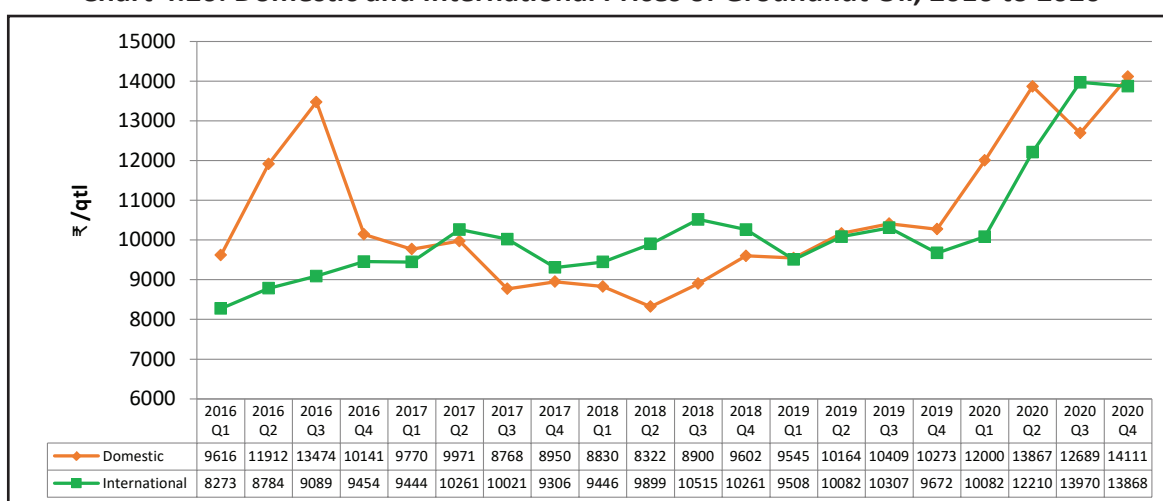
Source: 1. Directorate of Economics and Statistics for MSP

2. AGMARKNET for domestic wholesale prices

3. USDA for international prices

4.52 Domestic prices of groundnut oil have moved in line with international prices except in the year 2016, when domestic prices sharply rose during first three quarters and then reduced to near-international prices in Q4 of the same year (Chart 4.26). World prices, which were higher than domestic prices during 2017(Q2) to 2018(Q4), remained below the domestic prices in subsequent period except in 2020(Q3). The correlation between international and domestic price of groundnut oil during 2017-2020 was quite high at 0.82.

Chart 4.26: Domestic and International Prices of Groundnut Oil, 2016 to 2020



Note: South East Mills FOB; Tank Cars Crude; United States Department of Agriculture (USDA)

Source: 1. Directorate of Economics and Statistics for Domestic Wholesale Prices

2. USDA for International Prices

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Sunflower

Global Production and Trade

- 4.53 World production of sunflower seed, as per USDA, was about 51.1 million tonnes in TE2019-20, out of which only 6 percent was traded. Ukraine (29.5%) and Russia (25%) produce more than half of total world production of sunflower seed. Other major producers are EU (19.1%) and Argentina (6.9%). The EU (18.3%) and Russia (18.3%) are the largest exporters, while Turkey (37.5%) and EU (25.2%) were the largest importers of sunflower seed in TE2019-20.
- 4.54 The global production of sunflower oil was 19.8 million tonnes in TE2019-20, out of which about 58 percent was exported. Ukraine (52.5%) and Russia (25.5 %) exported more than three-fourth of the global exports of sunflower oil. EU is the largest importer with 20 percent share, followed by Turkey (6.6%).
- 4.55 As per the USDA estimates, the global oilseed production in 2020-21 is expected to increase by 3.3 percent, to 595.1 million tonnes. Brazil and USA would be the growth engines for this increased production of oilseeds. Sharp increase is anticipated especially in soybean production in 2020-21 in these two countries. As regards vegetable oils, its global production in 2020-21 is forecast marginally up by 1.1 percent at 209.6 million tonnes, as compared to previous year. On the other hand, global oilmeals production is forecast up by 2.3 percent in 2020-21, at 352.6 million tonnes, largely driven by increase in soybean meal production. Global trade is also expected to receive a boost from this higher production. As on 28th January, 2021, cumulative global US soybean shipments have hit a record high of 47.5 million tonnes driven by the faster-than-normal pace of shipments to China.

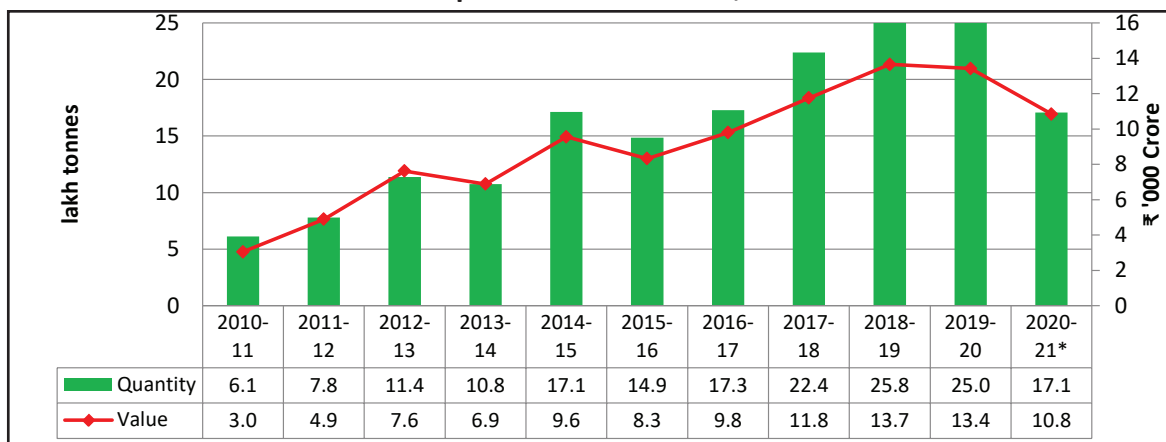
India's Trade

- 4.56 As per DGCIS, India exports small quantities of sunflower seed, whereas imports are nil. However, imports of sunflower oil have increased substantially, from a small quantity of about 6.1 lakh tonnes in 2010-11 to 17.1 lakh tonnes in 2014-15 and further to 25.8 lakh tonnes in 2018-19 (Chart 4.27). The import bill of sunflower oil has also commensurately increased from ₹3 thousand crore in 2010-11 to ₹9.6 thousand crore in 2014-15 and further to ₹13.7 thousand crore in 2018-19. Imports of sunflower oil were 25 lakh tonnes in 2019-20 and about 17 lakh tonnes in 2020-21 (till December 2020).



Price Policy for KHARIF CROPS

Chart 4.27: India's Import of Sunflower Oil, 2010-11 to 2020-21



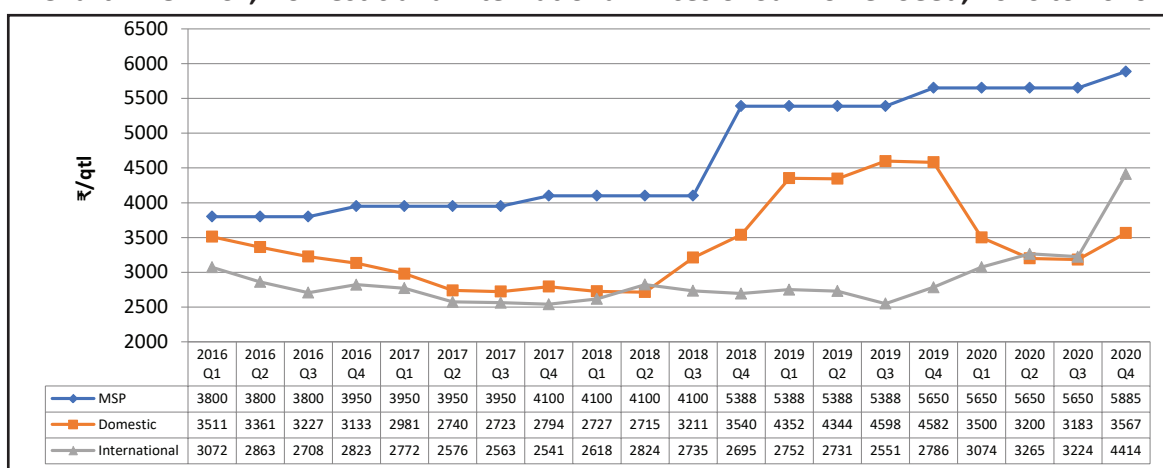
Note: * For 2020-21 (April- December)

Source: Directorate General of Commercial Intelligence and Statistics (DGCIS)

Comparative Price Trends

4.57 Chart 4.28 depicts the trends in quarterly domestic wholesale prices of sunflower seed, MSP and international prices for the period 2016-2020. Domestic wholesale prices of sunflower seed moved in tandem with international prices during 2016 – 2018(Q2), after which domestic prices started rising till 2019(Q3) and the wedge between domestic and international prices widened. It was only from 2019(Q3) onwards that international prices rose and converged with domestic prices in 2020 but in 2020(Q4), world prices rose sharply and were about 24 percent higher than domestic price. With reference to domestic market price vis-à-vis MSP, the domestic prices have remained below MSP throughout the period 2016-20, thereby implying need for strengthening procurement, reducing cost of production and incentivizing domestic production to curtail imports of sunflower oil.

Chart 4.28: MSP, Domestic and International Prices of Sunflower Seed, 2016 to 2020



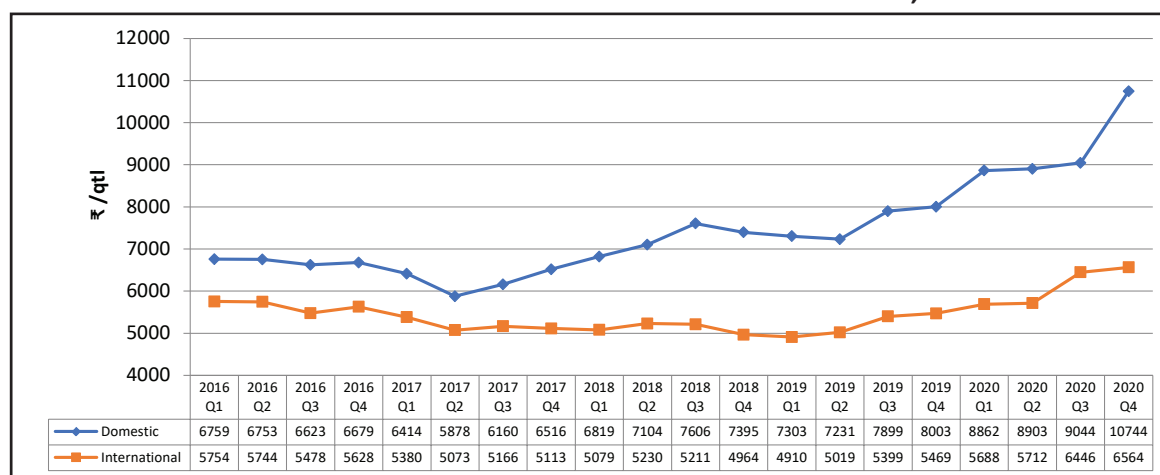
Source: 1. Directorate of Economics and Statistics for MSP
 2. AGMARKNET for domestic wholesale prices
 3. USDA for international prices

Price Policy for KHARIF CROPS



4.58 The domestic prices of sunflower oil have been higher than the international prices during the entire period of 2016-2020 and India is a net importer of sunflower oil (Chart 4.29). While the movement in domestic and international prices of sunflower oil were highly correlated till 2017(Q2), the former has increased sharply thereafter and the mark-up of domestic over international prices consistently increased from an average of ₹2,110 per quintal in 2018 to ₹2,410 per quintal in 2019 and further to ₹3,286 per quintal in 2020.

Chart 4.29: Domestic and International Prices of Sunflower Oil, 2016 to 2020



Note: EU FOB NW Euro; Oil World

Source: 1. Directorate of Economics and Statistics for domestic wholesale prices

2. USDA for international prices

Trade Policy

4.59 India is the one of the largest importer of edible oils, which constituted about 40 percent (in value) of total agri-imports in 2019-20. In order to harmonize the interests of farmers, processors and consumers as well as regulate large import of edible oils to the extent possible, import duty structure on edible oils has been reviewed from time to time. Imports of edible oils were under negative list and controlled through canalization until mid-1990s. In 1994-95, India liberalized edible oil imports in a phased manner and import of palmolein was placed under OGL subject to 65 percent import duty. Subsequently, imports of other edible oils were also placed under OGL and import duty was as high as 80 percent on crude oil and 90 percent on refined edible oils during early-2000s. The import duties on edible oils were reduced to zero percent for crude oils and 7.5 percent for refined oils with effect from 1st April, 2008. The import duty on crude edible oils was increased to 2.5 per cent in 2013, which was further increased to 7.5 percent in December 2014 and 12.5 percent in September 2015. Import duty on refined edible oils was increased from 7.5 percent to 10 percent in January 2014, which was further increased to 15



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percent in December 2014 and 20 percent in September 2015. However, in the case of palm oil, import duty that was imposed at 65 percent in 1994, was reduced on crude palm oil to 7.5 percent and on refined palm oil to 15 percent vide notification dated 30th September, 2016. Government increased import duty on crude soybean oil from 12.5 percent to 17.5 percent in August 2017. Similarly, on crude palm oil, import duty was raised from 7.5 percent to 15 percent and on refined palm oil from 15 percent to 25 percent in August 2017.

- 4.60 In order to improve self-sufficiency in edible oils and ensure remunerative prices to oilseeds farmers in the country, major changes in the import duty structure of edible oils were introduced in November 2017. Import duty on crude soybean oil was increased from 17.5 percent to 30 percent and it was further increased to 35 percent in June 2018, while import duty on refined soybean oil was raised from 20 percent to 35 percent in November 2017 and 45 percent in June 2018. Similarly, import duty on crude sunflower oil was increased to 35 percent in June 2018 while that on refined sunflower oil was increased to 35 percent in March 2018 and 45 percent in June 2018. Import duty on crude cottonseed oil was raised from 30 percent to 35 percent in June 2018 and on refined cottonseed oil from 35 percent to 45 percent in June 2018. Import duty on crude palm oil (CPO) of edible grade was raised from 15 percent to 30 percent, in November 2017 and 44 percent in March 2018 but reduced to 40 percent in January 2019. Similarly, import duty on RBD palmolein was increased from 25 percent to 40 percent in November 2017 and 54 percent in March 2018 but reduced to 45 percent for imports from Malaysia and 50 percent for shipments from Indonesia in January 2019. However, a safeguard duty of 5 percent was imposed on imports of RBD palmolein from Malaysia under India-Malaysia Comprehensive Economic Cooperation Agreement (IMCECA) from 4th September, 2019 but imports under ASEAN agreement did not attract 5 percent safeguard duty. With effect from 1st January, 2020, the import duty on refined palm oils was lowered by the Government from 50 percent to 45 percent while that on crude palm oil was reduced from 45 percent to 37.5 percent under Association of Southeast Asian Nations (ASEAN) agreement and India-Malaysia Comprehensive Economic Cooperation Agreement (MICECA) agreement. With effect from 8th January, 2020, import policy of refined palm oil is amended from 'Free' to 'Restricted' category. Further vide notification dated 27th November, 2020 the Basic Custom Duty (BCD) rate on crude palm oil was reduced to 27.5 percent from the previous rate of 37.5 percent in order to control the rise in price of palm oil and allow greater availability of oil in the market for consumption. This is the second time in the year 2020 that the Government has cut import duty on palm oil.
- 4.61 In the Union Budget 2021-22, the basic import duty on crude palm oil has been cut from 27.5 percent to 15 percent. In addition, 17.5 percent Agriculture Infrastructure and Development Cess has been imposed on the imports to arrange resources to improve agricultural infrastructure. The tax increase will narrow the duty gap between palm oil and other edible oils, which could reduce India's palm oil imports

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and potentially put pressure on world palm oil prices. India also imposed 20 percent cess on crude soybean and sunflower oil imports but reduced basic customs duty on both the commodities from 35 percent to 15 percent, effectively keeping the import duty unchanged. Import duties on major edible and crude oils as on 2nd February, 2021 are listed in Annex Table 4.6.

- 4.62 Export of edible oils was initially prohibited for a period of one year in March 2008, which was extended from time to time. With effect from 6th February, 2015, export of rice bran oil in bulk has been permitted. With effect from 6th April, 2018, exports of all edible oils except mustard oil were made free without quantitative ceiling; pack size etc, till further orders. Export of mustard oil is permitted in packs of up to 5 kg with a Minimum Export Price (MEP) of US\$900 per tonne.
- 4.63 Oilseed exports continue to be under 'free category' except breeder/foundation/wild variety seeds that are not allowed for export from India. As regards tariff rates, import of groundnut and sunflower seed are under OGL with an import duty of 30 percent while import duty on soybean seed is 45 percent.

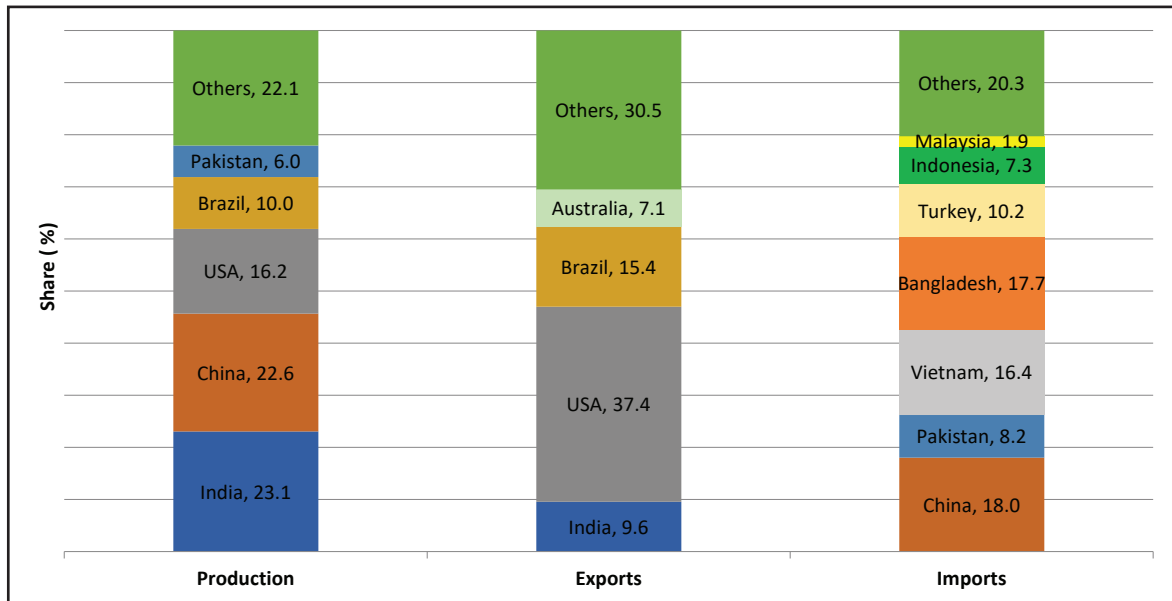
Cotton

Global Production and Trade

- 4.64 Global production of cotton has increased from 23 million tonnes in 2016-17 to 26.6 million tonnes in 2019-20. India has been major cotton producer in the world for last few decades and India produced 23.1 percent of the global cotton in TE2019-20, closely followed by China (22.6%), USA (16.2%), Brazil (10%) and Pakistan (6%). Chart 4.30 illustrates the shares of major producers, exporters and importers of cotton in the world in TE2019-20. About 34.2 percent of world cotton production was traded in TE2019-20 and USA was the largest exporter with a share of 37.4 percent, followed by Brazil (15.4%), India (9.6%) and Australia (7.1%). China is the largest importer with a share of 18 percent followed by Bangladesh (17.7%) and Vietnam (16.4%).



Chart 4.30: Global Players in Cotton Markets, TE2019-20



Source: United States Department of Agriculture (USDA)

4.65 China is a major importer of fine quality cotton. According to USDA, China's import origins of cotton have shifted from Australia and Brazil to USA recently, possibly as a consequence of the Phase One Agreement. Despite higher prices of cotton in USA relative to Brazil and India, USA sales and shipments to China are expected to see major increase in 2020-21. This implies that despite competitive prices of raw cotton, India would not be able to leverage its freight advantage by exporting its cotton to China in the coming years.

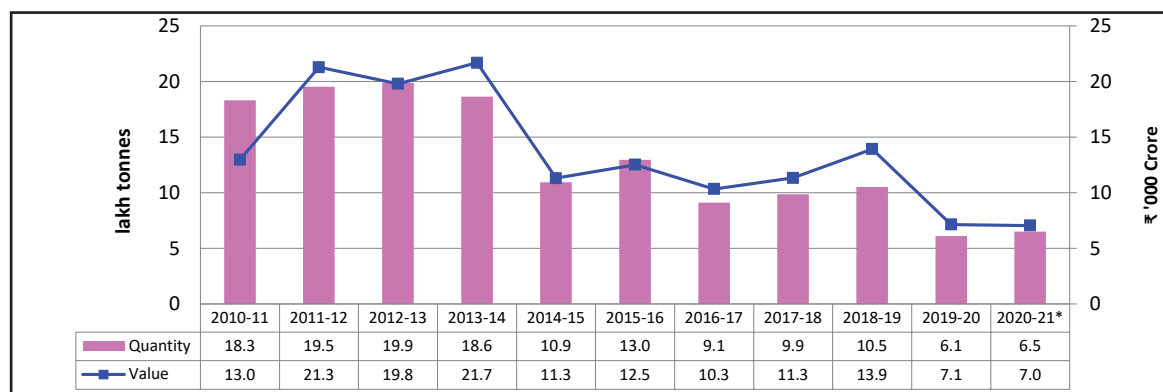
India's Trade

4.66 India being a global leader in cotton production is also a major exporter of raw cotton. Chart 4.31 shows the trend in cotton exports of India (in value and volume terms) during the period 2010-11 to 2020-21 (till December 2020). During this decade, the exports of cotton have gradually declined and average volume of cotton exports declined from 17.5 lakh tonnes in the first half of the decade i.e. 2010-11 to 2014-15 to 9.7 lakh tonnes for the period 2015-16 to 2019-20. This is worrisome, as exports have declined despite domestic prices of cotton trending below international prices. The sharp fall in exports of Indian cotton in 2019-20 as compared to previous year has been mainly on account of reduced exports to China, Vietnam, Pakistan and Thailand. These countries have been the major export destinations of Indian cotton in 2019-20 and exports to these countries declined by over 60 percent in 2019-20 over 2018-19. However, cotton exports are expected to recover in 2020-21 as 6.5 lakh tonnes of cotton has already been exported in this financial year till December 2020, surpassing the level of 6.1 lakh tonnes exported in 2019-20.

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Chart 4.31: India's Exports of Cotton, 2010-11 to 2020-21



Note: * For 2020-21 (April- December)

Source: Directorate General of Commercial Intelligence and Statistics (DGCISS)

Trade Policy

4.67 Cotton exports were placed on restricted category in May 2010 but they were allowed at zero export duty in August 2010 with the restriction that the contracts for exports are registered with DGFT prior to shipment. Cotton exports are currently free and the registration requirement for export has been dispensed with vide notification dated 08th December, 2014. Import duty was reduced to zero in July 2008 and it continues to be at the same level.

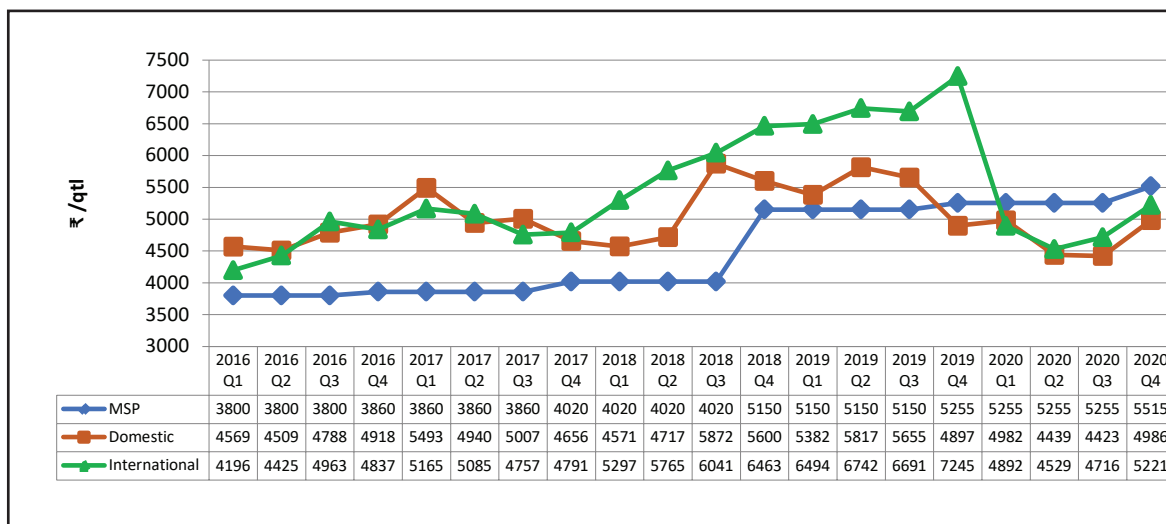
Comparative Price Trends

4.68 Domestic wholesale and international prices of raw cotton have been higher than MSP till 2019 (Chart 4.32). International prices of raw cotton reached an all-time high of ₹7,245 per quintal in 2019 (Q4). World cotton prices recorded a steep decline in Q1 of 2020, perhaps attributable to the COVID-19 related lockdowns, disrupting the supply chains. Domestic wholesale prices on the other hand, started dropping below MSP in 2019(Q4) and have continued to be below the MSP in 2020 as well with some improvements in Q4 of 2020.



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Chart 4.32: MSP, Domestic and International Prices of Raw Cotton, 2016 -2020



Source: 1. Directorate of Economics and Statistics for MSP
 2. AGMARKNET for computation of weighted average domestic wholesale prices
 3. World Bank for international prices

Global Outlook

- 4.69 As per the OECD-FAO Agricultural Outlook 2020-2029, global agricultural production is projected to increase over the coming decade, in response to growing demand, albeit at a slower rate than observed over the previous decades. Most of the growth in production is projected to occur through productivity improvements, from more intensive use of inputs, through improved crop varieties and technical efficiency improvements, which will lead to decline in real commodity prices.
- 4.70 The OECD-FAO Agricultural Outlook projects global rice production to reach 582 million tonnes in 2029 and Asia is projected to contribute bulk of additional production (61 million tonnes) during the outlook period. The highest growth is expected in India, while China is projected to grow at a slower pace. Global maize production is projected to grow by 193 million tonnes to 1315 million tonnes over the next decade, with the largest increase expected in China, the United States, Brazil, Argentina, and Ukraine. Global production of other coarse grains is projected to reach 319 million tonnes by 2029.
- 4.71 Over the coming decade, global supply of pulses is projected to increase by 16 million tones and more than half of this increase is expected to come from Asia, particularly India. Rising demand for pulses will lead to increase in trade to 17 million tonnes and world prices are expected to increase in nominal terms over the coming decade.
- 4.72 During the period 2020-29, world oilseeds production is projected to increase and Brazil and USA will remain major producers. Global demand for vegetable oil is

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projected to rise and will put upward pressure on vegetable oil prices. The increase in protein meal utilization is projected to be lower compared to the past decade.

- 4.73 World cotton production is projected to reach about 30 million tonnes driven by both, area expansion and yield improvement. India will continue to be the largest producer in the world and global players will remain the same. Global cotton prices are expected to increase in nominal terms but are expected to decline in real terms over the projection period due to competition from synthetic fibres.

Recapitulation

- 4.74 Despite COVID-19 pandemic, India's agricultural exports remained largely unaffected, registering a growth rate of 15.8 percent in Apr-Dec 2020 over corresponding period last year. The export earnings were buoyant also owing to steep increase in global commodity prices, which is due to steady normalization of demand with most countries unlocking their economies post COVID-19. As a result India had a net trade surplus in agriculture. The OECD outlook also expects India to experience a reversal in net-importing trend of pulses by 2025 and restructure the global pulses trade. However, India needs a long-term strategy to curb high import dependence on edible oils, which presently constitutes about 40 percent of the total agri-import bill. It is of vital importance that there should be synchronization between India's agricultural trade policy, procurement policy and price policy, which will further incentivize rational cropping patterns and boost agricultural exports of the country.



Chapter 5

Costs, Returns and Inter-Crop Parity

Chapter 5

- 5.1 The Commission considers the cost of production and other important factors such as demand-supply situation and price trends in domestic and world markets, inter-crop price parity, terms of trade between agriculture and non-agriculture sectors, likely impact of MSP on the economy, rational utilization of land, water and other production resources, and a minimum of 50 percent as the margin over cost of production, while recommending MSPs of mandated kharif crops.
- 5.2 The Commission uses cost estimates provided by the Directorate of Economics and Statistics (DES), Ministry of Agriculture and Farmers Welfare, Government of India compiled under 'Comprehensive Scheme (CS) for Studying the Cost of Cultivation of Principal Crops in India'. Since CS data is available up to crop season 2018-19, it needs to be projected for crop season 2021-22. Based on CS data, crop-wise and State-wise projections of cost of cultivation (CoC) are made for the ensuing season.
- 5.3 The projected CoC estimates for kharif crops for the 2021-22 crop season are based on the latest three year actual cost estimates from 2016-17 to 2018-19 for most of the States. However, for paddy, jowar, maize, tur, moong, urad, groundnut and cotton in Andhra Pradesh and Telangana, tur and moong in Bihar, urad in Gujarat and Rajasthan, soybean and sesamum in Karnataka, moong and groundnut in Madhya Pradesh and Uttar Pradesh, ragi in Maharashtra and Odisha, ragi, tur, moong and sesamum in Tamil Nadu, soybean in Telangana and moong in West Bengal, CoC estimates are based on actual cost estimates available for the latest two years viz. 2017-18 and 2018-19, as data for 2016-17 were not available. In case of sunflower in Odisha, CoC estimates are based on actual cost estimates available only for 2018-19. The CoC estimates are not projected for a crop in the State, where either share of the State in all-India production or share of a particular crop in total production of the crop group in the State is negligible or number of sample holdings under CS for the crop is inadequate.
- 5.4 The estimates of CoC projections capture movement in overall input cost separately for the year 2021-22 over each of three years viz. 2016-17, 2017-18 and 2018-19 where projections are based on three years, two years viz. 2017-18 and 2018-19 where projections are based on these two years, and one year viz. 2018-19 where projections are based on one year for each State.



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- 5.5 An assessment of likely changes in input costs for the crop year 2021-22 with reference to each of the three consecutive years ending with 2018-19 where projections are based on three years, two years ending with 2018-19 where projections are based on two years, and one year viz. 2018-19 for Odisha in sunflower, is made by constructing the Composite Input Price Indices (CIPIs) (base 2011-12=100) for each State. The CIPIs are based on latest prices of different inputs like human labour, bullock labour, machine labour, fertilisers and manures, seeds, pesticides and irrigation as per latest data from Labour Bureau, Ministry of Labour and Employment, State Governments and Office of the Economic Adviser, Ministry of Commerce and Industry. Based on the CIPIs, the Commission projects State-wise CoC A_2 , A_2+FL and C_2 for each mandated crop.
- 5.6 The State-wise cost of production (CoP) A_2 , A_2+FL and C_2 estimates for the mandated crops are then derived by using respective projected CoC estimates, ratio of main product (MP) to gross value of output (GVO) and projected yield, for each crop. Subsequently, all-India estimates of CoP A_2 , A_2+FL and C_2 are derived based on State-wise CoP of crops and their production shares in total production. These projected all-India CoP estimates are considered by the Commission while formulating price policy recommendations.
- 5.7 The Commission has undertaken cost projection exercise under certain implicit assumptions. One, it is assumed that fixed cost components would not, in all likelihood, undergo any significant change in the intervening period between 2018-19 for which actual cost estimates are available and the year 2021-22 for which cost projections are made. Two, since yield varies from year to year due to various factors, three-year average yield, where projections are based on three years, and two-year average yield, where projections are based on latest two years, has been taken for smoothing fluctuations in yield and hence in CoP. However, in cases where there are wide fluctuations in the yield, Olympic average yield (Olympic average yield is calculated by dropping the highest and the lowest yield from latest five year yields and calculating the average of the remaining 3-year yield) has been used. Due to inadequate sample size and large variations in CS data, the yield of ragi in Maharashtra has been projected based on time series of yield under Comprehensive Scheme, while yield of jowar, ragi and tur in Tamil Nadu, jowar, moong, tur and urad in Telangana, urad in Chhattisgarh, nigerseed and sunflower in Odisha, and sesamum in Karnataka, has been projected based on yield data published in 'Agricultural Statistics at a Glance 2019' by Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare, Government of India.

Costs and Returns of Kharif Crops during TE2018-19

- 5.8 The all-India average costs, GVO and gross returns during TE2018-19 in respect of mandated kharif crops have been analysed and are given in Table 5.1 and Chart 5.1. It is pertinent to mention that gross value of output (GVO) is estimated at prevailing market prices of main product and by-products during harvest season in village/

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- cluster of villages where the crops are grown and harvested. Among all crops, during TE2018-19, per hectare all-India average CoC A_2 , A_2 +FL and GVO were the highest for cotton at ₹47,365, ₹58,742 and ₹84,792, respectively, whereas, these were lowest for nigerseed at ₹7162, ₹16,022 and ₹14,236, respectively.
- 5.9 Per hectare gross returns over A_2 +FL cost were the highest for cotton at ₹26,050, followed by groundnut (₹22,241), tur (₹21,220), paddy (₹20,973), maize (₹15,219), and lowest for moong at ₹6,262, while nigerseed has a net loss of ₹1,786 per hectare. Per hectare returns over A_2 cost were highest for cotton at ₹37,427, followed by paddy (₹32,516), groundnut (₹31,853), tur (₹29,261), maize (₹24,728), and lowest for nigerseed (₹7,074). It can be seen that all-India average gross returns as percentage of CoC A_2 +FL were highest at 55.6 percent for tur, followed by paddy (44.7%), cotton (44.3%), sunflower (44.3%), and lowest for ragi (17.2%), while it was negative (-)11.1 percent for nigerseed. The average gross returns as percentage of CoC A_2 were highest at 122.6 percent in bajra, followed by sesamum (118%), nigerseed (98.8%), tur (97.1%), moong (96.7%), and lowest at 53.5 percent in soybean. Chart 5.1 shows the gross returns over A_2 and A_2 +FL cost for all mandated kharif crops. It is evident that there is a need for enhancing productivity, reducing costs and ensuring better prices to farmers growing nutri-cereals, pulses and oilseeds for improving profitability. The details of State-wise average gross returns over actual CoC A_2 and A_2 +FL of mandated kharif crops during TE2018-19 are given in Annex Table 5.1.
- 5.10 Among cereals, although maize had lower CoC than paddy, per hectare gross returns over both A_2 and A_2 +FL CoC for paddy were higher than respective returns for maize due to reasonably higher yield and prices of paddy than maize. Nutri-cereals have lower average gross returns largely due to significantly low productivity. Among nutri-cereals, returns over CoC A_2 +FL were highest for jowar (₹7,896/ha), followed by bajra (₹7,571/ha), and lowest for ragi (₹6,784/ha), whereas, returns over CoC A_2 were maximum in bajra (₹19,082/ha), followed by ragi (₹17,319/ha), and minimum in jowar at ₹15,766 per hectare. Having even lowest market price among nutri-cereals, returns as percentage of CoC from bajra were higher than jowar and ragi due to reasonably higher yield of bajra.
- 5.11 Among pulses, average gross returns per hectare over A_2 and A_2 +FL CoC were highest for tur, followed by urad, and lowest for moong. Urad has significantly lower cost of cultivation than tur but returns from tur were higher than urad due to significantly higher yield in tur. Similarly, moong has significantly lower cost of cultivation than urad, but returns from urad were higher than moong due to reasonably higher yield in urad.
- 5.12 In case of oilseeds, per hectare gross returns over CoC A_2 +FL were highest for groundnut (₹22,241), followed by sunflower (₹9,277), soybean (₹8,762), and lowest for sesamum (₹8,452), with negative returns for nigerseed. Returns over CoC A_2 were highest for groundnut (₹31,853), followed by sesamum (₹16,750), soybean



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(₹13,508), sunflower (₹12,556) and lowest for nigerseed. The CoC in soybean, sunflower and sesamum was lower than groundnut, but higher yield and better prices of groundnut led to significantly higher returns than soybean and sunflower. Although nigerseed has lowest CoC, returns over A_2 CoC were lowest, while returns over A_2+FL CoC, were negative mainly due to low yield levels. Despite highest CoC, cotton recorded higher gross returns than paddy and maize mainly due to higher prices, higher yield and better prices than nutri-cereals, soybean, sunflower, tur, urad, groundnut, and substantially higher yield than moong, sesamum and nigerseed.

- 5.13 Due to assured MSP, low production risks and high profitability, paddy production has increased significantly in the country, while production of nutri-cereals and oilseeds has declined or remained almost stagnant due to lower yields and market prices. Crop diversification from paddy to nutri-cereals, pulses and oilseeds is needed to improve farm income, nutritional security, sustainability and maintain demand-supply balance. In order to enhance farmers' income, efforts are needed to reduce cost of cultivation, improve yield, ensure remunerative prices and provide assured market to farmers, particularly in nutri-cereals, pulses and oilseeds.

Table 5.1: All-India Average Costs and Gross Returns over Actual Cost of Cultivation of Kharif Crops (Average from 2016-17 to 2018-19)

Crop	CoC A_2	CoC A_2+FL	GVO	Gross Returns over CoC A_2		Gross Returns over CoC A_2+FL	
	₹/ha			₹/ha (Col.4-Col.2)	Percent (Col.5/ Col.2)*100	₹/ha (Col.4- Col.3)	Percent (Col.7/ Col.3)*100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
A. Cereals							
Paddy	35,346	46,889	67,862	32,516	92.0	20,973	44.7
Jowar	22,463	30,333	38,229	15,766	70.2	7,896	26.0
Bajra	15,567	27,078	34,649	19,082	122.6	7,571	28.0
Maize	29,541	39,050	54,269	24,728	83.7	15,219	39.0
Ragi	28,879	39,413	46,197	17,319	60.0	6,784	17.2
B. Pulses							
Arhar (Tur)	30,148	38,188	59,408	29,261	97.1	21,220	55.6
Moong	13,596	20,481	26,743	13,147	96.7	6,262	30.6
Urad	16,939	22,023	30,375	13,436	79.3	8,352	37.9
C. Oilseeds							
Groundnut	42,708	52,319	74,561	31,853	74.6	22,241	42.5
Soybean	25,254	30,001	38,763	13,508	53.5	8,762	29.2
Sunflower	17,685	20,964	30,241	12,556	71.0	9,277	44.3
Sesamum	14,197	22,495	30,947	16,750	118.0	8,452	37.6
Nigerseed	7,162	16,022	14,236	7,074	98.8	-1,786	-11.1
D. Commercial Crop							
Cotton	47,365	58,742	84,792	37,427	79.0	26,050	44.3

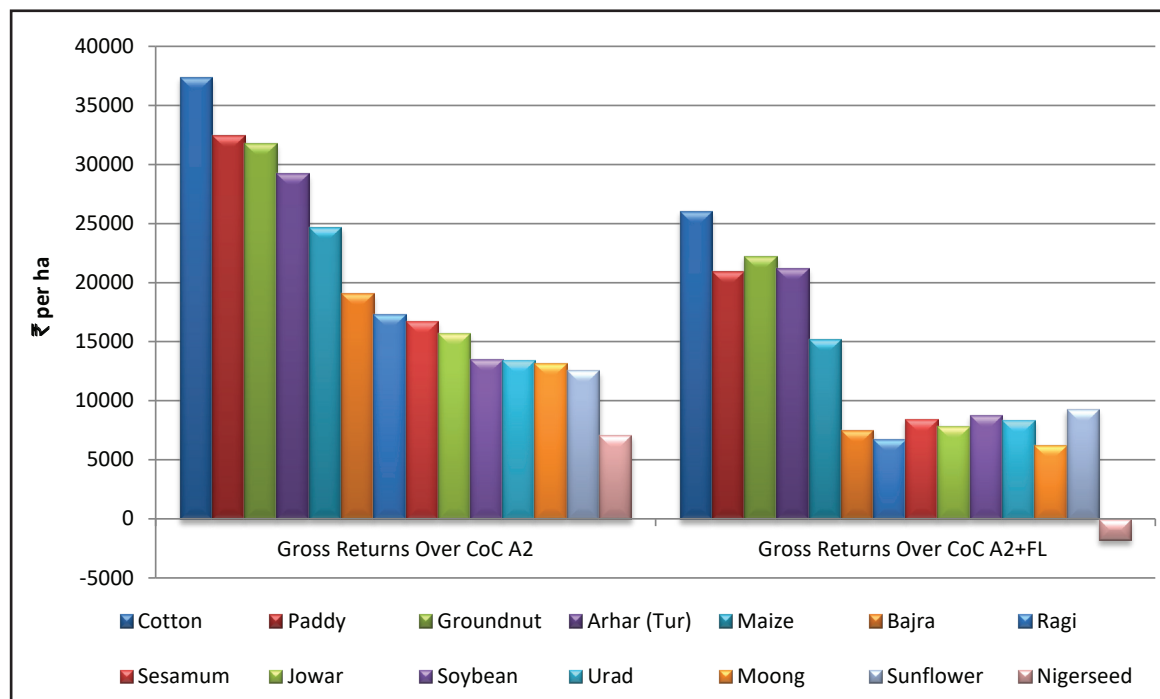
Note: All-India CoC, GVO and gross returns of a crop are weighted average of respective CoC, GVO and gross returns of projected States

Source: CACP using CS data

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Chart 5.1: All-India Average Gross Returns of Kharif Crops, TE2018-19



Note: All-India CoC, GVO and gross returns of a crop are weighted average of respective CoC, GVO and gross returns of projected States

Source: CACP using CS data

Movement in Agricultural Wages and Farm Input Prices

5.14 Growth in average daily wage rates of agricultural labour during kharif season in major States and at all-India level at current prices and constant prices (2020=100) during 2018 to 2020 are given in Table 5.2. At all-India level, agricultural average daily wage rate (at current prices) increased by 6.4 percent in 2018, 4.6 percent in 2019 and 5 percent in 2020, while real wages grew by 5.1 percent in 2018, but declined by 2.6 percent in 2019 and 1.2 percent in 2020. The highest increase in average daily wage rate (at current prices) in 2020 over 2019 was recorded in Madhya Pradesh (10.7%), followed by Odisha (8%), West Bengal (7.9%), Tamil Nadu (7.8%), and lowest in Rajasthan (0.2%), while it recorded a decline of 0.3 percent in Haryana. At constant prices, decline in average daily wage rate was highest in Haryana (-6.2%), followed by Gujarat (-5.6%), Assam (-4%), Karnataka (-3.7%), and lowest in Andhra Pradesh (-0.4%), whereas, wage rate increased in Madhya Pradesh (6.8%), Odisha (2.6%), Uttar Pradesh (0.3%) and West Bengal (2.1%).

5.15 Chart 5.2 presents State-wise average daily wages of agricultural labour during kharif season in 2020 and growth in wages in 2020 over 2019. At all-India level, average daily wage rate was ₹326 and ranged from ₹746 in Kerala to ₹242 in Madhya Pradesh during kharif season in 2020. Andhra Pradesh, Haryana, Himachal Pradesh, Karnataka, Kerala, Punjab and Tamil Nadu recorded higher average daily wage rate



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than all-India average, while Assam, Bihar, Gujarat, Madhya Pradesh, Maharashtra, Odisha, Rajasthan, Uttar Pradesh and West Bengal had lower than all-India level during kharif season 2020. The details of all-India and State-wise monthly average daily wage rates for agricultural labour at current prices from 2011 to 2020 are given in Annex Table 5.2.

Table 5.2: Average Growth Rate of Daily Wage Rates of Agricultural Labour in Major States and at All-India Level during Kharif Season

State	Growth (%) at Current Prices			Growth (%) at Constant Prices (2020=100)		
	2018	2019	2020	2018	2019	2020
Andhra Pradesh	11.5	10.2	7.0	8.6	1.5	-0.4
Assam	6.9	9.4	4.3	4.3	3.8	-4.0
Bihar	6.5	8.3	5.0	5.8	-0.2	-2.1
Gujarat	3.9	2.6	1.0	3.3	-5.1	-5.6
Haryana	2.2	4.5	-0.3	0.4	-0.8	-6.2
Himachal Pradesh	4.3	3.6	1.5	3.4	0.5	-3.4
Karnataka	9.8	3.9	4.1	13.7	-0.8	-3.7
Kerala	5.2	2.4	0.9	2.9	-1.2	-1.3
Madhya Pradesh	1.9	0.6	10.7	0.4	-3.9	6.8
Maharashtra	3.1	8.1	5.2	3.5	-4.2	-2.8
Odisha	0.6	2.0	8.0	-3.7	-4.5	2.6
Punjab	4.5	0.9	5.0	2.1	-3.7	-0.7
Rajasthan	12.4	-0.5	0.2	12.0	-9.6	-3.0
Tamil Nadu	8.5	8.9	7.8	5.7	1.6	-2.3
Uttar Pradesh	4.0	4.6	6.0	-0.7	-1.9	0.3
West Bengal	3.6	3.9	7.9	0.7	1.6	2.1
All-India	6.4	4.6	5.0	5.1	-2.6	-1.2

Note 1: Average of May-November

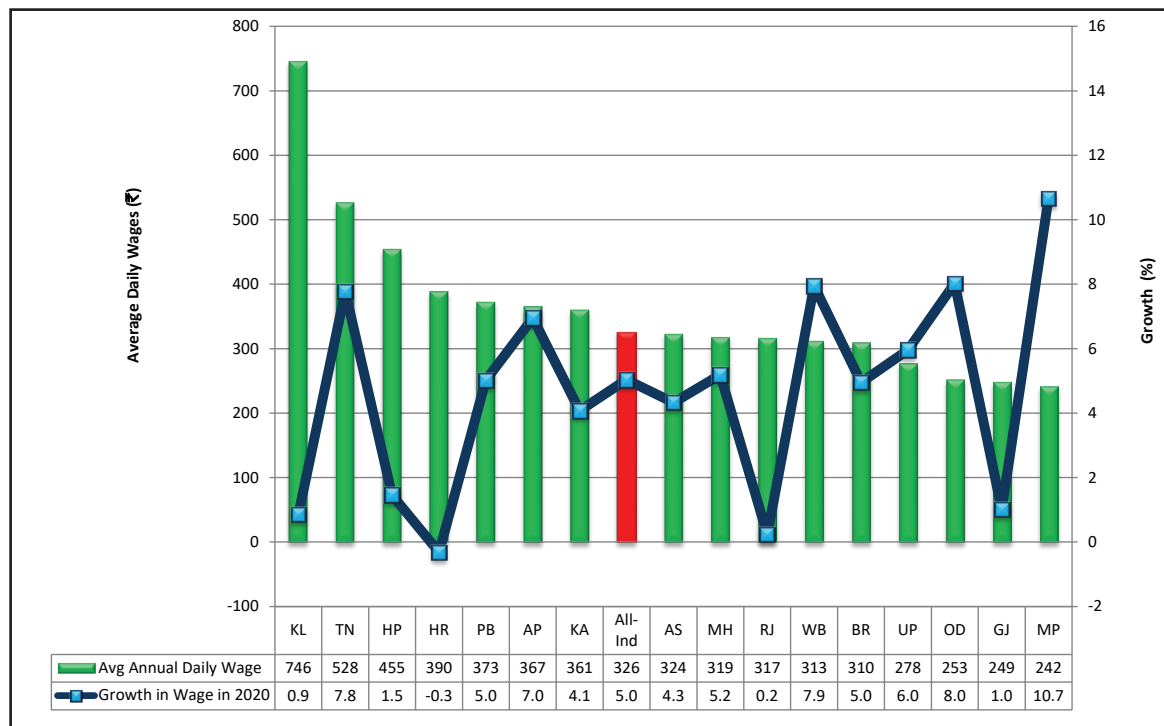
2: All-India daily wage rate is weighted average of daily wage rates of States mentioned in the Table

Source: Labour Bureau, Ministry of Labour & Employment

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Chart 5.2: Average Daily Wage Rates and Growth in Wages in Selected States during Kharif Season 2020



Note 1: Average of May-November

Note 2: All-India daily wage rate is weighted average of daily wage rates of States mentioned in the Graph

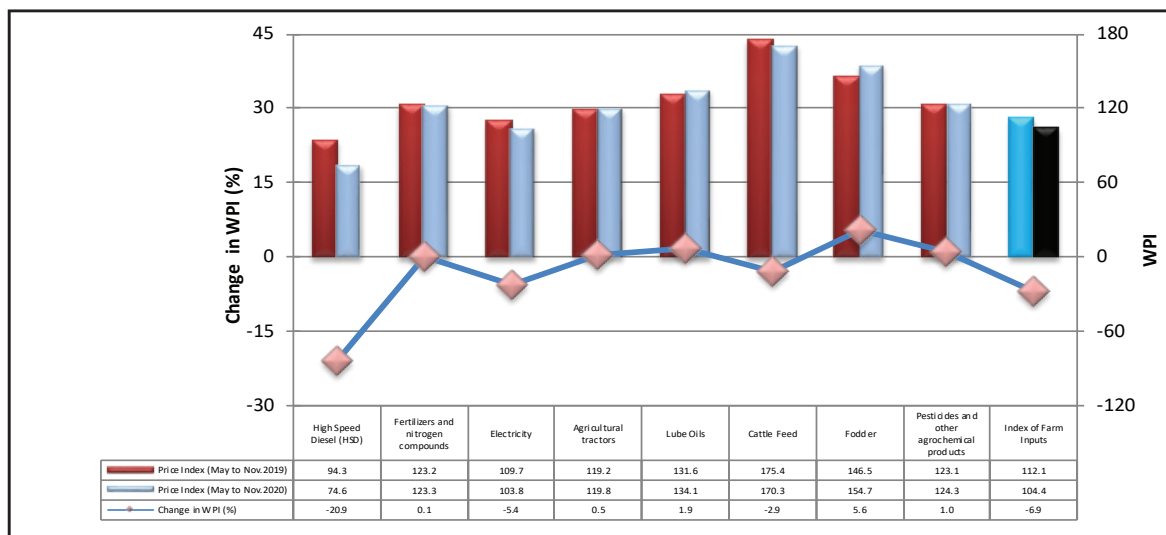
Source: Labour Bureau, Ministry of Labour & Employment

5.16 The changes in Wholesale Price Index (WPI) with base 2011-12 of major farm inputs during kharif season in 2020 over 2019 are given in chart 5.3. The price index for High Speed Diesel declined from 94.3 in 2019 to 74.6 in 2020, registering a negative growth of 20.9 percent. The price indices of electricity and cattle feed also declined by 5.4 percent and 2.9 percent, respectively. The WPI of other major farm inputs increased in 2020 over 2019, and ranged from 0.1 percent in fertilisers & nitrogen compounds to 5.6 percent in fodder. The indices of agricultural tractors, lube oils, and pesticides & other agrochemical products moved up by 0.5 percent, 1.9 percent, and 1 percent, respectively, in 2020 over 2019. The weighted index of above mentioned selected farm input prices in 2020 declined by 6.9 percent. The monthly wholesale price indices of various farm inputs from 2012 to 2020 are given in Annex Table 5.3.



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Chart 5.3: Movements in WPI of Farm Inputs during Kharif Season in 2019 and 2020



Note: WPI of selected farm inputs is weighted average of WPIs of farm inputs mentioned in the Graph

Source: Office of the Economic Adviser, Ministry of Commerce and Industry

Cost Projections for Crop Season 2021-22

5.17 The Commission has computed farm input-wise all-India weighted 'input weights' for 2018-19 crop season and 'composite input price Indices (CIPIs)' from 2018-19 to 2021-22 for mandated kharif crops with base 2011-12=100, and are given in Table 5.3. Based on actual 'weights' and 'input price indices' for 2018-19, and using latest input prices, 'input price indices' and 'CIPIs' for crop season 2019-20, 2020-21 and 2021-22 for a State have been constructed. Subsequently, based on these State-wise 'actual weights' and 'input price indices', crop-wise all-India weighted average 'input weights' and 'CIPIs' for all inputs, with weights being relative shares of States in all-India area under the crop during TE2019-20, have been computed. Further, these crop-wise all-India weighted average 'input weights' and 'CIPIs' have been used to compute input-wise all-India weighted average 'input weights' and 'CIPIs', respectively, for all kharif crops, with weights being relative shares of crops in total production of mandated kharif crops at all-India level during TE2019-20. Finally, these input-wise all-India weighted average 'input weights' and 'CIPIs' have been used to compute all-India weighted average 'composite input price index (CIPI)' for all inputs of mandated kharif crops. It may be observed from the Table that all-India CIPI for kharif crops increased by 5.1 percent in 2019-20, 5.4 percent in 2020-21 and 5.9 percent in 2021-22, while CIPI in 2021-22 registered the lowest increase (1.8%) in irrigation and highest increase (7%) in bullock labour over 2020-21. As human labour availability has become a constraint, wage rates are rising, and human labour accounted for about half of total cost of production compared with less than 20 percent for machine labour during TE2018-19, it is imperative to encourage farmers to adopt farm mechanization to reduce cost of cultivation/production and improve profitability.

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Table 5.3: Trends in All-India Farm Input Price Indices (Base 2011-12 = 100)

Inputs	Weights (TE2018-19)	Kharif Crops Input Price Index				Percentage Change in Input Price Index 2021-22 over 2020-21
		2018-19	2019-20	2020-21	2021-22	
Human Labour (HL)	0.49	188.51	198.30	209.44	222.57	6.3
Bullock Labour (BL)	0.05	233.82	248.08	264.28	282.84	7.0
Machine Labour (ML)	0.18	132.52	139.65	147.37	155.77	5.7
Seeds	0.08	180.88	191.04	202.40	215.10	6.3
Fertilizers	0.09	149.71	155.53	162.45	170.81	5.1
Manures	0.03	178.71	187.79	197.72	209.24	5.8
Insecticides	0.03	133.08	137.02	141.02	145.21	3.0
Irrigation Charges	0.04	111.59	113.54	115.54	117.58	1.8
Composite Input Price Index (CIPI)		171.27	179.94	189.71	200.99	5.9
Percentage Change		-	5.1	5.4	5.9	-

Note: All-India Weights and CIPIs are weighted average of respective weights and CIPIs of projected States
Source: CACP Calculations

- 5.18 Based on State-wise actual cost estimates upto 2018-19 and projected CIPIs, State-wise estimates of CoC A_2 , A_2 +FL and C_2 for each of mandated kharif crop are projected for 2021-22. Using these State-wise estimates of CoC, average ratios of main product (MP) to gross value of output (GVO) during TE2018-19, and projected yields, State-wise CoP A_2 , A_2 +FL and C_2 for each crop for 2021-22 are projected. Subsequently, crop-wise all-India weighted average projected CoP A_2 , A_2 +FL and C_2 , with weights being the respective shares of the States in all-India production during TE2019-20, have been worked out for kharif crops for 2021-22 and are given in Table 5.4.
- 5.19 All-India projected CoP A_2 was highest for sunflower at ₹3,373 per quintal, and A_2 +FL and C_2 were highest for sesamum at ₹4,871 per quintal and ₹6,653 per quintal, respectively. The projected A_2 , A_2 +FL and C_2 CoP per quintal were lowest for bajra at ₹697, ₹1,213 and ₹1,579, respectively. Among cereals, per quintal all-India projected A_2 , A_2 +FL and C_2 CoP were highest for ragi at ₹1,690, ₹2,251 and ₹3,004, respectively, while bajra had the lowest cost of production. Per quintal projected A_2 , A_2 +FL and C_2 costs of paddy at ₹980, ₹1,293 and ₹1,727, respectively, were higher than projected costs for maize at ₹938, ₹1,246 and ₹1,654, respectively. Nutri-cereals except bajra have relatively higher CoP than paddy and maize.



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- 5.20 In case of pulses, per quintal all-India projected A_2 , A_2+FL and C_2 CoP were highest for moong at ₹3,110, ₹4,850 and ₹6,110, respectively, mainly due to low yield of moong, and were lowest for urad at ₹2,918, ₹3,816 and ₹5,133, respectively. In case of tur, per quintal projected A_2 cost was ₹2,986, A_2+FL at ₹3,886 and C_2 at ₹5,291. In oilseeds, all-India projected A_2 cost was highest for sunflower (₹3,373/ qtl), followed by sesamum (₹3,077/qtl), groundnut (₹3,025/qtl), soybean (₹2,215/ qtl) and lowest for nigerseed (₹2,062/qtl), while A_2+FL and C_2 costs were highest for sesamum, followed by nigerseed, sunflower, groundnut, and lowest for soybean. Projected costs of sunflower were higher than groundnut mainly due to significantly low yield of sunflower seed, while cost of production of groundnut was higher than soybean mainly due to lower cost of cultivation of soybean.
- 5.21 The all-India per quintal A_2 , A_2+FL and C_2 CoP for cotton was projected at ₹3,054, ₹3,817 and ₹5,169, respectively, and cost of production of cotton was higher than cereals, urad, groundnut and soybean, while lower than moong and sesamum.
- 5.22 Cost of production in some crops and States were high due to low yields, therefore, efforts are needed to improve productivity to reduce cost of production and improve profitability, especially for nutri-cereals, pulses and oilseeds. State-wise and all-India projected costs of mandated kharif crops for 2021-22 and production shares during TE2019-20 are given in Annex Table 5.4. State-wise break-up of actual CoC estimates of paddy, jowar, bajra, maize, ragi, tur, moong, urad, groundnut, soybean, sunflower, sesamum, nigerseed and cotton for latest three years, are given in Annex Tables 5.5a to 5.5n, respectively.

Table 5.4: Projected Cost of Production (CoP) of Mandated Kharif Crops, KMS 2021-22

Crops	Cost of Production (₹/qtl)		
	A_2	A_2+FL	C_2
Paddy	980	1,293	1,727
Jowar	1,351	1,825	2,478
Bajra	697	1,213	1,579
Maize	938	1,246	1,654
Ragi	1,690	2,251	3,004
Arhar (Tur)	2,986	3,886	5,291
Moong	3,110	4,850	6,110
Urad	2,918	3,816	5,133
Groundnut	3,025	3,699	4,732
Soybean	2,215	2,633	3,439
Sunflower	3,373	4,010	5,027
Sesamum	3,077	4,871	6,653
Nigerseed	2,062	4,620	6,441
Cotton	3,054	3,817	5,169

Note: All-India CoP of a crop is weighted average of CoPs of projected States

Source: CACP Calculations

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- 5.23 Charts 5.4 (a) to (m) show crop-wise supply curves of projected A_2 +FL cost of production by States in ascending order with corresponding shares in all-India production. Supply curves for different crops are graphical presentation of CoP, which represents the quantum of a crop produced at different CoP in various States. The supply curve presented in Chart 5.4 (a) shows that projected A_2 +FL CoP for paddy was lowest at ₹759 per quintal in Punjab, followed by Andhra Pradesh (₹1,005/qttl), Uttarakhand (₹1,076/qttl), Chhattisgarh (₹1,129/qttl), Haryana (₹1,158/qttl), and highest in Maharashtra (₹2,405/qttl). Among top-five producers of paddy in the country, which account for more than half of total production, Punjab has the lowest A_2 +FL CoP, while West Bengal has the highest CoP (₹1,584/qttl).
- 5.24 For other kharif cereals, A_2 +FL CoP for jowar varied from ₹1,290 per quintal in Andhra Pradesh to ₹2,925 per quintal in Telangana (Chart 5.4 (b)). Among top-three producers of jowar in the country, which account for 71.9 percent production share of projected States, CoP was lowest in Tamil Nadu (₹1,661/qttl) and highest in Karnataka (₹2,165/qttl). In Maharashtra, the largest jowar producing State, the CoP was ₹1,852 per quintal, marginally higher (1.5%) than all-India weighted CoP. Supply curve of bajra presented in Chart 5.4 (c) shows that CoP A_2 +FL was lowest in Uttar Pradesh (₹881/qttl) and highest in Maharashtra (₹2,335/qttl). Among top-three producers of bajra having more than 80 percent production share, CoP was lowest in Uttar Pradesh, and highest in Rajasthan (₹1250/qttl), the largest bajra producing State. Chart 5.4 (d) shows that in case of maize, A_2 +FL CoP was lowest in Andhra Pradesh and Bihar at ₹934 per quintal and highest in Gujarat (₹2,061/qttl). Among top-five producers of maize in the country, Bihar has lowest CoP, while Tamil Nadu has highest CoP (₹1330/qttl). In case of ragi, CoP A_2 +FL was lowest in Tamil Nadu (₹1,576/qttl) and highest in Maharashtra (₹3,080/qttl) (Chart 5.4 (e)). The CoP of ragi in Karnataka, the largest producing State, was ₹2384/qttl, 5.9 percent higher than all-India weighted CoP.
- 5.25 In case of pulses, A_2 +FL CoP for tur was lowest in Bihar at ₹2,417 per quintal and highest (₹5,246/qttl) in Odisha (Chart 5.5 (f)). Among top-three producers of tur in the country, which account for 67.3 percent production share of projected States, Madhya Pradesh has the lowest CoP (₹3,226/qttl), while Maharashtra has the highest CoP (₹4,261/qttl). As presented in Chart 5.4 (g), moong has lowest A_2 +FL CoP in Bihar (₹3,671/qttl) and highest in Maharashtra (₹6,433/qttl). Among top-three producers of moong having 67.5 production share of projected States, CoP was lowest in Madhya Pradesh (₹4,188/qttl) and highest in Maharashtra. In Rajasthan, the largest moong producer, projected cost of production of moong was ₹4,970 per quintal, marginally higher (2.5%) than all-India CoP. In case of urad, A_2 +FL CoP was the lowest in Andhra Pradesh (₹2,622/qttl), while Maharashtra had the highest cost at ₹6,496 per quintal (Chart 5.4(h)). Among top-three producers of urad having 66 percent production share of projected States, projected cost was lowest in Andhra Pradesh and highest in Rajasthan (₹3,637/qttl). Madhya Pradesh, the largest urad producing State, has significantly lower CoP (₹3,347/qttl) compared with all-India weighted CoP.



Price Policy for **KHARIF CROPS**

Costs, Returns and Inter-Crop Parity

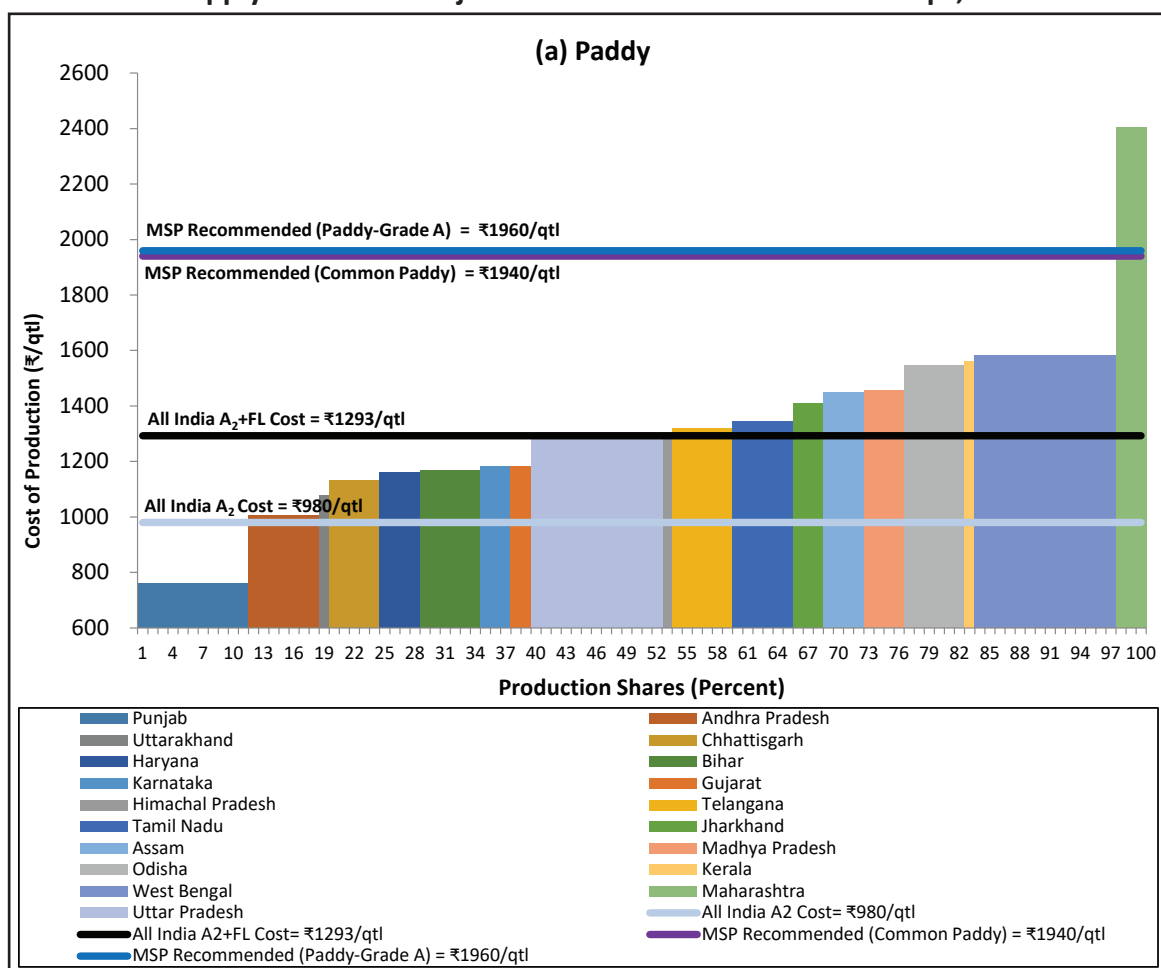
- 5.26 For kharif oilseeds, projected A_2 +FL CoP for groundnut ranged from ₹1,824 per quintal in Rajasthan to ₹6,223 per quintal in Maharashtra (Chart 5.4 (i)). Among top-three groundnut producing States, lowest CoP was recorded in Rajasthan and highest in Tamil Nadu (₹4,564/qtl). CoP for groundnut in Gujarat, the largest producer of groundnut, was projected at ₹3,619 per quintal, about 2.2 percent lower than all-India CoP. The supply curve of soybean shows that CoP A_2 +FL was lowest in Madhya Pradesh (₹2,322/qtl) and highest (₹3,006/qtl) in Maharashtra. Madhya Pradesh and Maharashtra together comprise 86.7 percent production share of soybean of projected States, and projected CoP of Madhya Pradesh was lower (11.8%) than all-India weighted CoP while Maharashtra had higher CoP (14.2%) than all-India weighted CoP (Chart 5.4 (j)). In case of sunflower, Karnataka with 84.2 percent production share of projected States, has marginally higher (2.5%) projected A_2 +FL CoP (₹4,109/qtl) compared with all-India weighted CoP, and Odisha with 15.8 percent production share has significantly lower projected CoP (₹3,485/qtl) than all-India weighted CoP (Chart 5.4 (k)). In case of sesamum, West Bengal has the lowest A_2 +FL CoP (₹3,854/qtl), while Rajasthan has the highest CoP (₹6,623/qtl). Among top-two producers of sesamum, which account for 57.3 production share of projected States, CoP in Madhya Pradesh (₹4,560) and West Bengal was lower than all-India CoP (Chart 5.4 (l)). Chart 5.4 (m) shows that A_2 +FL CoP for cotton was lowest in Rajasthan (₹3,238/qtl), and highest in Tamil Nadu (₹4,916/qtl). Among top-three producers of cotton, lowest CoP was recorded in Gujarat (₹3,279/qtl), and highest in Maharashtra (₹4,323/qtl), while CoP in Telangana was estimated at ₹4,286 per quintal.
- 5.27 In case of paddy, the projected A_2 +FL cost of production was lower than all-India weighted CoP A_2 +FL in 10 out of 19 States, while in jowar 4 out of 7 States, 3 out of 5 States for bajra, 7 out of 13 States for maize and 2 out of 5 States for ragi had lower CoP than all-India average. Among pulses, 4 out of 10 States for tur and urad and 6 out of 12 States for moong had lower CoP, while in case of oilseeds, 5 out of 10 States for groundnut, 2 out of 6 States for soybean, 1 out of 2 States for sunflower, and 4 out of 8 States for sesamum had lower CoP than all-India CoP. For cotton, 6 out of 11 States had CoP lower than all-India average. Therefore, holistic and coordinated efforts are needed to reduce costs and improve productivity in high-cost States to remain competitive and profitable.
- 5.28 Among cereals, increase in projected A_2 +FL CoP for crop season 2021-22 over 2020-21 was highest in jowar at 4.5 percent, followed by paddy (3.9%), bajra (3.2%), maize (2.7%) and lowest in ragi (2.6%). In case of pulses, highest increase was registered in urad (4.3%), followed by tur (2.4%), and lowest in moong (1.1%), while in case of oilseeds, sesamum recorded the highest increase (6.6%), followed by groundnut (5.2%), nigerseed (3.5%), sunflower (2.3%), and lowest in soybean (1.8%). In case of cotton, 3.8 percent increase in CoP was recorded in 2021-22 over 2020-21 (details in Annex Table 5.6).

Price Policy for KHARIF CROPS



5.29 The share of production covered at the recommended MSP is 100 percent in case of ragi, tur, moong, sunflower, soybean, sesamum, nigerseed, cotton and, 97 percent in paddy, 98 percent in jowar, 94 percent in bajra, 97 percent in maize, 88 percent in urad and 96 percent in groundnut. The MSP margins over all-India projected A_2 +FL cost of production was highest for bajra at 85 percent, followed by urad (65%), tur (62%), and 50 percent for other kharif crops. The highest MSP margins over projected CoP A_2 +FL for paddy was in Punjab (156%), Andhra Pradesh (112%) for jowar, Uttar Pradesh (155%) for bajra, Andhra Pradesh and Bihar (100%) for maize, Tamil Nadu (114%) for ragi, Bihar (161%) for tur, Bihar (98%) for moong, Andhra Pradesh (140%) for urad, Rajasthan (204%) for groundnut, Madhya Pradesh (70%) for soybean, Odisha (70%) for sunflower, West Bengal (90%) for sesamum, and Rajasthan (77%) for cotton.

Chart 5.4: Supply Curve and Projected CoP for Mandated Kharif Crops, KMS 2021-22



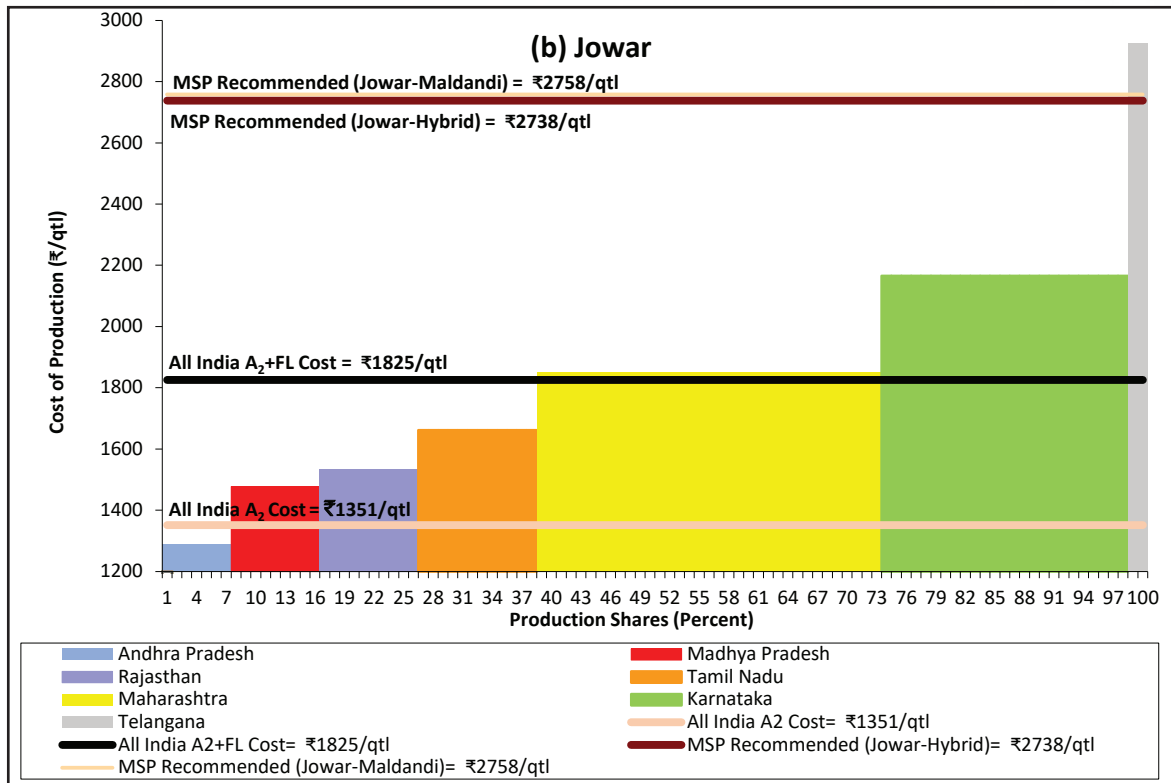
Note: All-India CoP is weighted average of CoPs of States mentioned in the Graph

Costs, Returns and Inter-Crop Parity

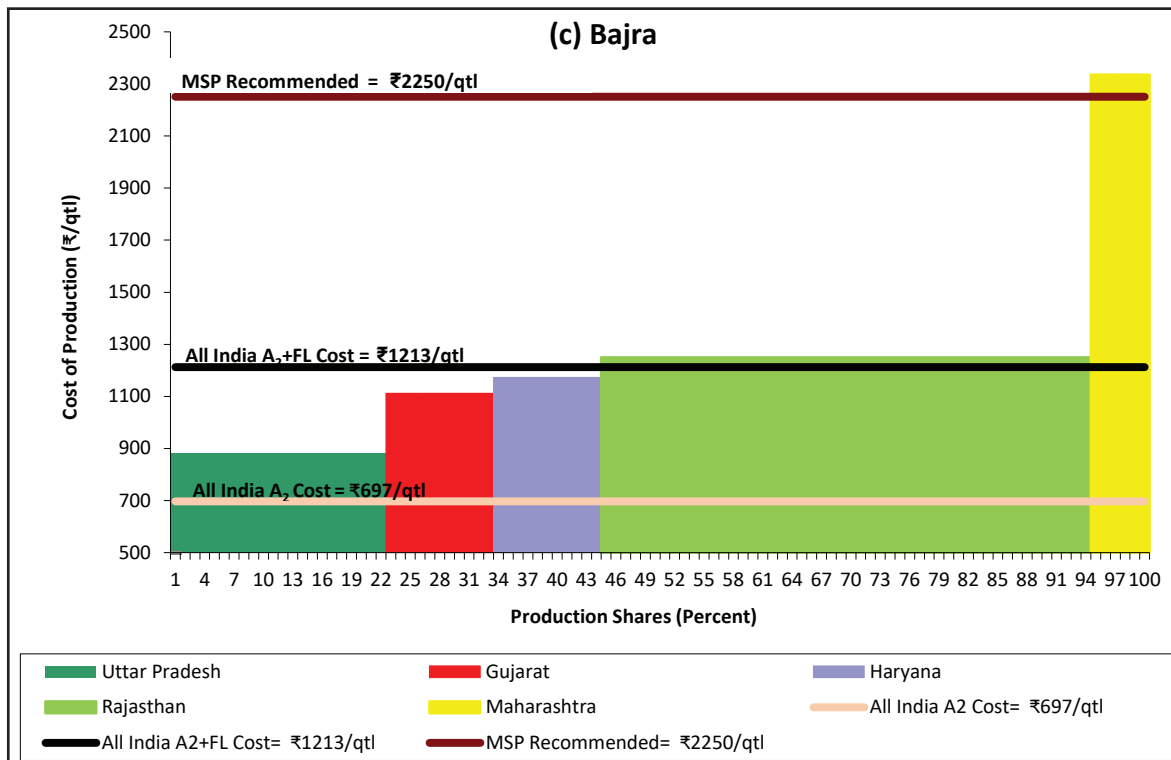


Price Policy for KHARIF CROPS

Costs, Returns and Inter-Crop Parity

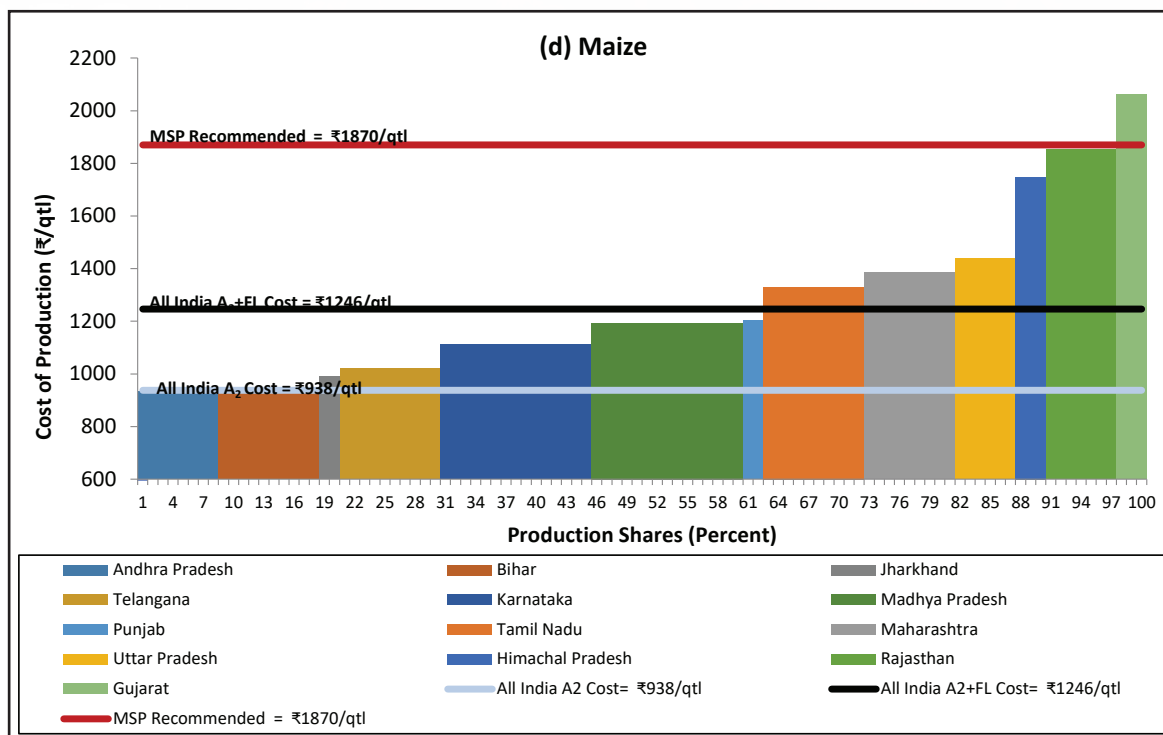


Note: All-India CoP is weighted average of CoPs of States mentioned in the Graph

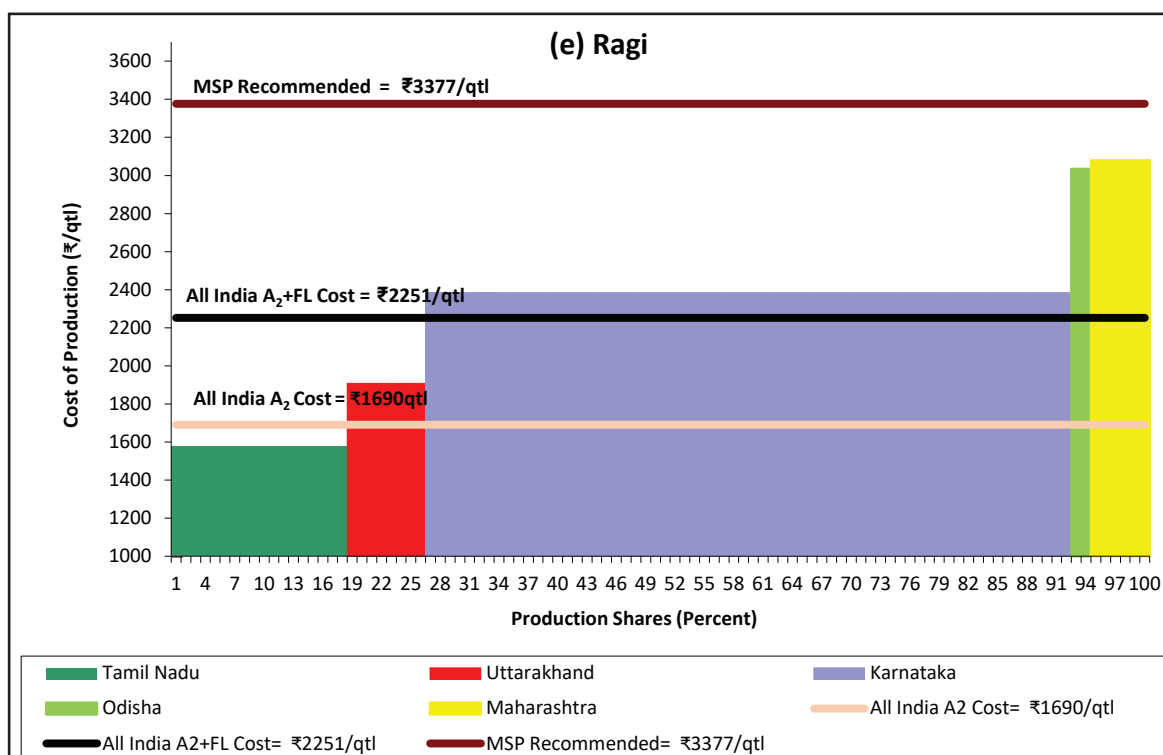


Note: All-India CoP is weighted average of CoPs of States mentioned in the Graph

Price Policy for KHARIF CROPS



Note: All-India CoP is weighted average of CoPs of States mentioned in the Graph



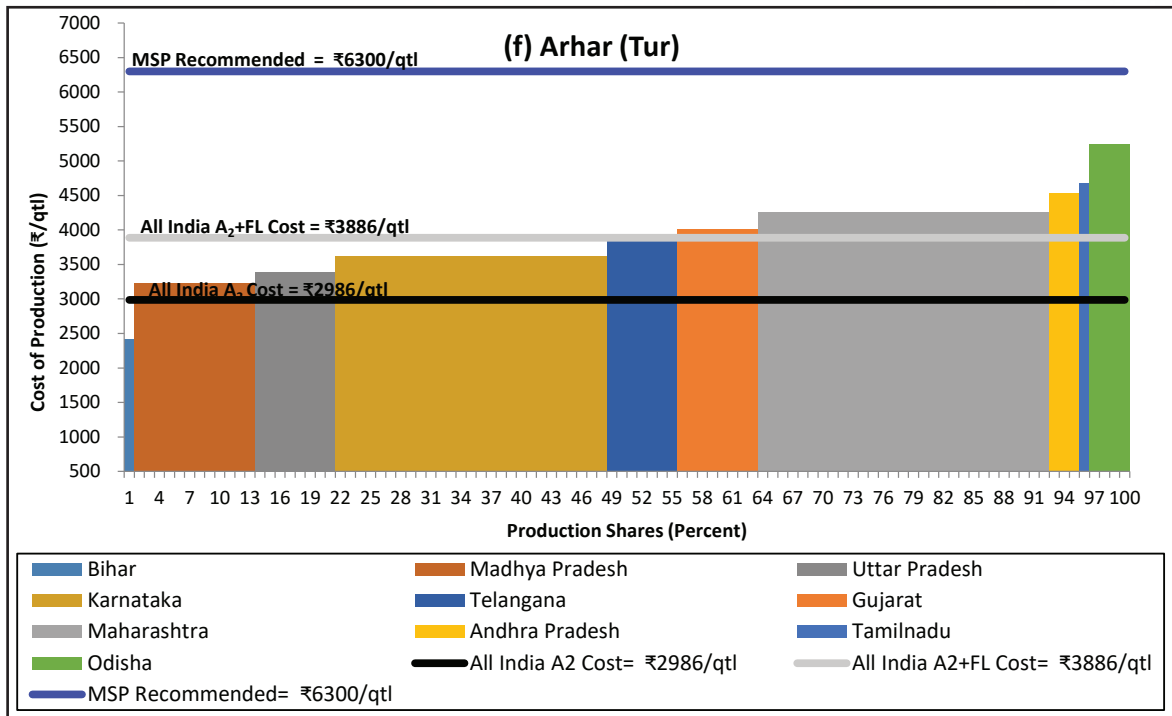
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Costs, Returns and Inter-Crop Parity

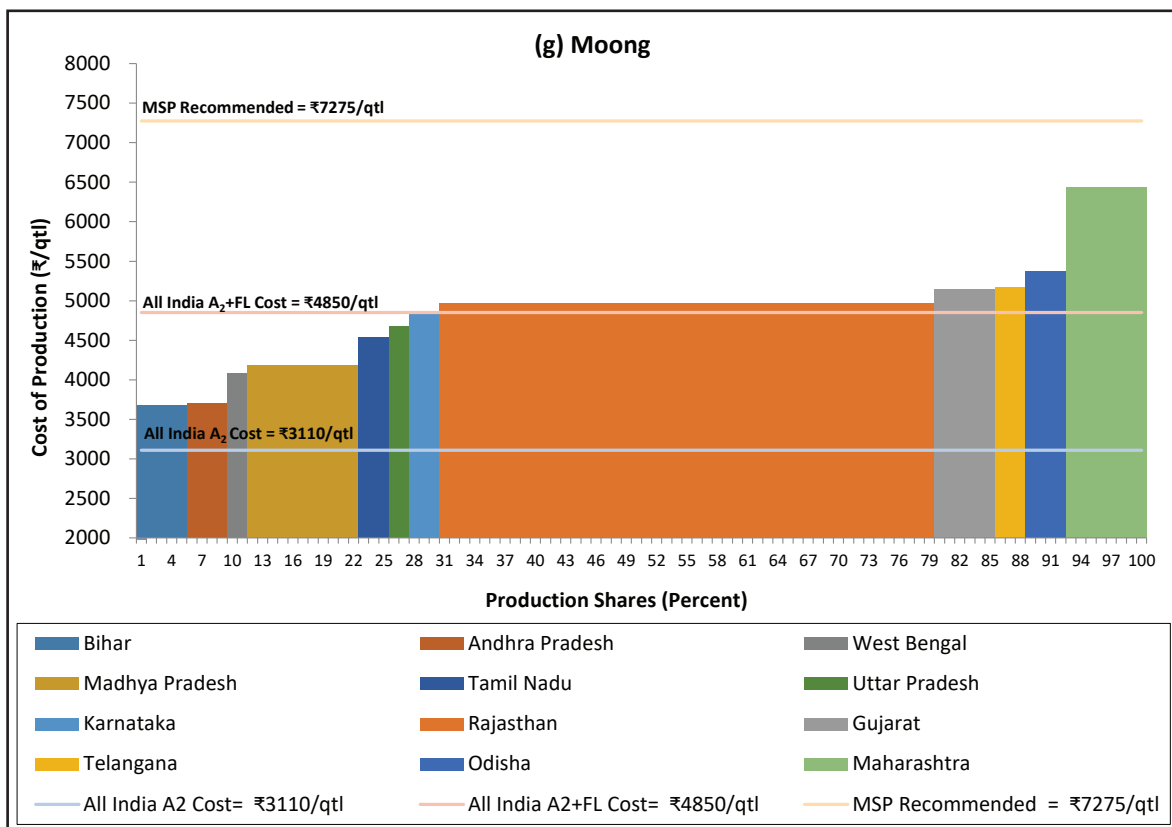


Price Policy for KHARIF CROPS

Costs, Returns and Inter-Crop Parity

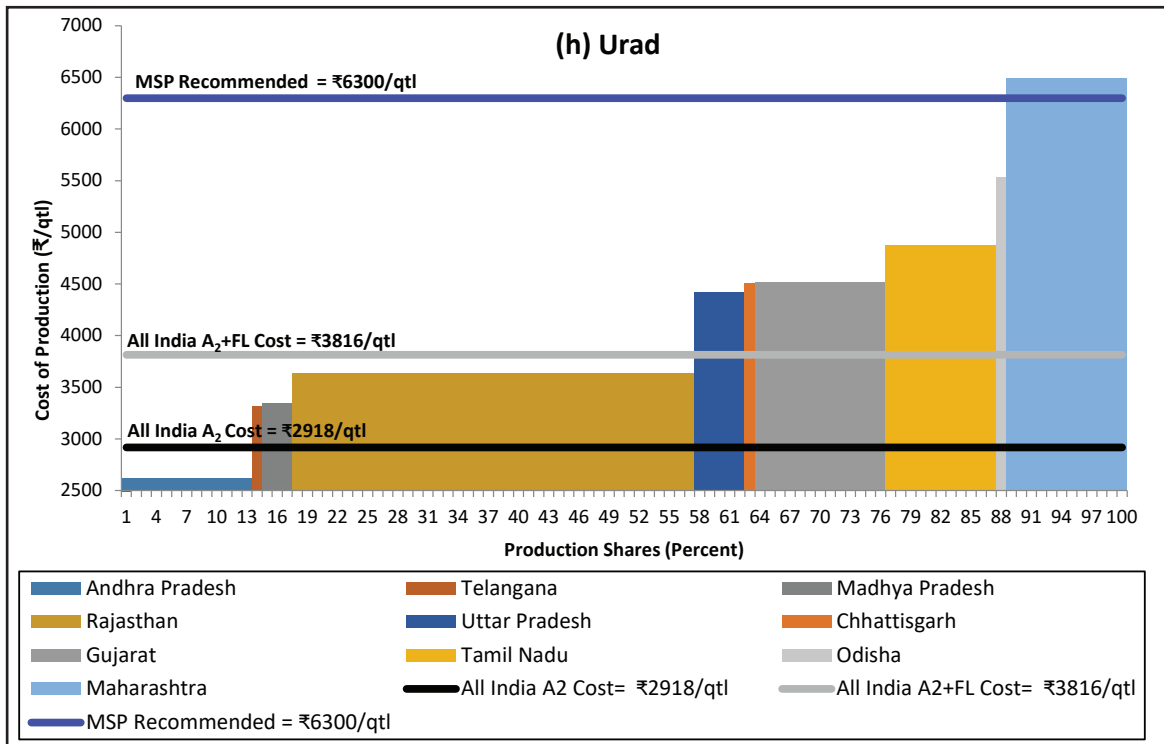


Note: All-India CoP is weighted average of CoPs of States mentioned in the Graph

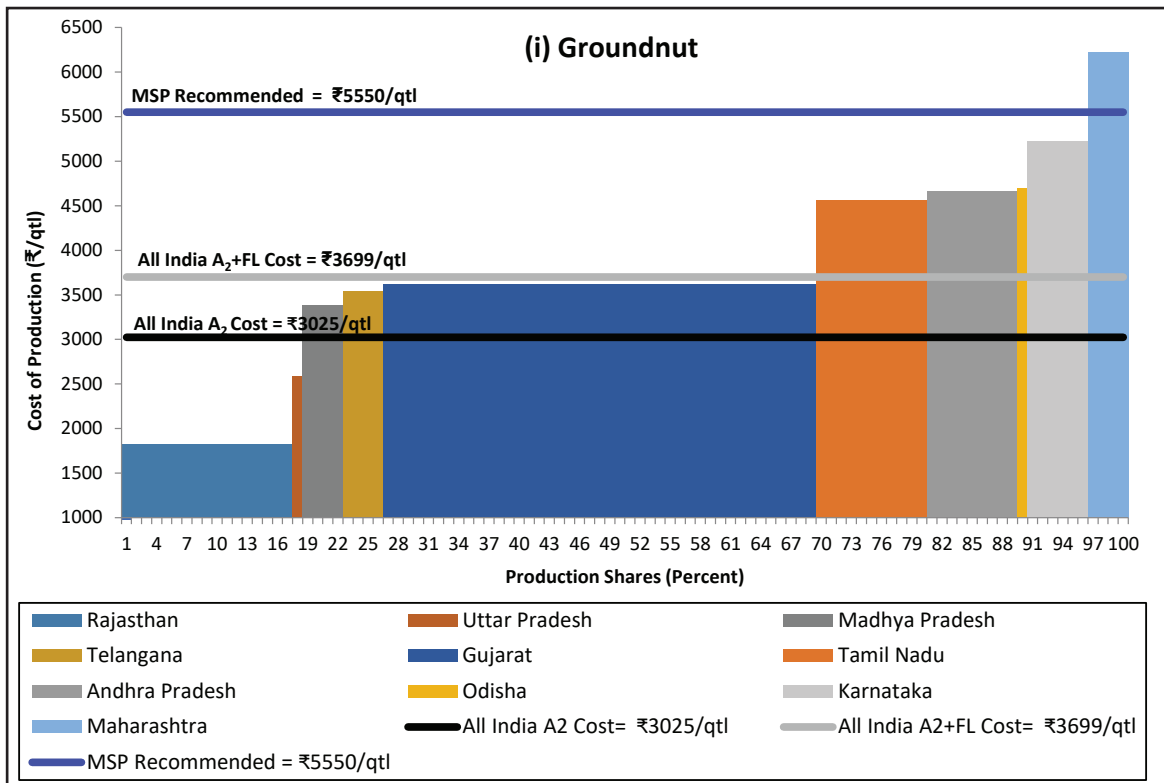


Note: All-India CoP is weighted average of CoPs of States mentioned in the Graph

Price Policy for KHARIF CROPS



Note: All-India CoP is weighted average of CoPs of States mentioned in the Graph



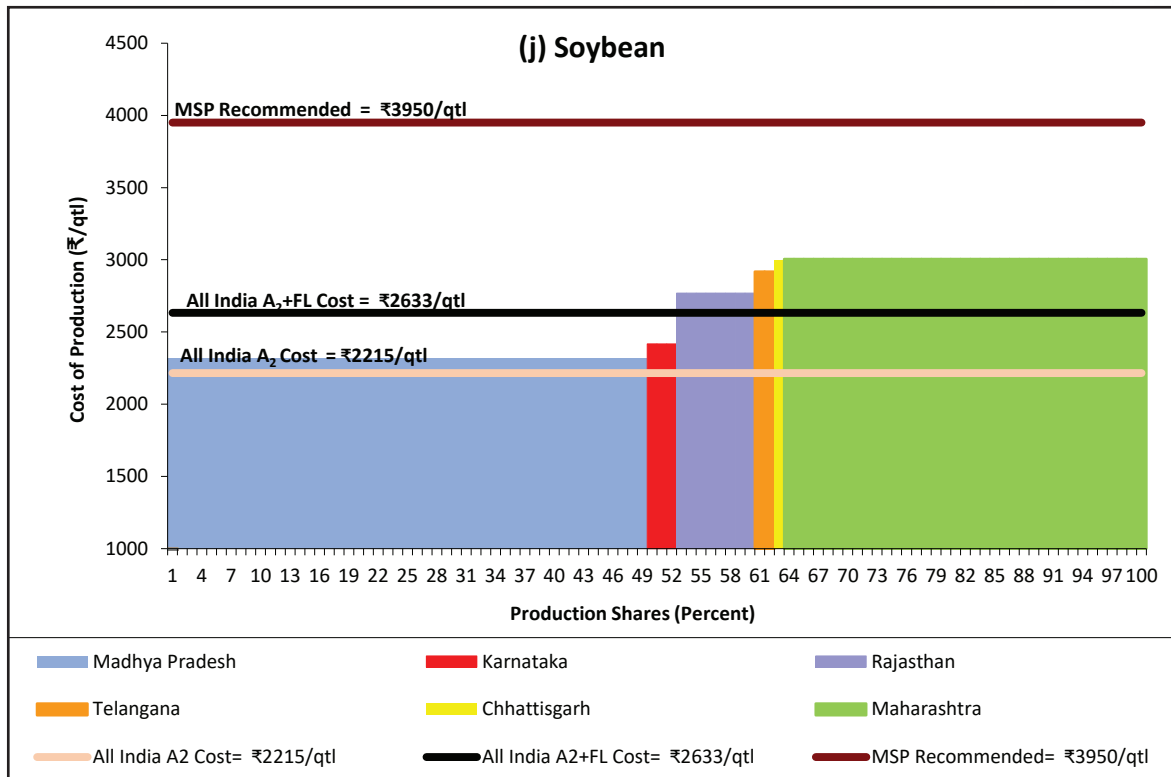
Note: All-India CoP is weighted average of CoPs mentioned in the Graph

Costs, Returns and Inter-Crop Parity

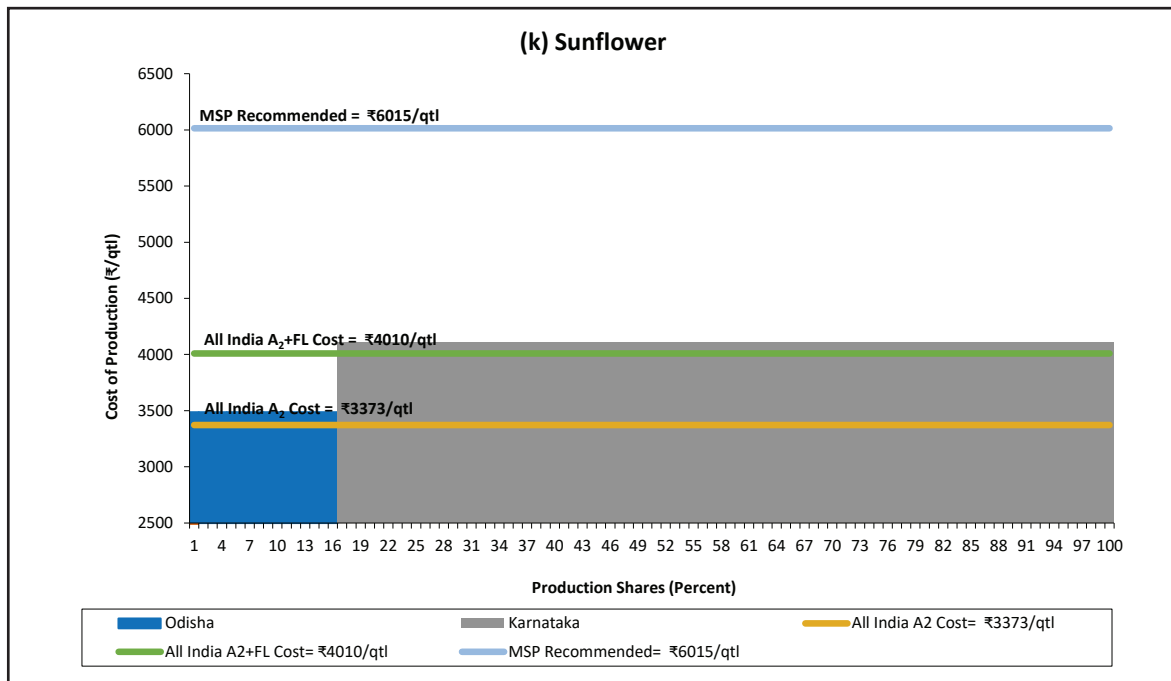


Price Policy for KHARIF CROPS

Costs, Returns and Inter-Crop Parity

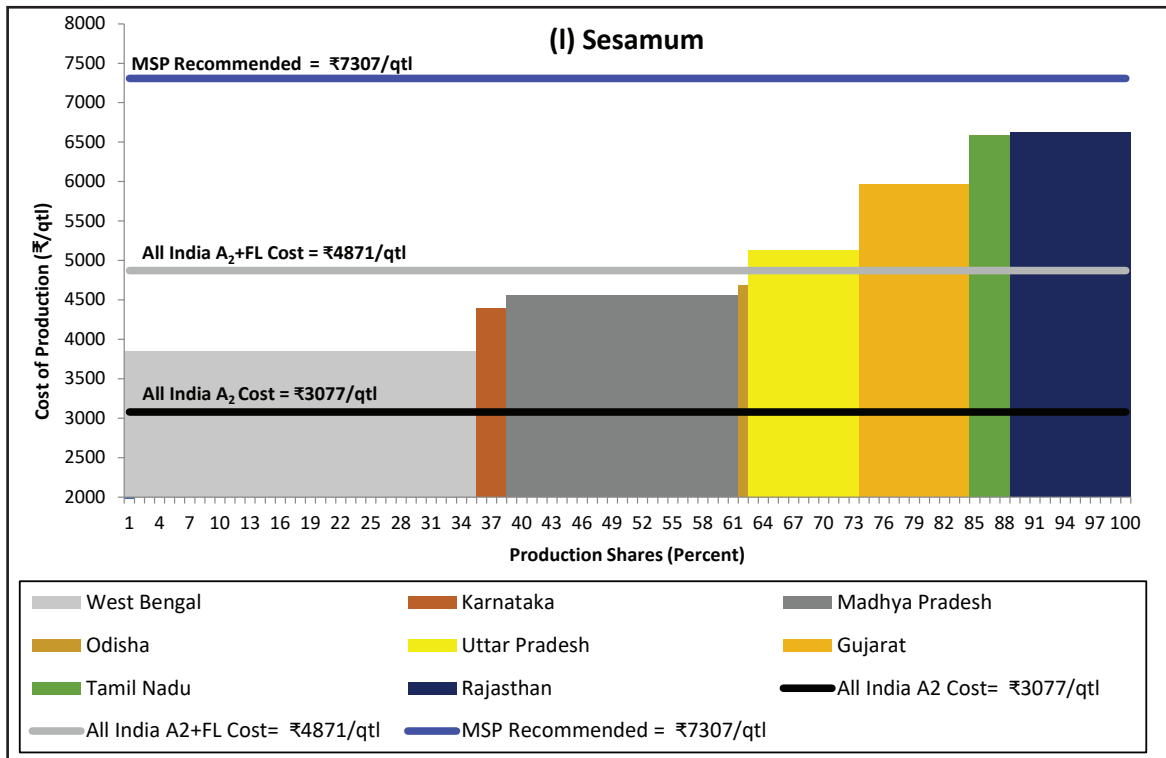


Note: All-India CoP is weighted average of CoPs mentioned in the Graph

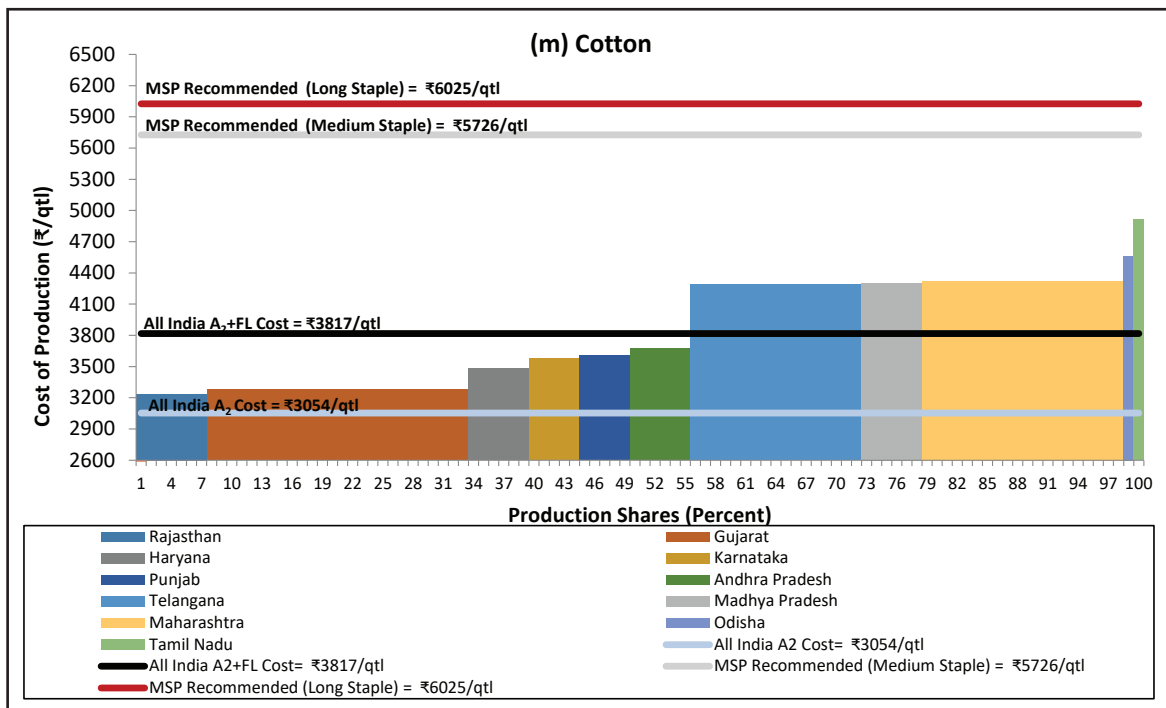


Note: All-India CoP is weighted average of CoPs mentioned in the Graph

Price Policy for KHARIF CROPS



Note: All-India CoP is weighted average of CoPs mentioned in the Graph



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Costs, Returns and Inter-Crop Parity



Price Policy for **KHARIF CROPS**

Inter-Crop Parity in Returns of Kharif Crops

5.30 Inter-crop parity being an important factor for determination of MSPs, the Commission analyses per hectare relative average gross returns of different crops that are substitutes for each other. Table 5.5 and Chart 5.5 show relative per hectare average gross returns over A_2+FL in percentage term for each mandated kharif crop with reference to paddy during TE2018-19. Tur, groundnut and cotton have higher relative returns over A_2+FL CoC compared with paddy, and were higher by 1.2 percent for tur, 6 percent for groundnut and 24.2 percent for cotton. All other mandated kharif crops have lower relative returns compared to that of paddy. Relative returns for maize were 27.4 percent lower in comparison of paddy. Due to low productivity, relative returns of nutri-cereals were significantly lower than maize and paddy. Among nutri-cereals, relative returns for jowar (37.7%) were marginally higher than bajra (36.1%) and ragi (32.3%). Among pulses, the relative returns for tur were 3.4 times that of moong and 2.5 times of urad. Among oilseeds, the relative returns for groundnut were 2.6 times that of sesamum, 2.5 times of soybean and 2.4 times of sunflower. Nigerseed farmers incurred net loss in cultivation of nigerseed.

Table 5.5: Crop-wise Relative Average Gross Returns (%), with respect to Paddy, TE2018-19

Crop	Relative Gross Returns over CoC A_2+FL with respect to Paddy
A. Cereals	
Paddy	100.0
Maize	72.6
Jowar	37.7
Bajra	36.1
Ragi	32.3
B. Pulses	
Arhar (Tur)	101.2
Moong	29.9
Urad	39.8
C. Oilseeds	
Groundnut	106.0
Soybean	41.8
Sunflower	44.2
Sesamum	40.3
Nigerseed	-8.5
D. Commercial Crop	
Cotton	124.2

Note: All-India relative average gross returns of a crop are based on weighted average of average gross returns of projected States

Source: CACP using CS data

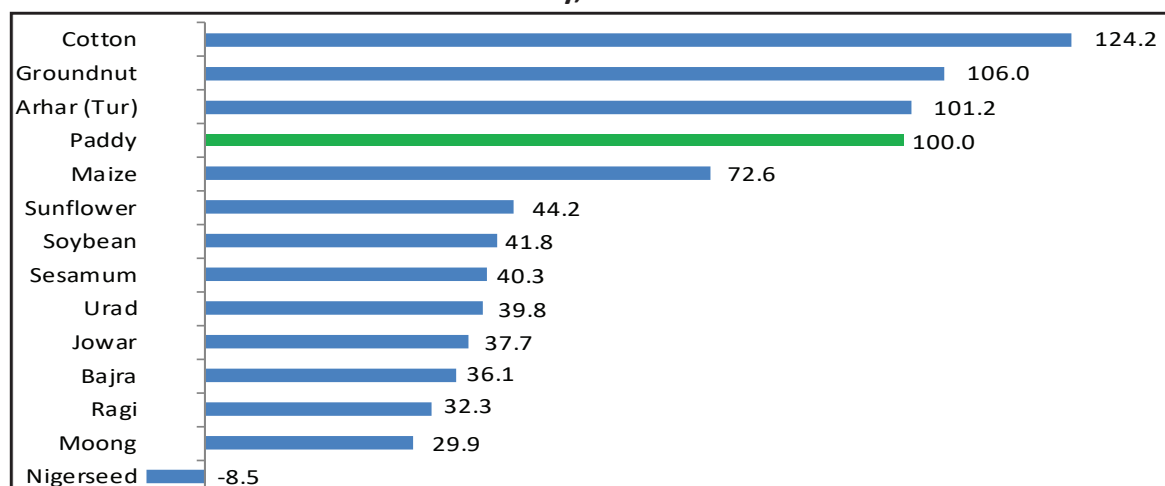
5.31 The relative gross returns on per hectare basis show that paddy, tur, groundnut and cotton have significantly higher returns than maize, nutri-cereals, moong, urad, sesamum, soybean, sunflower and nigerseed. Due to reasonably higher returns and

Price Policy for Kharif Crops



assured market in paddy on one hand, and high production and market/price risks in nutri-cereals, pulses and oilseeds on the other, farmers prefer to grow paddy over nutri-cereals, pulses and oilseeds. Therefore, there is need to promote nutri-cereals, pulses and oilseeds by changing their relative incentive structure through higher MSP and assured markets, improving productivity and reducing cost of cultivation.

Chart 5.5: Crop-wise Relative Average Gross Returns (%), with respect to Paddy, TE2018-19



Note: All-India relative average gross returns of a crop are based on weighted average of average gross returns of projected States

Source: CACP using CS data

Comparison of CACP Cost Estimates with State Estimates

- 5.32 Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Karnataka, Kerala, Punjab, Rajasthan, Tamil Nadu, Telangana, Uttar Pradesh, Uttarakhand, West Bengal and Union Territory of Andaman and Nicobar Islands provided the estimates of cost of cultivation/production for major crops. The projected cost of production/cultivation and yields provided by States/UT and CACP projections for mandated kharif crops for crop season 2021-22 are given in Annex Table 5.7. There are variations in cost estimates provided by the States/UT and CACP cost estimates. The main reasons for variations in these two sets of estimates are different methodologies and cost concepts used by the States/UT and CACP.
- 5.33 The estimates of projected cost of production for paddy by Andhra Pradesh, Chhattisgarh, Karnataka, Kerala, Punjab, Tamil Nadu, and Telangana were higher than CACP projections, while cost estimates by Bihar, Gujarat, Uttar Pradesh and West Bengal were lower than CACP estimates. For jowar, Andhra Pradesh, Karnataka and Telangana estimates were higher than CACP estimates whereas Tamil Nadu estimates were lower than CACP estimates. Cost estimates of Andhra Pradesh, Gujarat, Rajasthan and Uttar Pradesh in bajra, and Karnataka and Uttarakhand in ragi



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were higher than CACP estimates. In case of maize, Andhra Pradesh, Bihar, Gujarat, Karnataka, Tamil Nadu and Telangana estimates were more than CACP estimates while Rajasthan and Uttar Pradesh costs were lower than CACP estimates. In case of pulses, cost of production estimates of Andhra Pradesh in tur, moong and urad, Karnataka in tur and moong, and Telangana in tur and urad were higher than CACP cost of production projections while cost estimates of Gujarat and Uttar Pradesh for tur, moong and urad, Rajasthan for moong and urad, Telangana for moong, and Chhattisgarh and Tamil Nadu for urad were lower than CACP estimates. For oilseeds, the estimates of cost of production of Karnataka and Telangana in groundnut and soybean, and Karnataka in sunflower were higher than CACP estimates, while Andhra Pradesh, Gujarat, Tamil Nadu and Uttar Pradesh estimates in groundnut, and Chhattisgarh and Rajasthan in soybean were less than CACP costs. In case of sesamum, State estimates of Gujarat, Rajasthan, Tamil Nadu and Uttar Pradesh were lower than CACP cost estimates. The cost estimates of cotton for Andhra Pradesh, Gujarat, Karnataka and Telangana were higher than CACP costs while Punjab, Rajasthan and Tamil Nadu estimates were less than CACP estimates.

- 5.34 In case of Andhra Pradesh, the projected costs of paddy, jowar, maize, tur, moong, urad, cotton were higher than CACP projections mainly due to inclusion of additional 10 percent management cost. In case of cotton in Andhra Pradesh, besides including ₹5,200 per hectare transportation cost, labour cost (human, bullock, machine) was 29.5 percent higher, seed, fertiliser & manure and insecticides was 71.4 percent higher, and rental value of owned land, rent paid for leased-in land, and interest on fixed capital was 29.2 percent higher than CACP estimates. For Karnataka, cost projections for paddy, jowar, maize, ragi, tur, moong, groundnut, soybean, sunflower, and cotton were higher than CACP estimates as marketing expenses and managerial cost, have been included in the State estimates. The cost estimates of paddy in Karnataka were 43.8 percent higher in labour (human, bullock, machine), 1.2 times higher in fertiliser & manure, 2.1 times higher in insecticides, 3.7 times higher in interest on working capital, 24 percent higher in rental value of owned land, and 1.2 times higher on interest on fixed capital than CACP projections.
- 5.35 The comparison of cost estimates provided by Andaman and Nicobar Islands for paddy, Gujarat for jowar, Andhra Pradesh and Telangana for bajra, ragi, sunflower and sesamum, Karnataka for bajra and urad, Chhattisgarh for maize, tur and groundnut, Uttarakhand for urad and soybean, and Andhra Pradesh for soybean could not be carried out, as cost projections for these crops and States have not been undertaken by CACP due to non-availability of cost data under the Comprehensive Scheme. The CACP has projected cost of production of paddy for Assam and Uttarakhand; paddy, bajra and cotton for Haryana; paddy and maize for Himachal Pradesh and Jharkhand; paddy, jowar, maize, tur, moong, urad, groundnut, soybean and cotton for Madhya Pradesh and Maharashtra; paddy, ragi, tur, moong, urad, groundnut, sunflower, sesamum, nigerseed and cotton for Odisha; jowar, groundnut for Rajasthan; bajra for Maharashtra; maize for Punjab; ragi for Maharashtra and Tamil

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Nadu; tur, moong for Bihar and Tamil Nadu; moong and sesamum for West Bengal, and sesamum for Karnataka and Madhya Pradesh, but cost comparison could not be done as cost estimates for these crops were not provided by the States.

Issues Related to Sample Size under Comprehensive Scheme

- 5.36 Presently, the cost data for kharif crops collected by DES are available with a time lag of 2 years and due to time lag, the data loses its relevance in cost projection exercise. As online software 'FARMAP 2.0' for uploading the cost data by Implementing Agencies (IAs) of Comprehensive Scheme has been successfully executed by DES, therefore, the time lag in providing cost data should be reduced. The Commission recommends that the time lag in furnishing of cost estimates by DES to CACP should be reduced to the extent possible.
- 5.37 The Commission has analysed the actual cost estimates under Comprehensive Scheme for making projections for 2021-22, and observed that there are certain crops in some States whose shares in the all-India crop area/production as well as in the area and production of crop group in the State are very low. There are also instances, where sample size for certain crops in the State and all-India is inadequate, and may not be a representative sample for cost projection (Annex Table 5.8). The Commission suggests that sample size of paddy in Uttarakhand, maize in Chhattisgarh and Jharkhand, tur in Chhattisgarh and Tamil Nadu, moong in Bihar, urad in Telangana, groundnut in Madhya Pradesh, sunflower in Telangana and sesamum in Karnataka and Telangana may be increased. The sample size of sunflower and nigerseed even at all-India level is too small and can undermine the reliability and representativeness of cost projections, therefore, sample size must be increased for these crops. Since the Commission uses three-year actual cost estimates in forecasting of cost of production, the CS data should be collected every year for sesamum in Andhra Pradesh and nigerseed in Madhya Pradesh for smoothing cost estimates.
- 5.38 The Commission has analyzed the State-wise area and production of the mandated kharif crops and observed that there are certain crops in States, which occupy reasonable share in the all-India area and production or area and production of a crop group in the State, but CS data for these States are not available (Annex Table 5.9). Inclusion of these States under Comprehensive Scheme for these crops would improve representation and reliability of cost projections at all-India level. Therefore, the Commission recommends inclusion of such States under Comprehensive Scheme. The Commission also suggests that Comprehensive Scheme may be implemented in Jammu & Kashmir for paddy and maize, and Tripura for paddy, as these are important crops in the State/UT .



Price Policy for **KHARIF CROPS**

Recapitulation

- 5.39 Average gross returns over CoC A_2 +FL per hectare varied from ₹6,784 for ragi to ₹20,973 for paddy in cereals, ₹6,262 for moong to ₹21,220 for tur in pulses, and ₹8,452 for sesamum to ₹22,241 for groundnut in oilseeds, while returns were negative for nigerseed. In case of cotton, gross returns over CoC A_2 +FL were ₹26,050 per hectare. Efforts should be made to reduce cost, improve crop yields and ensure remunerative prices to farmers, particularly nutri-cereals, pulses and oilseeds growers, to improve income and global competitiveness.
- 5.40 All-India agricultural average daily wage rate at current prices increased by 5 percent in 2020 over 2019 while weighted index of selected farm input prices declined by 6.9 percent. All-India CIPI for kharif crops registered an increase of 5.9 percent in 2021-22 over 2020-21. As labour availability and rising wages have become a constraint and human labour accounted for nearly 50 percent of cost of cultivation of kharif crops, farmers should be encouraged to adopt farm mechanization to improve profitability.
- 5.41 The all-India projected CoP A_2 +FL per quintal is ₹1,293 for paddy, ₹1,825 for jowar, ₹1,213 for bajra, ₹1,246 for maize, ₹2,251 for ragi, ₹3,886 for tur, ₹4,850 for moong, ₹3,816 for urad, ₹3,699 for groundnut, ₹2,633 for soybean, ₹4,010 for sunflower, ₹4,871 for sesamum, ₹4,620 for nigerseed, and ₹3,817 for cotton, for KMS 2021-22. The increase in projected CoP varied from 1.1 percent for moong to 6.6 percent for sesamum in KMS 2021-22 over KMS 2020-21. Relative average gross returns for tur, groundnut and cotton were higher than paddy, while gross returns for paddy were higher than other mandated kharif crops.
- 5.42 Per quintal MSP recommended at ₹1,940 for paddy, ₹2,738 for jowar, ₹2,250 for bajra, ₹1,870 for maize, ₹3,377 for ragi, ₹6,300 for tur, ₹7,275 for moong, ₹6,300 for urad, ₹5,550 for groundnut, ₹3,950 for soybean, ₹6,015 for sunflower, ₹7,307 for sesamum, ₹6,930 for nigerseed, and ₹5,726 for cotton would cover projected A_2 +FL CoP for all States for ragi, tur, moong, soybean, sunflower, sesamum, cotton; and 18 out of 19 States for paddy, 6 out of 7 States for jowar, 4 out 5 States for bajra, 12 out of 13 States for maize, and 9 out of 10 States for urad and groundnut.



Considerations and Recommendations for Price Policy

- 6.1. While recommending Minimum Support Price (MSP), the Commission considers important factors like cost of production, overall demand supply scenario, trends in domestic and global prices, inter-crop price parity, terms of trade between agriculture and non-agriculture sectors, minimum of 50 percent as the margin over the cost of production and the likely impact of the price policy on the rest of the economy. Besides these factors, the price policy is expected to promote rational utilization of land, water and other production resources. The Commission uses the cost estimates furnished by the DES, Ministry of Agriculture and Farmers Welfare under “Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in India”. The Commission organizes regional meetings and stakeholder’s consultations to seek suggestions from State Governments, Central Ministries/Departments, farmers/farmers associations, research institutions, industry representatives/associations and other stakeholders before finalizing its recommendations.

Considerations

Domestic Demand-Supply Scenario

- 6.2. In 2020-21, India is expected to achieve record foodgrains production crossing 303 million tonnes driven by higher production of rice, wheat, maize and pulses. Grain stocks in central pool are estimated at 58.2 million tonnes as on 28th February 2021, 2.8 times higher than foodgrains stocking norms as on 1st April.
- 6.3. Domestic rice production in 2020-21 is likely to increase by 1.6 percent, exports are estimated to be higher and stocks lower in 2020-21 than last year. With marginally higher production, lower stocks and increased exports in 2020-21 prices are projected to remain firm in 2021-22. Total pulses production is expected to reach 24.4 million tonnes, 6 percent more than in 2019-20. Urad and moong production is estimated to rise significantly in 2020-21 but production of tur/arhar is expected to remain almost at the same level as in 2019-20.
- 6.4. Nutri-cereals production is estimated at 17.22 million tonnes in 2020-21, marginally lower than 2019-20 due to lower production of jowar and bajra. Maize production is estimated to increase by 4.8 percent, while production of oilseeds is estimated to show an impressive growth of 12.3 percent. Cotton production is estimated to increase by 1.6 percent in 2020-21 and reach a record level of about 37.1 million bales in 2020-21.

Price Trends

- 6.5. All-India average market price of paddy remained below MSP during the last five marketing seasons but showed rising trend and gap between market price and MSP has reduced during last three seasons. The market prices of maize improved during KMS 2019-20 and were higher than MSP but this trend reversed in 2020-21 and average market price was 26.4 percent below the MSP. Domestic maize prices showed a declining trend during the last three months in contrast to significant increase in world prices. Domestic prices of major kharif pulses, namely, tur, moong and urad improved during KMS 2020-21. Urad prices were higher than MSP due to lower production, while tur prices were marginally lower than MSP. Moong prices were about 10.8 percent below the MSP. In case of oilseeds, soybean prices improved in 2020-21 and were above the MSP while groundnut prices remained below the MSP. Cotton prices showed substantial improvement in 2020-21 as CCI procured about 9.2 million bales of cotton.
- 6.6. According to the latest Food Prices Monitoring and Analysis (FPMA) bulletin (10th March 2021) from the FAO, international prices of rice, maize and sorghum continue to increase. The FAO All Rice price index in February 2021 was 11.4 percent higher than February 2020 level and world maize prices were also substantially higher than the last year. FAO's price index for oilseeds and vegetable oils showed an increasing trend during the last 8-9 months and palm oil and sunflower oil prices recorded sharp increase.

Global Scenario

- 6.7. According to FAO-AMIS, world rice production in 2020-21 is set to reach 513.2 million tonnes, up 1.8 percent from 2019-20, and utilization is forecast to expand at fastest rate in the last seven years to reach 514.4 million tonnes in 2020-21. Global ending stocks in 2020-21 are forecast at 80.3 million tonnes, higher than the 2019-20. World rice trade is expected to expand by 6.9 percent in 2020-21. World maize production is estimated to increase by 1.3 percent in 2020-21 to 1,152.8 million tonnes and maize utilization is forecast to increase by 1.9 percent. Maize trade is expected to grow at 7.3 percent in 2020-21, while ending stocks are forecast to be significantly lower than previous season. Global coarse grains production is expected to increase by 1.9 percent in 2020-21, but global stocks are anticipated to contract by (-)4.6 percent. Global oilseeds production is forecast to increase by 3.3 percent in 2020-21 at 595.1 million tonnes but global stocks are forecast to fall by (-)13.4 percent. Soybean production is forecast to expand by 9.5 percent in 2020-21 but ending stocks are expected to be much lower at 22 million tonnes in 2020-21 compared with 35.4 million tonnes in 2019-20.

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- 6.8. According to International Cotton Advisory Committee, world cotton production is forecast to fall by about 2 million tonnes, while consumption is forecast to increase by nearly 2 million tonnes and as a result, ending stocks are forecast to decrease by about 1.4 percent in 2020-21.

Trade Performance

- 6.9. India has improved its share in world agricultural exports from 1.7 percent in 2010 to 2.1 percent in 2019 and in world agricultural imports from 1.3 percent in 2010 to 1.5 percent in 2019. India's agricultural exports, which grew at an average annual rate of 8.4 percent during 2016-19, declined in 2019-20 by 7.6 percent over previous year, while agricultural imports increased by 4.9 percent in 2019-20. However, in 2020-21 (April-January), India's total merchandise exports declined by about 13.6 percent year-on-year but agricultural exports registered growth of about 16.8 percent during the same period due to steep rise in global commodity prices. In contrast, agricultural imports remained virtually unchanged during the period and led to increase in agricultural trade surplus from ₹71 thousand crore in April-January 2019-20 to ₹107 thousand crore in April-January 2020-21.
- 6.10. Global trade was severely affected by COVID-19 in the first half of 2020, but recovered in Q3 and Q4 of 2020. According to UNCTAD, value of global merchandise trade is predicted to fall by 5.6 percent compared with last year and the largest fall in merchandise trade since 2009. The share of agricultural commodities in the total merchandise exports was 9.7 percent in 2019. The world merchandise exports increased by 2.2 percent per year during 2008-2019, while, exports of agricultural products increased by 3.1 percent during the same period. The highest increase in exports of agricultural products among the top ten exporters was recorded by Argentina (15%), and Mexico (3%) while Indonesia experienced the biggest decline (-8%), followed by Canada (-6%) and Brazil (-5%). While COVID-19 has affected world trade in some sectors significantly, but most of the agri-food sectors (with the exception of tobacco and beverages) have been stable or recorded some increase in Jan-Sep 2020 relative to Jan-Sep 2019.

Procurement Operations and Efficacy

- 6.11. Procurement of rice increased significantly from 44.4 million tonnes in 2018-19 to 52 million tonnes in 2019-20, an increase of 17.1 percent. The increase is attributed to higher procurement in Telangana, Chhattisgarh, Andhra Pradesh, Odisha, Haryana, Uttar Pradesh and Tamil Nadu. Rice procurement during KMS 2020-21 was significantly higher than KMS 2019-20. The share of rice procured as percent of total production varied widely across major rice producing States ranging from a high of 89.6 percent in Punjab to 11.7 percent in West Bengal. The number of farmers benefited from rice procurement operations increased from 72.3 lakh in 2017-18 to about 1.25 crore in 2019-20.



- 6.12. Rice and wheat stocks in central pool as on 28th February 2021 were about 57.8 million tonnes, which were marginally lower than the last year stock, but significantly higher than stocking norms as on 1st April. The rice stocks were 8.8 percent lower than the previous year stocks but more than double the stocking norms. However stocks of the wheat were of 7.3 percent higher than the previous year stocks and 3.7 times more than the stocking norms. Procurement of pulses has increased significantly from about 4.6 lakh tonnes in 2010-11 to 2014-15 to nearly 73 lakh tonnes during 2015-16 to 2019-20. During 2018-19, a record quantity of about 41.9 lakh tonnes of pulses was procured by NAFED under the PSS. Due to improvement in prices, procurement was low in 2019-20. In case of oilseeds, procurement under PSS increased from about 9 lakh tonnes in 2010-11 to 2014-15 to about 48.3 lakh tonnes during 2015-16 to 2019-20. During 2019-20, procurement of oilseeds under PSS was 18.2 lakh tonnes against 16.1 lakh tonnes in the preceding year. Since procurement under PSS is undertaken at the request of the State Government, their effective participation is needed to make the Scheme successful.

Drivers of Productivity

- 6.13. In the face of declining land availability for agriculture, improving crop productivity is the only solution for uninterrupted supply of food and enduring farm profitability. The productivity levels of various crops in India are lower than world average yields and benchmark countries. Investment in technology, irrigation, agriculture R&D and infrastructure and improved access to extension and other services are crucial in increasing crop productivity and profitability. Large yield gaps exist in almost all the crops and there is considerable scope to raise yields to meet rising demand.

Terms of Trade

- 6.14. The farmers' terms of trade index (FToT), which increased from 87.8 in 2004-05 to about approximately 103 in 2010-11, remained around 98 during the current decade and was recorded at 100.28 in 2019-20. Increase in minimum support prices, rise in global agricultural prices and high food inflation were responsible for improvement in FToT during the period 2004-05 to 2010-11. On the other hand, low global commodity prices and steep rise in agricultural wages, diesel and other farm inputs have led to lower FToT index during the current decade.

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Cost of Production and Profitability

- 6.15. The A_2+FL CoC was highest in paddy (₹46,889/ha) among cereals, in tur/arhar (₹38,188/ha) among pulses and groundnut (₹52,319/ha) in oilseeds. Cotton has the highest CoC A_2+FL (₹58,742/ha) among all mandated kharif crops. The gross returns over A_2+FL are maximum for cotton at ₹26,050 per hectare, followed by groundnut (₹22,241/ha), tur (₹21,220/ha), paddy (₹20,973/ha), maize (₹15,219/ha), and lowest for moong at ₹6,262 per hectare while nigerseed has negative returns. All-India average gross returns as percentage of CoC A_2+FL were highest at 55.6 percent for tur, followed by paddy (44.7%), cotton (44.3%), sunflower (44.3%), and lowest for ragi (17.2%). Analysis of inter-crop parity reveals that paddy has highest profitability among all cereals, while cotton, groundnut and tur/arhar are more profitable than paddy and all other crops are losing out in relation to paddy. The projected A_2+FL CoP of mandated kharif crops for 2021-22 season are estimated to be ₹1,293/qlt for paddy, ₹1,825/qlt for jowar, ₹1,213/qlt for bajra, ₹1,246/qlt for maize, ₹2,251/qlt for ragi, ₹3,886/qlt for tur/arhar, ₹4,850/qlt for moong, ₹3,816/qlt for urad, ₹3,699/qlt for groundnut, ₹2,633/qlt for soybean, ₹4,010/qlt for sunflower, ₹4,871/qlt for sesamum, ₹4,620/qlt for nigerseed and ₹3,817/qlt for cotton.
- 6.16. Keeping all these factors in mind, the Commission recommends the following non-price policy measures and MSPs of mandated kharif crops.

Non-Price Policy Recommendations

Review Open Ended-Procurement Policy

- 6.17. The open-ended procurement policy has led to consistently excessive stocks of rice and wheat with Government agencies and over-exploitation of groundwater resources and distorted cropping pattern in the Indo-Gangetic plains. For example, about 79 percent blocks in Punjab and 61 percent blocks in Haryana were in over-exploited category with stage of groundwater extraction to the level of 166 percent in Punjab and 137 percent in Haryana in 2017. As against less than 7 percent share of paddy in total cropped area in Punjab in 1970-71, about 39.6 percent area was under paddy cultivation in the State in 2018-19, while in Haryana, area under paddy cultivation has increased from 5.4 percent to 22.1 percent during the same period. On the other hand, the share of pulses, oilseeds, maize and other crops has significantly declined.
- 6.18. The Commission recommends that Central Government should review open-ended procurement policy for rice and wheat and take a policy decision to procure total marketed surplus from small and marginal farmers, who constitute 86 percent of total operational holding and a fixed quantity from farmers having more than two hectare farm size. The Commission also suggests that the Central and State Governments should prepare a special programme for promoting crop diversification in Punjab, Haryana and western Uttar Pradesh. Efforts should be made to strengthen



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rice procurement operations in other major rice producing States like West Bengal, Uttar Pradesh, Assam, Bihar, etc. to meet at least the State requirements under NFSA and other Welfare Schemes.

Special Scheme for Crop Diversification in Indo-Gangetic Plains

- 6.19. There is a need to reorient policy direction and adopt measures that reduce distortions and encourage demand-driven sustainable crop diversification. Maize, pulses and oilseeds have great potential for crop diversification in rice-wheat cropping system areas of Indo-Gangetic plains. However, due to low profitability, high risks and lack of effective procurement system in these crops compared to competing crop like rice, farmers do not adopt crop diversification. Therefore, concerted efforts should be made to provide better prices, appropriate incentives, supportive marketing, and procurement mechanism to farmers for other crops. The Commission has made conscious efforts over last few years to realign the MSPs in favour of oilseeds, pulses and nutri-cereals to encourage farmers shift larger area under these crops. However, there is a need to strengthen procurement system for such crops by strengthening Price Support Scheme (PSS) and promoting Price Deficiency Payment Scheme (PDPS) and Private Procurement and Stockist Scheme (PPSS) under PM-AASHA.
- 6.20. Government of India is implementing Crop Diversification Programme (CDP), a sub scheme of Rashtriya Krishi Vikas Yojana (RKVY), in Punjab, Haryana and western Uttar Pradesh to diversify paddy area towards alternative crops since 2013-14. Similarly, Punjab and Haryana Governments have also launched various Schemes for crop diversification in the State. The Commission suggests that a comprehensive programme should be prepared for crop diversification in Punjab, Haryana and western Uttar Pradesh and both the Central and State Governments should fund the programme for minimum five years and incentivize farmers for crop diversification.

Review and Strengthen PM-AASHA

- 6.21. Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA) comprising of Price Support Scheme (PSS), Price Deficiency Payment Scheme (PDPS) and Private Procurement and Stockist Scheme (PPSS) was launched in 2018 to ensure Minimum Support Price (MSP) to farmers. Under PDPS and PPSS components, all oilseeds under the MSP are covered. However, performance of the Scheme has remained far from satisfactory. For example, allocation to PM-AASHA has significantly declined during the last three years, from ₹1,500 crore in 2019-20 to ₹500 crore in 2020-21 and ₹400 crore in 2021-22. The expenditure under the Scheme was ₹313.18 crore in 2019-20 (20% of allocation) and no expenditure has been incurred up to 12th March 2021 during 2020-21. The Scheme has the potential of benefiting the farmers but there is an urgent need to review PM-AASHA and address implementation issues. The Commission suggests that a committee comprising of representatives from Central and State Government and private sector should be constituted to review

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the Scheme and recommend changes to make it effective. The Commission also recommends that maize should be included under the PDPS and PPSS.

Effective Participation of States in Price Support Scheme (PSS)

- 6.22. Pulses are procured under PSS, while States/UTs can choose either PSS or PDPS for a particular oilseed in a given procurement season for the entire State. The PSS is implemented at the request of the concerned State/UT Government subject to certain conditions. Under the Scheme, Central Government can procure 25 percent of production of the commodity and in case State/UT Government intends to procure over 25 percent of production, the State Governments can procure at their own cost and through own agencies. In case the State Government intends to procure quantities beyond 25 percent and up to 40 percent of production through Central Agencies, then the State Government will use it for PDS and other Welfare Schemes, at own cost.
- 6.23. Although there has been a significant increase in procurement of pulses and oilseeds during the last few years but market prices of some crops in some States remained below the MSP. Despite low market prices during 2018-19 and 2019-20, sanctioned quantity was lower than procurement limit of 25 percent production in both oilseeds and pulses during the last two seasons and even the actual procurement was much less than the sanctioned quantity in most of the States. Therefore, as procurement under PSS is done at the request of the State Governments/UTs, State Governments should take pro-active measures to strengthen procurement operations under PSS. In addition, private sector needs to be encouraged and supported to participate in procurement operations and create better market linkages. The Commission is of the view that PDPS and PPSS are better options than physical procurement in case of oilseeds.

Promotion of Nutri-cereals as Healthy Foods

- 6.24. Nutri-cereals, which have high nutrient content such as protein, essential fatty acids, dietary fibre, vitamins, minerals, etc., were a traditional staple food of the dryland regions in the country but their consumption has significantly declined over the past few decades. However, people's eating and dietary patterns are changing and demand for healthy and local foods is increasing. Thus, it is best opportunity to promote nutri-cereals, as there exists considerable market potential. One of the key drivers to create demand for the nutri-cereals is inclusion of nutri-cereals in PDS and other Welfare Schemes, which can lead to positive nutritional and health outcomes. Government of Odisha has launched a "Special Programme for Promotion of Millets in Tribal Areas" to revive millets in rainfed areas and promote procurement and household consumption through inclusion of millets in PDS and other welfare schemes. The Commission recommends that nutri-cereals growing States should develop effective mechanism of procurement and distribution of these cereals under NFSA and other welfare schemes to ensure remunerative prices to farmers and better nutrition to consumers.



- 6.25. It is necessary to reorient research efforts to develop appropriate technologies for value-addition and health food-products, which will help in boosting demand for nutri-cereals from urban population. There is need to create awareness on nutritional aspects of nutri-cereals, improve productivity and ensure better prices to farmers.

Improve Crop Productivity

- 6.26. Given rising food demand due to burgeoning population and depleting land resources, raising productivity of crops need to be accorded a high priority. However, Indian yields are much lower than benchmark countries and world average. The relative stagnation in yields in recent decades in some high-productivity regions underscores the need for more investment in new technologies. The key drivers for increasing agricultural productivity include quality seed and other inputs, irrigation, improved access to extension and credit, investment in productivity enhancing technologies and adoption of innovative technologies and practices by farmers. Stable and supportive policy and regulatory environment to increase private sector participation and encourage entrepreneurship and innovations will help in improving crop productivity. Recent farm sector reforms will attract private investment and access to improved technology and quality inputs, which will help in improving productivity and farm incomes.

Bridging Yield Gaps

- 6.27. Large gaps exist between the average farmer yield and potential yield in most crops with wide spatial variation in India. Bridging yield-gap by accelerating technological dissemination and its adoption by the farmers is one of the major sources of raising yield. Although productivity level of kharif crops has improved, still significant yield gaps exist in cereals, pulses and oilseeds in almost all the States of the country. It is imperative to narrow or bridge these wide gaps to enhance productivity and production to meet growing requirements. The policy discourse involving integrated and holistic approaches should be reoriented from input-intensive to knowledge-intensive agriculture to bridge these yield gaps.

Promote Balanced Use of Fertilizers

- 6.28. Fertilizer pricing has led to imbalanced use of N, P and K as price of urea has remained fixed while prices of P and K fertilizers have increased significantly leading to widening differential between prices of urea and P&K fertilizers leading to excess use of N at the expense of P&K fertilizers. This has distorted the NPK ratio and has led to imbalanced use of nutrients.

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- 6.29. The Commission recommends that price of urea should be increased in phased manner and the quantity of subsidized urea per hectare should be fixed based on information from soil health card, extent of irrigation, etc. On the other hand, subsidy on P and K fertilizers should be increased to contain prices of potassic and phosphatic fertilisers to promote balanced use of nutrients without putting any additional burden on farmers and the Government. Efforts should be made to create awareness about balanced use of fertilizers among farmers, encourage manufacturing of customized and value-added fertilizer products and making them available to farmers.

Farm Mechanization

- 6.30. In order to address the issue of labour scarcity and rising wages, particularly during peak agricultural season, there is a need to promote farm mechanization on a mission mode. This will enhance competitiveness as well as farm profitability. Since majority of Indian farms are small and fragmented, investment in large machinery is not a viable option. Therefore, expansion of agricultural machinery services through Custom Hiring Centres (CHCs) offers the possibility of increased mechanization on such farms. There is a need to develop sustainable agricultural mechanization strategies and supportive policies that can promote agricultural mechanization practices and technologies among farmers. Both public and private sector should work together to support innovations in mechanization and disseminate knowledge on agricultural mechanization to promote mechanization initiatives at the field level

Agricultural Credit

- 6.31. The concerted efforts to increase flow of credit to agriculture have resulted in more than three times increase in volume of agricultural credit during the last decade. However, there are several challenges of accessibility in credit to small and marginal farmers/tenant farmers/share croppers/oral lessees/landless labourers, regional disparity in distribution of agricultural credit, presence of non-institutional sources, etc. For example, the ratio of agricultural credit to gross value added from crop sector is more than 214 percent in Tamil Nadu and 102 percent in Punjab, while it is very low in States like West Bengal (32%), Madhya Pradesh (24%) and Jharkhand (22%). Therefore, appropriate policy initiatives should be taken for improving the credit off-take by small and marginal farmers, in Central, Eastern and North-eastern States and address issue of over-borrowing in some States.
- 6.32. It is worth mentioning that Government of India has launched Kisan Credit Card (KCC) saturation drive to provide universal access to institutional concessional credit to all farmers with special focus on coverage of PM-KISAN beneficiaries and banks have so far issued KCCs to about 1.8 crore farmers against the target of 2.5 crore. The Commission believes that these initiatives will help in facilitating easy access to institutional credit.

Strengthen Market Infrastructure and Institutions

- 6.33. Poor and fragmented market infrastructure and weak institutions are major constraints in India's agricultural marketing system in rapidly evolving domestic and international markets. The Central Government has introduced far-reaching reforms in agricultural marketing to provide more choices and freedom to both farmers and buyers and create competition. This would help in building more efficient infrastructure and value-chains, and better price discovery.
- 6.34. Agriculture Infrastructure Fund of ₹ one lakh crore under Aatmanirbhar Bharat Abhiyan will help in creation of post-harvest management infrastructure at farm gate and strengthening APMCs. Development and upgradation of 22,000 rural haats into Gramin Agricultural Markets (GrAMs) through ₹2,000 crore Agri-Market Infrastructure Fund (AMIF) will help in improving farmers' market access. The National Agriculture Market (e-NAM) has made impressive progress as about 1.7 crore farmers are registered and ₹1.22 lakh crore of trade value has been carried out through e-NAMs but there is a need to integrate more markets with e-NAM and establish assaying facilities and other support services.
- 6.35. The budgetary provision of ₹665 crore for 5 years has been made for Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)" to strengthen market linkages. However, there is a need to provide professional managerial support and adequate access to capital and infrastructure facilities for strengthening market linkages and sustaining business operations of FPOs. The Commission believes that these initiatives will help in strengthening post-harvest management and market infrastructure as well as marketing institutions.

Storage and Warehousing

- 6.36. During last decade, there has been a good progress in storage and warehousing infrastructure in the country but there is huge gap in demand and availability of quality storage facilities. Moreover, existing open-ended procurement system is putting additional burden on available storage and warehousing infrastructure. The Negotiable Warehousing Receipts (NWRs) system, which was launched in 2011 to provide loan to farmers against the warehouse receipts to prevent distress sale by farmers, has not witnessed substantial growth and limited popularity owing to the physical availability of warehouses, complicated procedure and poor awareness level that limit the use of loan against a negotiable warehouse receipt (NWR). The Commission recommends that additional storage and warehousing facilities should be created in private and public sector and existing storage systems be upgraded. Special efforts should be made to create awareness, popularize and incentivize negotiable warehouse receipt for promoting pledge finance scheme.

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Direct Income Support: PM-KISAN

6.37. Pradhan Mantri Kisan SAMman Nidhi (PM-KISAN), which was launched to provide direct income support to farmers, has made good progress and more than ₹1.15 lakh crore (up to 24th February 2021) has been disbursed to 10.75 crore farmer families since the inception of the Scheme. The Scheme has been able to create reliable database of farmers, which will help in effective implementation of other Schemes. Several State Governments have also implemented similar Schemes. On the other hand, performance of Pradhan Mantri Kisan Maandhan Yojana (PM-KMY), social security Scheme, has been slow and concerted efforts are needed to raise awareness among farmers and increase participation of eligible farmers in the Scheme.

Commodity Markets Outlook and Regional Crop Planning

6.38. With rising income and demographic changes, food habits of Indian households are changing from staple food such as cereals to high-value food commodities such as milk, meat, eggs, fish, fruits, vegetables, etc. At aggregate level, total food production is adequate to meet the domestic demand and sustaining food security. However, at disaggregated level, there exists a mismatch between demand and supply. Production of commodities like paddy and sugar is surplus over the domestic demand, whereas commodities like pulses, edible oils, etc. are deficit. Further, existing cropping patterns in many regions are not compatible with the resources endowments, e.g. paddy in Punjab, Haryana and western Uttar Pradesh, sugarcane in Maharashtra. Therefore, it is warranted to identify optimum crop plan at regional level, which is compatible with available natural resources and demand conditions. In this context, the Commission recommends to prepare commodity markets outlook to provide necessary information for developing efficient regional optimum crop plans.

Distortions in Agricultural Markets

6.39. Agricultural markets in India are subjected to various distortions ranging from domestic marketing to restrictions on stockholding, high fees/charges, bonus on MSP, trade restrictions, etc. Government of India has taken several initiatives to remove some of these distortions by making amendments in Essential Commodities Act (ECA) and introduced reforms in agricultural marketing system. Some State Governments impose high market fee, rural development fee and other charges and pay additional bonus over MSP announced by the Central Government, which distort agricultural markets and crowd out private trade. Bonus on selected crop(s) affects inter-crop parity and discourage farmers from crop diversification. High fees/taxes/charges result in higher procurement incidentals leading to high economic cost of grains. The Commission has taken note of the fact that Arhtiyas charges in



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Punjab and Haryana have been delinked from MSP (*ad valorem* rate) and charges have been provided based on rupees per quintal (specific rate), which is a welcome step. It would help in containing procurement incidentals and reduce subsidy burden. The Commission recommends that States should be persuaded to reduce such charges and procurement should be restricted in States which levy high fees/incidental charges and/or pay bonus.

MSP Awareness and Publicity

6.40. Several studies have revealed that there is lack of awareness among farmers about MSP and procurement operations. The Commission strongly recommends that coordinated efforts should be made to give wide publicity of MSP and various components of PM-ASHAA, details of procurement centers, procurement period, registration/documents requirements, information about procurement agencies as well as Fair Average Quality (FAQ) specifications of grains.

Issues Related to Sample Size in Cost Estimation

6.41. In certain crops and States, the sample size under the 'Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in India' is inadequate, which can adversely affect the reliability of cost estimates. The Commission, therefore, reiterates its earlier recommendation of increasing sample size to have more reliable cost estimates.

Price Policy Recommendations

6.42. Considering all these factors, the Commission recommends the following MSPs of different kharif crops: Paddy (Common) ₹1,940 per quintal; Paddy (Grade A) ₹1,960 per quintal; Jowar (Hybrid) ₹2,738 per quintal; Jowar (Maldandi) ₹2,758 per quintal; Bajra ₹2,250 per quintal; Ragi ₹3,377 per quintal; Maize ₹1,870 per quintal; Tur ₹6,300 per quintal; Moong ₹7,275 per quintal; Urad ₹6,300 per quintal; Groundnut ₹5,550 per quintal; Sunflower Seed ₹6,015 per quintal; Soybean (Yellow) ₹3,950 per quintal; Sesamum ₹7,307 per quintal; Nigerseed ₹6,930 per quintal; Cotton ₹5,726 per quintal for medium staple and ₹6,025 per quintal for long staple (Table 6.1).

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Table 6.1: MSPs Recommended for KMS 2021-22

(₹/qtl)

Crop	Projected A ₂ +FL Cost for KMS 2021-22	MSP KMS 2020-21	Recommended MSP for KMS 2021-22	MSP as percent of A ₂ +FL
Paddy-Common	1293	1868	1940 (3.9)	150
Paddy-Grade A	-	1888	1960 (3.8)	-
Jowar-Hybrid	1825	2620	2738 (4.5)	150
Jowar-Maldandi	-	2640	2758 (4.5)	-
Bajra	1213	2150	2250 (4.7)	185
Ragi	2251	3295	3377 (2.5)	150
Maize	1246	1850	1870 (1.1)	150
Tur/Arhar	3886	6000	6300 (5.0)	162
Moong	4850	7196	7275 (1.1)	150
Urad	3816	6000	6300 (5.0)	165
Groundnut	3699	5275	5550 (5.2)	150
Sunflower Seed	4010	5885	6015 (2.2)	150
Soybean (Yellow)	2633	3880	3950 (1.8)	150
Sesamum	4871	6855	7307 (6.6)	150
Nigerseed	4620	6695	6930 (3.5)	150
Cotton (Medium Staple)	3817	5515	5726 (3.8)	150
Cotton (Long Staple)	-	5825	6025 (3.4)	-

Note: Figures in parenthesis represent increase in MSP over the previous year.

The Commission is of the considered view that these non-price and price policy recommendations would incentivize farmers to adopt new technologies, promote crop production pattern toward meeting the changing consumer demands and emerging market opportunities and make Indian *Krishi* and *Kisan* Aatmanirbhar.

(Vijay Paul Sharma)
Chairman

(Naveen P. Singh)
Member (Official)

(Anupam Mitra)
Member Secretary

31st March 2021

Considerations and Recommendations for Price Policy



Annexures

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Annex Table 1.1 : All-India Estimates of Area under Principal Crops

(million hectares)

Crop		2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21*
Rice	Kharif	40.81	37.62	38.05	40.14	38.91	39.45	39.83	39.66	39.85	39.35	39.96	39.01	39.45
	Rabi	4.73	4.30	4.81	3.87	3.84	4.69	4.28	3.84	4.15	4.42	4.19	4.65	4.53
	Total	45.54	41.92	42.86	44.01	42.75	44.14	44.11	43.50	43.99	43.77	44.16	43.66	43.98
Wheat	Rabi	27.75	28.46	29.07	29.86	30.00	30.47	31.47	30.42	30.79	29.65	29.32	31.36	31.58
Jowar	Kharif	2.89	3.24	3.07	2.62	2.43	2.28	2.27	2.14	2.06	2.06	1.75	1.76	1.54
	Rabi	4.64	4.55	4.31	3.63	3.79	3.52	3.89	3.94	3.57	2.96	2.34	3.07	2.55
	Total	7.53	7.79	7.38	6.25	6.21	5.79	6.16	6.08	5.62	5.02	4.09	4.82	4.10
Bajra	Kharif	8.75	8.90	9.61	8.78	7.30	7.81	7.32	7.13	7.46	7.48	7.11	7.54	7.29
Maize	Kharif	6.89	7.06	7.28	7.38	7.21	7.31	7.56	7.18	7.84	7.43	7.33	7.55	8.03
	Rabi	1.28	1.20	1.27	1.40	1.46	1.76	1.62	1.63	1.79	1.95	1.70	2.02	1.68
	Total	8.17	8.26	8.55	8.78	8.67	9.07	9.19	8.81	9.63	9.38	9.03	9.57	9.70
Ragi	Kharif	1.38	1.27	1.29	1.18	1.13	1.19	1.21	1.14	1.02	1.19	0.89	1.00	1.07
Barley	Rabi	0.71	0.62	0.71	0.64	0.70	0.67	0.71	0.59	0.66	0.66	0.58	0.59	0.69
Nutri/ Coarse Cereals	Kharif	20.83	21.31	22.05	20.75	18.82	19.27	18.95	18.23	18.99	18.71	17.53	18.31	18.34
	Rabi	6.62	6.37	6.29	5.67	5.94	5.95	6.22	6.15	6.01	5.57	4.61	5.67	4.92
	Total	27.45	27.68	28.34	26.42	24.76	25.22	25.17	24.39	25.01	24.29	22.15	23.99	23.27
Cereals	Kharif	61.64	58.92	60.10	60.89	57.73	58.72	58.78	57.89	58.84	58.06	57.50		
	Rabi	39.10	39.13	40.17	39.40	39.78	41.11	41.97	40.42	40.95	39.65	38.12		
	Total	100.74	98.05	100.27	100.29	97.52	99.83	100.75	98.31	99.79	97.71	95.62		
Tur (Arhar)	Kharif	3.38	3.47	4.37	4.01	3.89	3.90	3.85	3.96	5.34	4.44	4.55	4.53	4.55
Gram	Rabi	7.89	8.17	9.19	8.30	8.52	9.93	8.25	8.40	9.63	10.56	9.55	9.70	10.72
Urad	Kharif	2.02	2.23	2.51	2.36	2.44	2.35	2.49	2.72	3.48	4.35	4.73	3.70	3.21
	Rabi	0.65	0.73	0.74	0.86	0.69	0.72	0.76	0.90	1.00	0.93	0.88	0.83	0.91
	Total	2.67	2.96	3.25	3.22	3.13	3.06	3.25	3.62	4.48	5.28	5.60	4.53	4.11
Moong	Kharif	2.24	2.46	2.85	2.61	1.97	2.34	2.03	2.76	3.37	3.26	3.83	3.52	3.81
	Rabi	0.60	0.63	0.76	0.78	0.74	1.04	0.99	1.07	0.96	0.98	0.92	1.06	0.93
	Total	2.84	3.07	3.51	3.39	2.72	3.38	3.02	3.83	4.33	4.24	4.75	4.58	4.74
Lentil (Masur)	Rabi	1.38	1.48	1.60	1.56	1.42	1.34	-			1.55	1.36	1.30	1.5
Pulses	Kharif	9.81	10.58	12.32	11.19	9.95	10.33	9.99	11.31	14.36	13.93	14.83	13.54	13.18
	Rabi	12.29	12.70	14.08	13.27	13.30	14.88	13.56	13.60	15.08	15.88	14.33	14.45	15.81
	Total	22.09	23.28	26.40	24.46	23.26	25.21	23.55	24.91	29.45	29.81	29.16	27.99	28.99
Foodgrains	Kharif	71.45	69.51	72.42	72.08	67.69	69.05	68.77	69.21	73.20	72.00	72.33	70.86	70.98
	Rabi	51.39	51.83	54.25	52.67	53.09	55.99	55.53	54.01	56.03	55.53	52.45	56.13	56.84
	Total	122.83	121.33	126.67	124.75	120.78	125.04	124.30	123.22	129.23	127.52	124.78	126.99	127.81
Groundnut	Kharif	5.29	4.62	4.98	4.32	3.93	4.65	4.01	3.84	4.58	4.14	4.13	4.16	5.12
	Rabi	0.88	0.86	0.88	0.95	0.79	0.86	0.76	0.76	0.76	0.75	0.60	0.66	0.73
	Total	6.16	5.48	5.86	5.26	4.72	5.51	4.77	4.60	5.34	4.89	4.73	4.83	5.85
Sesamum	Kharif	1.81	1.94	2.08	1.90	1.71	1.68	1.75	1.95	1.67	1.58	1.42	1.62	1.63
Nigerseed	Kharif	0.39	0.38	0.37	0.36	0.31	0.30	0.23	0.25	0.26	0.22	0.16	0.14	0.11
Soybean	Kharif	9.51	9.73	9.60	10.11	10.84	11.72	10.91	11.60	11.18	10.33	11.13	12.19	13.00



Price Policy for **KHARIF CROPS**

Annex Table 1.1 : All-India Estimates of Area under Principal Crops

(million hectares)

Crop		2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21*
Sunflower	Kharif	0.66	0.57	0.32	0.26	0.30	0.25	0.22	0.16	0.17	0.14	0.12	0.13	0.10
	Rabi	1.15	0.91	0.61	0.47	0.53	0.42	0.37	0.33	0.21	0.15	0.14	0.10	0.13
	Total	1.81	1.48	0.93	0.73	0.83	0.67	0.59	0.49	0.38	0.28	0.26	0.23	0.23
Rapeseed/ Mustard	Rabi	6.30	5.59	6.90	5.89	6.36	6.65	5.80	5.75	6.07	5.98	6.12	6.86	6.85
Safflower	Rabi	0.29	0.29	0.24	0.25	0.18	0.18	0.17	0.13	0.17	0.08	0.05	0.05	0.05
Total Oilseeds	Kharif	18.53	17.97	18.23	18.42	18.32	19.65	18.21	18.86	18.67	17.23	17.71	19.28	20.82
	Rabi	9.03	7.99	9.00	7.89	8.16	8.40	7.39	7.22	7.51	7.28	7.09	7.86	8.00
	Total	27.56	25.96	27.22	26.31	26.48	28.05	25.60	26.09	26.18	24.51	24.79	27.14	28.82
Sugarcane		4.42	4.17	4.88	5.04	5.00	4.99	5.07	4.93	4.44	4.74	5.06	4.60	4.85
Cotton		9.41	10.13	11.24	12.18	11.98	11.96	12.82	12.29	10.83	12.59	12.61	13.48	13.34
Jute		0.79	0.81	0.77	0.81	0.78	0.76	0.75	0.73	0.71	0.69	0.67	0.63	0.63
Mesta		0.12	0.09	0.10	0.10	0.09	0.08	0.06	0.05	0.06	0.06	0.04	0.04	0.04
Jute & Mesta		0.90	0.91	0.87	0.90	0.86	0.84	0.81	0.78	0.76	0.74	0.70	0.67	0.66

*Second Advance Estimates (2020-21)

Source : Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare

Price Policy for KHARIF CROPS



Annex Table 1.2 : All-India Estimates of Production of Principal Crops

(million tonnes)

Crop		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21*
Rice	Kharif	80.65	92.78	92.37	91.50	91.39	91.41	96.30	97.14	102.04	102.28	103.75
	Rabi	15.33	12.52	12.87	15.15	14.09	13.00	13.40	15.62	14.44	16.59	16.57
	Total	95.98	105.30	105.24	106.65	105.48	104.41	109.70	112.76	116.48	118.87	120.32
Wheat	Rabi	86.87	94.88	93.51	95.85	86.53	92.29	98.51	99.87	103.60	107.86	109.24
Jowar	Kharif	3.44	3.29	2.84	2.39	2.30	1.82	1.96	2.27	1.74	1.70	1.85
	Rabi	3.56	2.69	2.44	3.15	3.15	2.42	2.60	2.53	1.74	3.08	2.89
	Total	7.00	5.98	5.28	5.54	5.45	4.24	4.57	4.80	3.48	4.77	4.74
Bajra	Kharif	10.37	10.28	8.74	9.25	9.18	8.07	9.73	9.21	8.66	10.36	10.30
Maize	Kharif	16.64	16.49	16.20	17.14	17.01	16.05	18.92	20.12	19.41	19.43	21.41
	Rabi	5.09	5.27	6.05	7.11	7.16	6.51	6.98	8.63	8.30	9.34	8.75
	Total	21.73	21.76	22.26	24.26	24.17	22.57	25.90	28.75	27.72	28.77	30.16
Ragi	Kharif	2.19	1.93	1.57	1.98	2.06	1.82	1.39	1.99	1.24	1.76	1.87
Barley	Rabi	1.66	1.62	1.75	1.83	1.61	1.44	1.75	1.78	1.63	1.72	1.99
Nutri/Coarse Cereals	Kharif	33.08	32.44	29.80	31.20	30.94	28.15	32.44	34.03	31.38	33.61	35.74
	Rabi	10.32	9.58	10.25	12.09	11.92	10.37	11.33	12.94	11.67	14.13	13.63
	Total	43.40	42.01	40.04	43.29	42.86	38.52	43.77	46.97	43.06	47.75	49.36
Cereals	Kharif	113.77	125.22	122.16	122.70	122.34	119.56	128.74	131.16	133.42	135.89	139.49
	Rabi	112.48	116.98	116.63	123.09	112.53	115.66	123.24	128.44	129.71	138.59	139.43
	Total	226.24	242.20	238.78	245.79	234.87	235.22	251.98	259.60	263.13	274.48	278.92
Tur (Arhar)	Kharif	2.86	2.65	3.02	3.17	2.81	2.56	4.87	4.29	3.32	3.89	3.88
Gram	Rabi	8.22	7.70	8.83	9.53	7.33	7.06	9.38	11.38	9.94	11.08	11.62
Urad	Kharif	1.40	1.23	1.43	1.15	1.28	1.25	2.18	2.75	2.36	1.33	1.77
	Rabi	0.36	0.53	0.47	0.55	0.68	0.70	0.66	0.74	0.70	0.75	0.68
	Total	1.76	1.77	1.90	1.70	1.96	1.95	2.83	3.49	3.06	2.08	2.45
Moong	Kharif	1.53	1.24	0.79	0.96	0.87	1.00	1.64	1.43	1.78	1.83	2.02
	Rabi	0.27	0.40	0.40	0.65	0.64	0.59	0.52	0.59	0.67	0.68	0.60
	Total	1.80	1.63	1.19	1.61	1.50	1.59	2.17	2.02	2.46	2.51	2.62
Lentil (Masur)	Rabi	0.94	1.06	1.13	1.02	-	-	-	1.62	1.23	1.10	1.35
Pulses	Kharif	7.12	6.06	5.92	5.99	5.73	5.53	9.58	9.31	8.09	7.92	8.46
	Rabi	11.12	11.03	12.43	13.25	11.42	10.82	13.55	16.11	13.98	15.10	15.96
	Total	18.24	17.09	18.34	19.25	17.15	16.35	23.13	25.42	22.08	23.03	24.42
Foodgrains	Kharif	120.85	131.27	128.07	128.69	128.06	125.09	138.33	140.47	141.52	143.81	147.95
	Rabi	123.64	128.01	129.06	136.35	123.96	126.47	136.78	144.55	143.69	153.69	155.40
	Total	244.49	259.29	257.13	265.04	252.02	251.57	275.11	285.01	285.21	297.50	303.34
Groundnut	Kharif	6.64	5.13	3.19	8.06	5.93	5.37	6.05	7.60	5.39	8.39	8.59
	Rabi	1.62	1.84	1.51	1.66	1.47	1.37	1.41	1.66	1.34	1.56	1.56
	Total	8.26	6.96	4.69	9.71	7.40	6.73	7.46	9.25	6.73	9.95	10.15
Sesamum	Kharif	0.89	0.81	0.69	0.71	0.83	0.85	0.75	0.76	0.69	0.66	0.81
Nigerseed	Kharif	0.11	0.10	0.10	0.10	0.08	0.07	0.09	0.07	0.05	0.04	0.04
Soybean	Kharif	12.74	12.21	14.67	11.86	10.37	8.57	13.16	10.93	13.27	11.23	13.71



Price Policy for **KHARIF CROPS**

Annex Table 1.2 : All-India Estimates of Production of Principal Crops

(million tonnes)

Crop		2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21*
Sunflower	Kharif	0.19	0.15	0.19	0.15	0.11	0.07	0.10	0.08	0.09	0.09	0.08
	Rabi	0.46	0.37	0.36	0.35	0.32	0.23	0.15	0.14	0.13	0.12	0.14
	Total	0.65	0.52	0.54	0.50	0.43	0.30	0.25	0.22	0.22	0.21	0.22
Rapeseed/ Mustard	Rabi	8.18	6.60	8.03	7.88	6.28	6.80	7.92	8.43	9.26	9.12	10.43
Safflower	Rabi	0.15	0.15	0.11	0.11	0.09	0.05	0.09	0.06	0.02	0.04	0.03
Total Oilseeds	Kharif	21.92	20.69	20.79	22.62	19.22	16.70	21.53	21.01	20.68	22.25	25.01
	Rabi	10.56	9.11	10.15	10.13	8.29	8.55	9.75	10.45	10.85	10.97	12.30
	Total	32.48	29.80	30.94	32.75	27.51	25.25	31.28	31.46	31.52	33.22	37.31
Sugarcane		342.38	361.04	341.20	352.14	362.33	348.45	306.07	379.90	405.42	370.50	397.66
Cotton\$		33.00	35.20	34.22	35.90	34.81	30.01	32.58	32.81	28.04	36.07	36.54
Jute#		10.01	10.74	10.34	11.08	10.62	9.94	10.43	9.59	9.50	9.45	9.32
Mesta#		0.61	0.66	0.59	0.61	0.51	0.58	0.53	0.44	0.32	0.43	0.46
Jute & Mesta#		10.62	11.40	10.93	11.69	11.13	10.52	10.96	10.03	9.82	9.88	9.78

*Second Advance Estimates (2020-21)

\$: Million bales of 170 Kg. each

#: Million bales of 180 Kg. each

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Price Policy for KHARIF CROPS



Annex Table 1.3 : All India Estimates of Yield of Principal Crops

(kg/ha)

Crops		2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21*
Rice	Kharif	2081	2018	2120	2311	2374	2319	2295	2305	2417	2469	2553	2622	2630
	Rabi	3019	3064	3185	3238	3353	3232	3291	3382	3230	3531	3444	3569	3655
	Total	2178	2125	2239	2393	2462	2416	2391	2400	2494	2576	2638	2722	2736
Wheat	Rabi	2907	2839	2989	3177	3117	3145	2750	3034	3200	3368	3533	3440	3459
Jowar	Kharif	1055	853	1119	1257	1171	1050	1014	849	954	1104	989	967	1198
	Rabi	904	865	827	741	644	896	808	615	730	853	744	1002	1130
	Total	962	860	949	957	850	957	884	697	812	956	849	989	1155
Bajra	Kharif	1015	731	1079	1171	1198	1184	1255	1132	1305	1231	1219	1374	1413
Maize	Kharif	2048	1740	2285	2234	2246	2346	2249	2236	2413	2706	2648	2572	2667
	Rabi	4387	3694	4003	3765	4152	4050	4414	4006	3896	4436	4893	4631	5223
	Total	2414	2024	2540	2478	2566	2676	2632	2563	2689	3065	3070	3006	3108
Ragi	Kharif	1477	1489	1705	1641	1396	1661	1706	1601	1363	1662	1390	1747	1747
Barley	Rabi	2394	2172	2357	2516	2521	2718	2280	2439	2663	2695	2837	2920	2876
Nutri/Coarse Cereals	Kharif	1371	1119	1500	1563	1583	1619	1633	1544	1708	1818	1790	1836	1948
	Rabi	1735	1525	1641	1689	1725	2034	1915	1686	1885	2323	2532	2491	2768
	Total	1459	1212	1531	1590	1617	1717	1703	1579	1750	1934	1944	1991	2122
Cereals	Kharif	1841	1693	1893	2056	2116	2089	2081	2065	2188	2143	2172		
	Rabi	2721	2649	2800	2969	2931	2995	2681	2862	3010	3074	3170		
	Total	2183	2075	2256	2415	2449	2462	2331	2393	2525	2609	2671		
Tur (Arhar)	Kharif	671	711	655	662	776	813	729	646	913	967	729	859	854
Gram	Rabi	895	915	895	928	1036	960	889	840	974	1078	1041	1142	1085
Urad	Kharif	419	363	557	523	586	490	516	459	626	632	500	359	552
	Rabi	506	587	489	621	679	768	891	773	656	798	796	904	751
	Total	440	418	542	549	606	555	604	537	632	662	546	459	596
Moong	Kharif	348	180	538	475	398	410	428	363	488	440	466	519	529
	Rabi	423	397	354	508	539	620	640	554	546	600	727	645	649
	Total	364	226	514	483	436	475	498	416	500	477	516	548	553
Lentil (Masur)	Rabi	693	697	591	678	797	758	-			1047	901	847	904
Pulses	Kharif	478	397	578	541	594	580	573	489	667	668	546	585	642
	Rabi	804	823	790	831	934	891	842	796	898	1015	976	1045	1010
	Total	659	630	691	699	789	763	728	656	786	853	757	823	842
Foodgrains	Kharif	1654	1496	1669	1821	1892	1864	1862	1808	1890	1951	1957	2029	2085
	Rabi	2264	2203	2279	2430	2431	2435	2232	2342	2441	2603	2740	2738	2734
	Total	1909	1798	1930	2078	2129	2120	2028	2042	2129	2235	2286	2343	2373
Groundnut	Kharif	1063	835	1335	1188	811	1735	1478	1399	1321	1834	1304	2016	1679
	Rabi	1764	1830	1846	1938	1908	1926	1948	1801	1861	2222	2238	2352	2121
	Total	1163	991	1411	1323	994	1764	1552	1465	1398	1893	1422	2063	1734
Sesamum	Kharif	354	303	429	426	402	426	474	436	448	478	485	405	500
Nigerseed	Kharif	297	266	290	269	325	328	328	295	332	321	290	303	364
Soybean	Kharif	1041	1024	1327	1208	1353	1012	951	738	1177	1058	1192	921	1055



Price Policy for **KHARIF CROPS**

Annex Table 1.3 : All India Estimates of Yield of Principal Crops

(kg/ha)

Crops		2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21*
Sunflower	Kharif	540	378	608	566	622	621	512	420	567	627	766	731	857
	Rabi	696	700	748	783	674	826	866	698	737	924	874	1174	1070
	Total	639	576	701	706	655	750	736	608	660	782	826	931	980
Rapeseed/ Mustard	Rabi	1143	1183	1185	1121	1262	1185	1083	1183	1304	1410	1511	921	1055
Safflower	Rabi	642	621	617	580	591	638	515	416	567	673	537	843	699
Nine Oilseeds	Kharif	961	875	1203	1123	1135	1151	1054	884	1153	1219	1168	1154	1201
	Rabi	1097	1146	1174	1155	1244	1207	1126	1186	1300	1436	1531	1397	1537
	Total	1006	958	1193	1133	1168	1168	1075	968	1195	1284	1271	1224	1295
Sugarcane		64553	70020	70091	71667	68254	70520	71512	70720	69001	80198	80105	80497	81979
Cotton		403	403	499	491	486	510	462	415	512	443	378	455	466
Jute		2207	2492	2329	2389	2396	2639	2549	2457	2660	2517	2569	2706	2677
Mesta		1141	1122	1115	1248	1237	1338	1525	1945	1664	1420	1471	1728	2179
Jute & Mesta		2071	2349	2192	2268	2281	2512	2473	2421	2585	2435	2508	2641	2649

*Second Advance Estimates (2020-21)

Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Price Policy for KHARIF CROPS



Annex Table 1.4 : Share of Major States in All-India Production of Mandated Kharif Crops, TE2020-21

Rice	Jowar		Bajra		Maize		Ragi		Tur		Urad		Moong		Groundnut		Sesamum		Nigerseed		Soybean		Sunflower		Cotton			
	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State		
WB	13.6	MH	40.3	RJ	45.9	KA	14.7	KA	64.0	MH	27.9	MP	29.9	RJ	51.9	GJ	40.1	WB	26.6	OD	47.9	MP	44.0	KA	48.7	GJ	22.2	
UP	13.1	KA	18.3	UP	19.9	MP	13.9	TN	16.4	KA	28.2	AP	12.9	MP	9.0	RJ	19.5	MP	22.7	CG	21.3	MH	40.9	OD	10.4	MH	21.9	
PB	10.3	RJ	12.6	HR	10.3	TN	9.3	UK	7.4	UP	7.6	UP	11.7	MH	7.7	TN	11.5	RJ	14.0	AS	7.6	RJ	7.5	HR	7.6	TG	17.6	
AP	7.2	TN	9.1	GJ	7.2	TG	8.6	MH	5.5	GJ	7.0	TN	11.5	KA	5.6	AP	7.6	UP	11.0	MP	7.1	KA	2.6	PB	4.8	RJ	7.6	
OD	6.8	AP	6.0	MP	6.6	MH	7.4	AP	2.7	JH	6.8	RJ	9.7	BR	4.5	KA	5.7	GJ	9.4	JH	4.6	TG	2.2	MH	4.5	HR	6.6	
TG	6.1	UP	4.9	MH	5.1	BR	7.2	OD	1.5	TG	6.5	MH	7.4	AP	3.3	MP	4.4	TN	4.1	AP	3.7	GJ	1.3	BR	4.3	AP	5.9	
CG	5.7	MP	4.5	KA	2.7	WB	7.0	Oth*	2.4	MP	5.7	JH	4.4	TN	3.2	MH	3.3	KA	2.7	MH	3.5	Oth*	1.3	WB	4.3	KA	5.6	
TN	5.6	TG	2.6	TN	1.6	AP	6.4			OD	3.8	GJ	2.8	GJ	3.0	TG	3.3	AP	1.7	GJ	2.1			AP	4.2	MP	5.5	
BR	5.5	GJ	1.3	Oth*	0.7	UP	5.8			AP	2.3	WB	2.1	OD	3.0	WB	2.0	TG	1.7	WB	1.4			TG	3.3	PB	4.4	
AS	4.3	Oth*	0.6			RJ	5.5			TN	1.4	KA	1.6	UP	2.2	UP	1.1	AS	1.2	Oth*	0.9			GJ	2.9	OD	1.5	
MP	4.0					GJ	2.6			Oth*	2.7	AS	1.6	TG	2.1	Oth*	1.4	Oth*	4.9					UP	1.9	TN	1.0	
HR	3.9					HP	2.6					Ch	1.1	WB	1.6										TN	1.8	Oth*	0.2
KA	3.0					JH	1.9					TG	1.1	Oth*	3.1										Oth*	1.2		
MH	2.6					PB	1.5					Oth*	2.2															
JH	2.6					CG	1.1																					
GJ	1.7					Oth*	4.5																					
Oth*	4.1																											

Note: * States having less than 1 percent share in total production has been clubbed as others
Source: Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare



Price Policy for **KHARIF CROPS**

Annex Table 2.1: World Supply and Use of Coarse Grains and Oilseeds

(million tonnes)

Crop	Year	Output	Total Supply	Trade	Total Use	Ending Stocks
Coarse Grains	2017-18	1361.6	1747.4	185.3	1376.1	371.2
	2018-19	1398.1	1768.3	212.8	1421.2	347.1
	2019-20 (Est.)	1411.6	1758.7	207.8	1427.2	331.5
	2020-21 (Proj.)	1438.9	1770.4	228.2	1454.2	316.2
Oilseeds	2017-18	581.6	690.7	176.2	483.6	116.8
	2018-19	600.0	717.1	170.9	489.0	132.4
	2019-20 (Est.)	576.3	708.7	190.2	506.2	110.4
	2020-21 (Proj.)	595.1	705.5	193.9	513.0	95.6

Source: United States Department of Agriculture (USDA)

Price Policy for KHARIF CROPS



Annex Table 2.2: World Supply and Use of Cotton

(million 480-pound bales)

Crop	Year	Beginning Stocks	Production	Imports	Domestic Feed	Exports	Loss	Ending Stocks
Cotton	2017-18	80.3	123.8	41.2	122.8	41.5	0.1	80.8
	2018-19	81.1	118.6	42.4	120.5	41.6	0.0	80.0
	2019-20 (Est.)	80.0	122.1	40.7	102.6	41.3	0.0	98.9
	2020-21 (Proj.)	98.9	114.1	43.9	117.2	43.9	0.1	95.7

Source: United States Department of Agriculture (USDA)



Price Policy for **KHARIF CROPS**

Annex Table 2.3: List of DCP States for Rice and Wheat

States /UTs	DCP adopted for
A&N Islands	Rice
Andhra Pradesh	Rice
Bihar	Rice/Wheat
Chhattisgarh	Rice/ Wheat
Karnataka	Rice
Kerala	Rice
Madhya Pradesh	Rice/ Wheat
Odisha	Rice
Tamil Nadu	Rice
Telangana	Rice
Uttarakhand	Rice/Wheat
West Bengal	Rice/ Wheat
Maharashtra	Rice (w.e.f. 2016-17) Wheat (w.e.f. 2020-21)
Gujarat	Rice/ Wheat
Tripura	Rice (w.e.f. 2020-21)

Source: Food Corporation of India

Price Policy for KHARIF CROPS



Annex Table 2.4: Procurement of Nutri-Cereals and Maize in Major Producing States during KMS 2019-20 and KMS 2020-21

(tonnes)

Period	Commodity	Gujarat	Haryana	Karnataka	Madhya Pradesh	Maharashtra	Uttar Pradesh	Total
KMS 2019-20	Jowar	-	-	9256	5469	8613	23338	-
	Bajra	-	100000	-	76	-	100076	-
	Maize	-	-	-	-	115113	115113	-
	Ragi	-	-	193243	-	-	193243	-
	Total	-	100000	202499	5545	123726	431770	-
KMS 2020-21*	Jowar	-	-	3550	29582	17784	50916	-
	Bajra	5000	75000	-	195351	5005	280356	5000
	Maize	4133	-	-	-	88283	92416	4133
	Ragi	-	-	132580	-	-	132580	-
	Total	9133	75000	136130	224933	111072	556268	9133

Note: * Figures reported as on 05.03.2021

Source: Food Corporation of India



Price Policy for **KHARIF CROPS**

Annex Table 2.5: State-wise Procurement of Pulses (KMS 2018-19 to KMS 2020-21)

(000 tonnes)

Crop	State	2018-19	2019-20	2020-21*
Tur	Maharashtra	54(6.5%)	195(18%)	1.23(0.1%)
	Karnataka	110.6(11.7%)	227.5(20.2%)	8.9(0.8%)
	Gujarat	32.5(10.6%)	11.5(5.5%)	0.5(0.2%)
	Telangana	70.3(36.7%)	51.6(19.4%)	
	Tamil Nadu	0.4(0.8%)	0.5(0.9%)	
	Madhya Pradesh	3.2(1.8%)	-	
	Andhra Pradesh	4.7(10.3%)	50.2(42.5%)	0.1(0.1%)
	Total		275.7(8.3%)	536.4(17.1%)
Moong	Rajasthan	236.2(19.5%)	121.7(9.3%)	12(0.8%)
	Karnataka	29(20.3%)	5.8(4.2%)	-
	Telangana	13.4(27.8%)	5.87(11.1%)	-
	Maharashtra	12.3(6.0%)	4.2(2.8%)	0.6(0.2%)
	Andhra Pradesh	1.6(1.8%)		
	Odisha	2.7(3.8%)		7(9.7%)
	Gujarat	2(4.0%)	2.1(2.0%)	-
	Tamil Nadu	0.4(0.5%)	5.4(7.1%)	0.1(0.2%)
Total		300.3(15.6%)	166.1(8.3%)	20.8(1%)
Urad	Gujarat	9.4(12.8%)	0.09(0.1%)	0(0%)
	Madhya Pradesh	299(25.1%)	-	0(0%)
	Maharashtra	7.7(5.0%)	0(0%)	0(0%)
	Rajasthan	77.4(20.6%)	0(0%)	0.1(0%)
	Tamil Nadu	1.6(0.6%)	0(1.1%)	0(0%)
	Telangana	2(1.9%)	1(3.6%)	0(0%)
	Uttar Pradesh	29.7(9.1%)	-	0(0%)
	Total		510.4(18.5%)	18.4(1%)

Note: 1. * Figures reported as on 08.03.2021

2. Figures in parentheses show procurement as a percentage of total production

Source: National Agricultural Cooperative Marketing Federation of India

Price Policy for KHARIF CROPS



**Annex Table 2.6: State-wise Procurement of Groundnut and Soybean
(KMS 2018-19 to KMS 2020-21)**

(000 tonnes)

Crop	State	2018-19	2019-20	2020-21*
Groundnut	Gujarat	447.6(20.3%)	500.4(10.8%)	202.6(5.2%)
	Rajasthan	232.5(16.8%)	193.1(11.9%)	74.5(3.3%)
	Madhya Pradesh	28.5(6.9%)	-	-
	Uttar Pradesh	8.8(8.7%)	2.5(2.9%)	6.5(5.9%)
	Karnataka	-	3.8(0.8%)	0.1(0%)
	Andhra Pradesh	-	21.1(2.5%)	0.3(0%)
	Total		717.4(10.7%)	721(7.2%)
Soybean	Telangana	15.2(6.5%)	10.7(3.4%)	-
	Rajasthan	3(0.3%)	-	-
	Maharashtra	1.3(0.0%)	0.03(0%)	0.0(0%)
	Total	19.5(0.1%)	10.7(0.1%)	0.0(0%)

Note: 1. * Figures reported as on 08.03.2021

2. Figures in parentheses show procurement as a percentage of total production

Source: National Agricultural Cooperative Marketing Federation of India



Price Policy for **KHARIF CROPS**

Annex Table 2.7: Break-up of Economic Cost of Rice Procurement by FCI

(₹/qtl)

Particulars	2018-19	2019-20 (Unaudited)	2020-21 (RE)
A) Pooled cost of grain	2443.28	2555.77	2697.03
B) Procurement Incidentals (a+b+c+d)	450.40	467.65	466.07
a) Statutory /Obligatory cost	261.26	258.37	279.88
<i>Arthiya commission</i>	53.20	52.12	54.55
<i>Mandi charges & Taxes</i>	102.01	92.03	100.94
<i>Gunny Cost</i>	106.05	114.22	124.39
b) Labour & Transport charges	46.94	47.54	50.56
Mandi Labour	26.47	23.60	25.69
Forwarding charges	1.17	0.05	0.15
Internal Movement	19.30	23.89	24.72
c) Storage. & Interest. charges paid to State Agencies	58.67	78.44	48.96
Storage Charges	0.70	2.40	3.43
Interest	43.71	52.27	45.53
Previous year Arrears Expenditure	14.26	23.77	0.00
d) Other Charges	83.53	83.30	86.67
Other Admin. Chg. to Agencies	44.00	44.88	46.41
Other (Guarantee Fee +Margin towards cost &profit+MillingCharges+Drriage)	39.53	38.42	40.26
C) Distribution Cost	550.42	696.64	836.31
Freight	170.28	132.67	175.92
Handling charges	55.75	71.72	82.52
Storage Charges	38.34	41.70	54.89
Interest	244.35	394.25	469.17
Shortages	14.30	11.54	21.82
Administrative Overheads	27.40	44.76	31.99
Economic Cost (A+B+C)	3444.10	3720.06	3999.41

Note: Figures have been rounded to the nearest rupee.

Source: Food Corporation of India

Price Policy for KHARIF CROPS



Annex Table 2.8: Sanctioned quantity and Procurement of Pulses and Oilseeds under PSS (average of 2018-19 and 2019-20)

Crop	State	Sanctioned quantity by DAC& FW (in tonnes)	Procured quantity (in tonnes)	Procured quantity as percentage of sanctioned quantity
Urad Rabi	Andhra Pradesh	85195	45953.7	53.9
	Odisha	3001.5	2659.5	88.6
	Tamil Nadu	30712.5	2470.3	8
	Telangana	1481.5	1480.5	99.9
Moong Rabi	Odisha	13365	4408.2	33
	Andhra Pradesh	25617.5	6997.5	27.3
Groundnut	Odisha	10030	1274.8	12.7
Sunflower Seed Rabi	Odisha	6000	170.6	2.8
	Haryana	2387.5	2387.5	100
	Telangana	1775	481.7	27.1
Moong Kharif	Haryana	2175	645.4	29.7
	Karnataka	20588	17412.1	84.6
	Maharashtra	34000	8262.1	24.3
	Rajasthan	233862.5	178973.2	76.5
	Tamil Nadu	3812.5	216.9	5.7
	Telangana	13464	9625.1	71.5
Urad Kharif	Maharashtra	31650	3875.9	12.2
	Rajasthan	81187.5	38735.7	47.7
	Gujarat	16912.5	4749.3	28.1
Tur Kharif	Telangana	60962.5	60962.5	100
	Karnataka	204000	169055.4	82.9
	Gujarat	73925	22035	29.8
	Tamil Nadu	7500	451.1	6
	Andhra Pradesh	39037.5	27451.7	70.3
	Maharashtra	237162.5	124461.1	52.5
Soybean Kharif	Telangana	64429	12943.8	20.1
	Maharashtra	625000	654.6	0.1
Groundnut Kharif	Rajasthan	342937.5	212781.2	62
	Gujarat	736137.5	474038.6	64.4
	Uttar Pradesh	20812.5	5654.4	27.2

Source: National Agricultural Cooperative Marketing Federation of India



Price Policy for **KHARIF CROPS**

Annex Table 3.1 : State-wise Number of Machinery Distributed on Individual Ownership Basis and CHCs /Hi-tech Hubs/Farm Machinery Banks Established since Inception of SMAM and CRM Schemes

States	Funds Released (In ₹Crore)		Machines Distributed Under Subsidy To Individual Farmers (Nos.)		CHCs/Hi-tech Hubs/ Farm Machinery Banks Established (Nos.)	
	SMAM	CRM	SMAM	CRM	SMAM	CRM
Andhra Pradesh	621.23	-	251514	-	5566	-
Arunachal Pradesh	36.66	-	26962	-	13	-
Assam	16.70	-	675	-	148	-
Bihar	79.93	-	28554	-	725	-
Chhattisgarh	121.09	-	79967	-	1659	-
Gujarat	55.06	-	23408	-	53	-
Haryana	194.14	499.90	22585	18724	1727	4224
Himanchal Pradesh	137.35	-	39854	-	53	-
Jammu and Kashmir	37.64	-	11084	-	273	-
Jharkand	12.37	-	0	-	282	-
Karnataka	525.13	-	151375	-	544	-
Kerala	89.94	-	24892	-	463	-
Madhya Pradesh	288.24	-	183404	-	777	-
Maharashtra	346.49	-	66864	-	841	-
Manipur	61.05	-	13715	-	511	-
Meghalaya	7.25	-	2157	-	3	-
Mizoram	29.14	-	3897	-	230	-
Nagaland	107.26	-	10494	-	238	-
Odisha	278.95	-	49230	-	1613	-
Punjab	102.68	793.18	11055	26031	1209	21126
Rajasthan	71.01	-	23501	-	730	-
Sikkim	19.91	-	4599	-	30	-
Tamil Nadu	421.65	-	34771	-	2941	-
Telangana	40.66	-	28954	-	195	-
Tripura	115.12	-	32979	-	366	-
Uttar Pradesh	294.74	374.08	134197	25614	4781	5611
Uttarakhand	182.05	-	19386	-	1372	-
West Bengal	53.81	-	6184	-	399	-
NCT of Delhi	-	4.52	-	162	-	-
Dadra & Nagar Haveli	1.10	-	89	-	-	-
Puducherry	5.27	-	402	-	-	-
Ladakh	1.03	-	1314	-	-	-
Total	4354.65	1671.68	1288062	70531	27742	30961

Source: Department of Agriculture, Cooperative and Farmers Welfare

Price Policy for KHARIF CROPS



Annex Table 4.1: Leading Exporters and Importers in World Merchandise Trade, 2019

(US\$ Billion and percentage)

Rank	Exporters	Value (US\$ Billion)	Share (%)	Annual percentage change	Rank	Importers	Value (US\$ Billion)	Share (%)	Annual percentage change
1	China	2499	13.2	0	1	United States of America	2568	13.4	-2
2	United States of America	1646	8.7	-1	2	China	2077	10.8	-3
3	Germany	1489	7.9	-5	3	Germany	1234	6.4	-4
4	Netherlands	709	3.8	-2	4	Japan	721	3.7	-4
5	Japan	706	3.7	-4	5	United Kingdom	692	3.6	3
6	France	570	3.0	-2	6	France	651	3.4	-3
7	Korea, Republic of	542	2.9	-10	7	Netherlands	636	3.3	-1
8	Hong Kong, China	535	2.8	-6	8	Hong Kong, China	578	3.0	-8
	Domestic exports	15	0.1	18		Retained imports (1)	138	0.7	-10
	Re-exports	517	2.7	-7					
9	Italy	533	2.8	-3	9	Korea, Republic of	503	2.6	-6
10	United Kingdom	469	2.5	-4	10	India	484	2.5	-6
11	Mexico	461	2.4	2	11	Italy	474	2.5	-6
12	Canada	447	2.4	-1	12	Mexico	467	2.4	-2
13	Belgium	445	2.4	-5	13	Canada	464	2.4	-1
14	Russian Federation	419	2.2	-5	14	Belgium	426	2.2	-6
15	Singapore	391	2.1	-5	15	Spain	372	1.9	-5
	Domestic exports	184	1.0	-12					
	Re-exports	206	1.1	1					
16	Spain	334	1.8	-4	16	Singapore	359	1.9	-3
						Retained imports (1)	153	0.8	-9
17	Chinese Taipei	331	1.8	-2	17	Chinese Taipei	287	1.5	0
18	India	324	1.7	0	18	Switzerland	277	1.4	-1
19	Switzerland	314	1.7	1	19	Poland	262	1.4	-3
20	United Arab Emirates (1)	280	1.5	-12	20	United Arab Emirates (1)	262	1.4	0
21	Australia	272	1.4	6	21	Russian Federation (2)	254	1.3	2
22	Saudi Arabia, Kingdom of (1)	269	1.4	-9	22	Viet Nam	254	1.3	7
23	Viet Nam	264	1.4	8	23	Thailand	237	1.2	-5
24	Poland	264	1.4	0	24	Australia	222	1.2	-6
25	Thailand	246	1.3	-3	25	Turkey	210	1.1	-9
26	Malaysia	238	1.3	-4	26	Malaysia	205	1.1	-6
27	Brazil	223	1.2	-7	27	Austria	185	1.0	-5
28	Czech Republic	199	1.1	-2	28	Brazil	184	1.0	-2

(Contd...)

Annexures

Annex Table 4.1: Leading Exporters and Importers in World Merchandise Trade, 2019

(US\$ Billion and percentage)

Rank	Exporters	Value (US\$ Billion)	Share (%)	Annual percentage change	Rank	Importers	Value (US\$ Billion)	Share (%)	Annual percentage change
29	Turkey	181	1.0	2	29	Czech Republic	178	0.9	-3
30	Austria	179	0.9	-3	30	Indonesia	171	0.9	-10
31	Ireland	170	0.9	3	31	Sweden	159	0.8	-7
32	Indonesia	167	0.9	-7	32	Saudi Arabia, Kingdom of (1)	142	0.7	4
33	Sweden	161	0.8	-3	33	Hungary	120	0.6	-2
34	Hungary	124	0.7	-2	34	Philippines	113	0.6	-5
35	Denmark	111	0.6	1	35	South Africa (1)	108	0.6	-6
36	Norway	103	0.5	-16	36	Ireland	98	0.5	-9
37	South Africa	90	0.5	-4	37	Denmark	98	0.5	-5
38	Slovak Republic	90	0.5	-4	38	Romania	97	0.5	-1
39	Iraq (1)	89	0.5	-6	39	Slovak Republic	90	0.5	-3
40	Romania	77	0.4	-3	40	Portugal	90	0.5	1
41	Finland	73	0.4	-3	41	Norway	85	0.4	-2
42	Qatar (1)	73	0.4	-14	42	Israel	76	0.4	0
43	Philippines	70	0.4	1	43	Finland	74	0.4	-7
44	Chile	70	0.4	-8	44	Egypt	71	0.4	-2
45	Portugal	67	0.4	-2	45	Chile	70	0.4	-7
46	Argentina	65	0.3	5	46	Greece	62	0.3	-2
47	Kuwait, the State of (1)	65	0.3	-10	47	Ukraine	61	0.3	6
48	Nigeria (1)	62	0.3	2	48	Bangladesh (1)	60	0.3	-1
49	Israel	58	0.3	-6	49	Iraq (1)	57	0.3	7
50	Kazakhstan	57	0.3	-6	50	Colombia	53	0.3	3
	Total of above (3)	17617	93.3	-		Total of above (3)	17675	91.9	-
	World (3)	18889	100.0	-3		World (3)	19238	100.0	-3

Note: (1) Secretariat estimates

(2) Imports are valued f.o.b.

(3) Includes significant re-exports or imports for re-export.

Source: World Trade Statistical Review 2020



Price Policy for KHARIF CROPS



Annex Table 4.2: Top 10 Exporters and Importers of Agricultural Products, 2019

(US\$ Billion and percentage)

	Value	Share in world exports/ imports(%)				Annual percentage change			
	2019	2000	2005	2010	2019	2010-19	2017	2018	2019
Exporters									
European Union	639	38.9	41.9	37.4	35.9	3	8	6	-2
Extra-EU Exports	224	12.6	13.0	11.9	12.6	4	8	6	2
United States of America	165	13.0	9.8	10.5	9.3	2	3	1	-4
Brazil	89	2.8	4.1	5.1	5.0	3	14	6	-5
China	82	3.0	3.4	3.8	4.6	5	4	6	-1
Canada	65	6.3	4.9	3.8	3.7	2	6	4	-6
Thailand	43	2.2	2.1	2.6	2.4	2	18	2	-3
Indonesia	42	1.4	1.7	2.7	2.4	2	26	-7	-8
Argentina	40	2.2	2.3	2.6	2.2	1	-4	-3	15
India	37	1.1	1.2	1.7	2.1	6	17	0	-4
Mexico	36	1.7	1.5	1.4	2.0	8	12	6	3
Sum of top 10	1463	72.5	72.8	71.6	69.6	-	-	-	-
Importers									
European Union	595	36.3	39.2	35.7	33.3	2	9	6	-4
Extra-EU Imports	180	13.0	12.5	11.1	10.1	2	7	6	-4
China	199	3.3	5.0	7.8	11.2	7	17	8	2
United States of America	181	11.6	10.7	8.4	10.1	5	7	6	1
Japan	83	10.5	7.3	5.6	4.6	1	7	5	0
United Kingdom	71	5.8	5.9	4.6	4.0	1	4	6	-3
Canada (1)	41	2.6	2.4	2.3	2.3	3	4	3	1
Korea, Republic of	37	2.2	1.9	1.9	2.1	4	8	10	-3
Russian Federation (1)	31	1.3	1.9	2.6	1.7	-2	16	3	0
Mexico (1)	28	1.9	1.8	1.7	1.6	2	6	5	-8
Hong Kong, China	28	-	-	-	-	3	2	4	-7
Retained imports (2)	19	1.1	0.8	1.0	1.1	4	-1	4	1
Sum of top 10	1492.3	89.5	89.3	82.5	82.0	-	-	-	-

Note: (1) Imports are valued f.o.b.

(2) Secretariat estimates.

Source: World Trade Statistical Review 2020



Price Policy for **KHARIF CROPS**

Annex Table 4.3 : India's Total Exports and Imports vis-a-vis Agricultural Exports and Imports, 2010-11 to 2019-20

(₹ '000 Crore)

Year	Total Exports	Agri-Exports	Total Imports	Agri-Imports
2010-11	1137.0	117.4	1683.5	63.5
2011-12	1466.0	187.2	2345.5	89.0
2012-13	1634.3	232.4	2669.2	117.7
2013-14	1905.0	268.7	2715.4	109.7
2014-15	1896.3	245.5	2737.1	144.8
2015-16	1716.4	222.5	2490.3	163.3
2016-17	1849.4	233.6	2577.7	185.3
2017-18	1956.5	258.7	3001.0	175.8
2018-19	2307.7	283.5	3594.7	161.9
2019-20	2219.9	262.0	3361.0	169.7

Source: Directorate General of Commercial Intelligence & Statistics (DGCIIS)

Price Policy for KHARIF CROPS



Annex Table 4.4 : Major Export Destinations of Indian Rice, 2016-17 to 2019-20

(Quantity in tonnes)

Country	Non-Basmati Rice				Country	Basmati Rice			
	2016-2017	2017-2018	2018-2019	2019-2020		2016-2017	2017-2018	2018-2019	2019-2020
Nepal	583734	624853	768965	681164	Iran	716582	877422	1483698	1319155
Benin	702182	778779	699005	535242	Saudi Arabia	809343	792480	867741	974125
Somalia	354677	328257	326919	346059	Iraq	453741	429966	385733	465890
Guinea	541574	461978	467691	327422	UAE	614657	429326	282378	208524
Togo	54834	123603	252378	302824	Yemen	130653	167688	201927	203330
Cote D' Ivoire	375025	398490	438090	293892	Kuwait	162676	166874	154748	197106
UAE	260219	273770	291576	249533	USA	108991	126791	135608	148391
Liberia	252382	264154	301113	219852	UK	150537	180508	111925	115713
Senegal	676060	833059	720474	217774	Oman	83153	78083	87831	74354
Djibouti	194432	220017	267183	192793	Jordan	40114	52059	49171	65975
Other	2775687	4511535	3114529	1689692	Other	714749	755636	653832	682181
Total	6770804	8818495	7647923	5056247	Total	3985196	4056833	4414591	4454745

Source: Directorate General of Commercial Intelligence & Statistics (DGCIIS)

Annexures



Annex Table – 4.5 : India's Top Import Origins of Pulses

Country	Peas			Chana			Moong		
	2019-2020	2020-2021 (Apr-Dec)	Share in 2019-2020 (%)	2019-2020	2020-2021 (Apr-Dec)	Share in 2019-2020 (%)	2019-2020	2020-2021 (Apr-Dec)	Share in 2019-2020 (%)
Canada	416709	46332	62.5	100306	58919	27.1	18297	360	26.3
Ukraine	86134	0	12.9	96708	105987	26.1	16470	19669	23.7
Russia	67184	0	10.1	53219	11612	14.4	9402	2408	13.5
Other	96669	0	14.5	120435	58997	32.5	25270	5437	36.4
Total	666696	46332	100	370669	235515	100	69439	27874	100

Country	Urad			Lentil			Tur/Arhar		
	2019-2020	2020-2021 (Apr-Dec)	Share in 2019-2020 (%)	2019-2020	2020-2021 (Apr-Dec)	Share in 2019-2020 (%)	2019-2020	2020-2021 (Apr-Dec)	Share in 2019-2020 (%)
Myanmar	303645	246504	97.3	648741	791005	75.9	197360	125950	43.9
UAE	3903	0	1.3	116177	86851	13.6	142561	77532	31.7
Singapore	3336	3493	1.1	62656	21390	7.3	50990	129689	11.3
Other	1195	407	0.4	26886	43298	3.1	58867	27963	13.1
Total	312079	250404	100	854460	942543	100	449777	361134	100

Source: Directorate General of Commercial Intelligence & Statistics (DGCI&S)

Price Policy for **KHARIF CROPS**



Annex Table 4.6: Import Duty on Oils w.e.f. 2nd February, 2021

S. No.	Oil	Import Duty (in %)	AID Cess (%)
1	Crude Palm Oil	15.0	17.5
2	RBD Palmolein	45.0	-
3	RBD Palm Oil	54.0	-
4	Crude Soybean Oil	15.0	20.0
5	Refined Soybean Oil	45.0	-
6	Crude Sunflower Oil	15.0	20.0
7	Refined Sunflower Oil	45.0	-
8	Crude Rapeseed Oil	35.0	-
9	Refined Rapeseed Oil	45.0	-
10	Crude Cottonseed Oil	35.0	-
11	Refined Cottonseed Oil	45.0	-

Source: Central Board of Indirect Taxes and Customs (CBIC)



Price Policy for **KHARIF CROPS**

Annex Table – 4.7 : India’s Agricultural Exports of Major Commodities

(₹ '000 Crore)

S. No.	Commodity	Apr-Dec 2019	Apr-Dec 2020(P)	Increase/decrease over previous year (%)	Share in Total Agri Export in Apr-Dec 2020 (%)
1	Rice	31.2	44.9	43.9	20.1
2	Marine Products	38.5	33.8	-12.0	15.2
3	Spices	19.8	21.6	9.5	9.7
4	Meat and Processed Meat	18.6	18.2	-2.1	8.2
5	Sugar	8.3	12.9	56.0	5.8
6	Cotton Raw incld. Waste	3.7	7.7	105.0	3.4
7	Oil Meals	4.5	6.9	53.2	3.1
8	Oil Seeds	6.6	6.8	1.9	3.0
9	Wood and Wood Products	5.4	5.7	5.4	2.5
10	Castor Oil	5.0	5.0	1.2	2.3
11	Miscellaneous Processed Items	3.4	4.4	30.5	2.0
	Total	192.6	223.0	15.8	100.0

Source: Directorate General of Commercial Intelligence & Statistics (DGCIIS)

Price Policy for KHARIF CROPS



Annex Table – 4.8 : India's Agricultural Imports of Major Commodities

(₹ '000 Crore)

S. No.	Commodity	Apr-Dec 2019	Apr-Dec 2020(P)	Increase/decrease over previous year (%)	Share in Total Agri Import in Apr-Dec 2020 (%)
1	Vegetable Oils	51.2	59.4	16.1	47.0
2	Fresh Fruits	10.0	11.1	10.9	8.8
3	Pulses	8.2	9.3	13.4	7.4
4	Wood and Wood Products	12.8	8.6	-33.2	6.8
5	Cashew	7.2	6.4	-11.7	5.0
6	Spices	8.1	5.8	-27.8	4.6
7	Sugar	2.0	4.3	113.0	3.4
8	Natural Rubber	4.0	3.1	-22.7	2.4
9	Alcoholic Beverages	3.5	2.9	-18.3	2.3
10	Oil Seeds	1.7	2.4	46.0	1.9
	Total	129.8	126.4	-2.6	100.0

Source: Directorate General of Commercial Intelligence & Statistics (DGCIIS)

Annex Table – 4.9 : Quarterly Domestic and International Prices of Kharif Crops

S. No.	Year and Quarter	Paddy*		Maize		Jowar		Arhar		Urad		Moong		Cotton**		
		D	I (Thailand 25% Broken)	I (India 25% Broken)	D	I	D	I	D	I	D	I	D	I	D	I
1	2016 Q1	1442	1673	1447	1456	1080	2136	1174	7591	8083	8521	10374	7009	7436	4569	4196
2	2016 Q2	1432	1827	1545	1519	1145	2123	1163	7999	8785	9925	11254	6623	7022	4509	4425
3	2016 Q3	1461	1802	1533	1578	1028	2289	1018	6816	7384	8855	8905	5463	5246	4788	4963
4	2016 Q4	1489	1635	1479	1433	1026	2283	934	5566	5818	7003	7308	5053	4911	4918	4837
5	2017 Q1	1556	1637	1536	1474	1076	2274	942	4330	4376	6049	5702	4944	5020	5493	5165
6	2017 Q2	1560	1535	1562	1509	1016	2178	1019	3960	3785	5361	5233	5036	5608	4940	5085
7	2017 Q3	1566	1694	1616	1486	972	2367	1077	3842	3760	4925	4340	4776	5340	5007	4757
8	2017 Q4	1638	1686	1589	1356	963	2221	1107	3810	3693	4406	3917	4690	5483	4656	4791
9	2018 Q1	1623	1814	1665	1298	1054	2079	1173	4004	3992	3921	4016	4933	5708	4571	5297
10	2018 Q2	1514	1943	1712	1093	1161	2180	1146	3741	3703	3788	3490	4872	5917	4717	5765
11	2018 Q3	1450	1863	1758	1037	1109	2495	1118	3628	3439	3857	3654	4972	5885	5872	6041
12	2018 Q4	1743	1889	1709	1161	1173	2892	1153	4033	3942	3939	4330	5096	6185	5600	6463
13	2019 Q1	1691	1910	1703	1793	1181	2358	1181	4928	4783	4057	4320	4855	6267	5382	6494
14	2019 Q2	1665	1906	1677	1979	1223	2516	1133	5015	5287	4393	4636	5604	6735	5817	6742
15	2019 Q3	1639	1986	1715	2074	1196	2785	1073	5001	5145	4568	4600	5448	6579	5655	6691
16	2019 Q4	1698	2017	1711	1839	1188	2373	1163	4757	4982	5174	6997	5936	6865	4897	7245
17	2020 Q1	1786	2219	1731	1706	1213	2443	1194	4633	4911	5250	6538	7020	7662	4982	4892
18	2020 Q2	1765	2619	1925	1405	1110	2366	1299	4851	5099	6078	6234	7277	8158	4439	4529
19	2020 Q3	1754	2416	1817	1340	1160	2397	1363	5396	5737	5268	6308	5848	7979	4423	4716
20	2020 Q4	1808	2412	1738	1365	1416	2124	na	5705	6619	6130	6930	6406	8578	4986	5221

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Price Policy for KHARIF CROPS



Annex Table 4.9 : Quarterly Domestic and International Prices of Kharif Crops

S. No.	Year and Quarter	Soybean		Soybean Oil		Soybean Meal		Groundnut		Groundnut Oil		Sunflower Seed		Sunflower Oil	
		D	I	D	I	D	I	D	I	D	I	D	I	D	I
1	2016 Q1	3590	2248	6153	4530	3348	2041	4056	2885	9616	8273	3511	3072	6759	5754
2	2016 Q2	3895	2715	6382	4794	3639	2650	4722	2870	11912	8784	3361	2863	6753	5744
3	2016 Q3	3456	2750	6446	4881	3168	2503	4794	2810	13474	9089	3227	2708	6623	5478
4	2016 Q4	2887	2607	6924	5438	2455	2250	4027	2784	10141	9454	3133	2823	6679	5628
5	2017 Q1	2866	2598	6847	5110	2325	2335	4207	2937	9770	9444	2981	2772	6414	5380
6	2017 Q2	2905	2293	6251	4671	2414	2002	4042	2791	9971	10261	2740	2576	5878	5073
7	2017 Q3	2888	2410	6528	4892	2517	2010	3639	2992	8768	10021	2723	2563	6160	5166
8	2017 Q4	2888	2410	6904	5004	2246	2120	3721	3374	8950	9306	2794	2541	6516	5113
9	2018 Q1	3498	2465	7448	4864	2969	2504	3640	3314	8830	9446	2727	2618	6819	5079
10	2018 Q2	3516	2725	7625	4763	3046	2847	3511	3380	8322	9899	2715	2824	7104	5230
11	2018 Q3	3286	2678	7514	4551	2844	2496	3824	3430	8900	10515	3211	2735	7606	5211
12	2018 Q4	3182	2697	7436	5334	2713	2477	3958	3386	9602	10261	3540	2695	7395	4964
13	2019 Q1	3494	2660	7599	5274	3081	2328	4179	3351	9545	9508	4352	2752	7303	4910
14	2019 Q2	3533	2504	7393	5082	3170	2260	4826	3185	10164	10082	4344	2731	7231	5019
15	2019 Q3	3509	2584	7478	5347	3125	2232	5287	3152	10409	10307	4598	2551	7899	5399
16	2019 Q4	3603	2714	8087	5595	3369	2282	4759	3099	10273	9672	4582	2786	8003	5469
17	2020 Q1	3749	2739	8778	5842	3338	2624	4958	3298	12000	10082	3500	3074	8862	5688
18	2020 Q2	3605	2757	8767	5363	3338	2651	5564	3472	13867	12210	3200	3265	8903	5712
19	2020 Q3	3550	2947	8800	6429	3291	2822	4899	4005	12689	13970	3183	3224	9044	6446
20	2020 Q4	3911	3583	9033	7159	3521	3564	4817	3094	14111	13868	3567	4414	10744	6564

Note : * International Prices of Rice converted into paddy at the ratio of 0.67.

** International Prices of Cotton (lint) converted into Kapas at the ratio of 0.41.

D: Domestic, I : International

Source: 1. Agmarknet for domestic wholesale prices for Paddy, Maize, Jowar, Arhar, Urad, Moong, Cotton, Soybean, Groundnut and Sunflower Seed.
2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare for domestic prices for Soybean Oil, Soybean Meal, Groundnut Oil and Sunflower seed.
3. World Bank for International Prices of Paddy*, Maize, Jowar, Cotton**, Soybean, Soybean Oil, Soybean Meal, Groundnut, Groundnut Oil, Sunflower seed and Sunflower Oil
4. Agriwatch for International Prices of Pulses viz. Arhar, Urad & Moong.

Annexures



Price Policy for **KHARIF CROPS**

**Annex Table 5.1: Average Gross Returns over Actual Cost of Cultivation of Kharif Crops
in Selected States, TE2018-19**

Crop/State	CoC A ₂	CoC A ₂ +FL	GVO	Gross Returns over CoC A ₂		Gross Returns over CoC A ₂ +FL	
	₹/ha			₹/ha (Col.4- Col.2)	Percent (Col.5/ Col.2)*100	₹/ha (Col.4- Col.3)	Percent (Col.7/ Col.3)*100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Paddy							
Andhra Pradesh	53272	60020	103279	50007	94	43258	72
Assam	25309	40177	44992	19683	78	4815	12
Bihar	25670	33909	47375	21705	85	13466	40
Chhattisgarh	28840	37724	61728	32888	114	24003	64
Gujarat	40106	45931	79752	39646	99	33820	74
Haryana	36182	46575	117604	81422	225	71029	153
Himachal Pradesh	14063	32280	54300	40236	286	22020	68
Jharkhand	24389	35036	45642	21254	87	10607	30
Karnataka	45340	55436	95329	49989	110	39893	72
Kerala	61373	71243	106967	45594	74	35725	50
Madhya Pradesh	26354	34722	51214	24860	94	16492	47
Maharashtra	62017	72776	58827	-3190	-5	-13949	-19
Odisha	29863	46689	55074	25211	84	8385	18
Punjab	37821	44320	118862	81041	214	74542	168
Tamil Nadu	49966	58348	82043	32076	64	23694	41
Telangana	52860	63309	93572	40712	77	30263	48
Uttar Pradesh	32611	42417	55473	22862	70	13056	31
Uttarakhand	27536	39291	62704	35168	128	23413	60
West Bengal	39972	60315	66344	26372	66	6029	10
All-India	35346	46889	67862	32516	92	20973	45

(Contd.)

Price Policy for KHARIF CROPS



Annex Table 5.1: Average Gross Returns over Actual Cost of Cultivation of Kharif Crops in Selected States, TE2018-19

Crop/State	CoC A ₂	CoC A ₂ +FL	GVO	Gross Returns over CoC A ₂		Gross Returns over CoC A ₂ +FL	
	₹/ha			₹/ha (Col.4- Col.2)	Percent (Col.5/ Col.2)*100	₹/ha (Col.4- Col.3)	Percent (Col.7/ Col.3)*100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Maize							
Andhra Pradesh	41436	44686	81101	39665	96	36415	81
Bihar	26317	33504	58675	32359	123	25172	75
Gujarat	26474	35158	39551	13077	49	4393	12
Himachal Pradesh	13973	29674	38168	24195	173	8495	29
Jharkhand	29745	37767	60984	31239	105	23217	61
Karnataka	26988	32066	47896	20908	77	15829	49
Madhya Pradesh	25366	32230	40736	15370	61	8506	26
Maharashtra	44769	52383	78747	33978	76	26363	50
Punjab	37871	47166	57916	20045	53	10751	23
Rajasthan	17943	38162	39971	22028	123	1809	5
Tamil Nadu	49058	66850	80145	31087	63	13295	20
Telangana	44965	54409	86840	41875	93	32431	60
Uttar Pradesh	22652	32967	40256	17605	78	7289	22
All-India	29541	39050	54269	24728	84	15219	39
Jowar							
Andhra Pradesh	30328	34799	40252	9924	33	5453	16
Karnataka	15685	19762	30742	15057	96	10980	56
Madhya Pradesh	16896	25758	35192	18296	108	9434	37
Maharashtra	27155	34804	43142	15987	59	8338	24
Rajasthan	13014	26889	29992	16978	130	3103	12
Tamil Nadu	23248	32806	40386	17138	74	7579	23
Telangana	19108	40373	17834	-1274	-7	-22539	-56
All-India	22463	30333	38229	15766	70	7896	26

(Contd.)



Price Policy for **KHARIF CROPS**

**Annex Table 5.1: Average Gross Returns over Actual Cost of Cultivation of Kharif Crops
in Selected States, TE2018-19**

Crop/State	CoC A ₂	CoC A ₂ +FL	GVO	Gross Returns over CoC A ₂		Gross Returns over CoC A ₂ +FL	
	₹/ha			₹/ha (Col.4- Col.2)	Percent (Col.5/ Col.2)*100	₹/ha (Col.4- Col.3)	Percent (Col.7/ Col.3)*100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Bajra							
Gujarat	29484	38014	63390	33906	115	25376	67
Haryana	17063	25491	33155	16091	94	7664	30
Maharashtra	34433	40239	49604	15171	44	9365	23
Rajasthan	9754	23624	27893	18139	186	4269	18
Uttar Pradesh	18569	27121	40196	21627	116	13075	48
All-India	15567	27078	34649	19082	123	7571	28
Ragi							
Karnataka	33120	41917	51730	18610	56	9813	23
Maharashtra	42072	60288	48898	6825	16	-11390	-19
Odisha	11000	20851	12844	1844	17	-8007	-38
Tamil Nadu	30420	37711	33625	3205	11	-4086	-11
Uttarakhand	11042	33599	33916	22874	207	317	1
All-India	28879	39413	46197	17319	60	6784	17
Arhar (Tur)							
Andhra Pradesh	27222	32059	38884	11662	43	6825	21
Bihar	15744	20519	46461	30717	195	25941	126
Gujarat	26212	36378	50081	23869	91	13703	38
Karnataka	22799	26897	46828	24028	105	19931	74
Madhya Pradesh	19428	26155	42317	22889	118	16162	62
Maharashtra	49011	60672	91418	42407	87	30747	51
Odisha	6931	15637	24148	17216	248	8511	54
Tamil Nadu	30919	47101	41742	10823	35	-5359	-11
Telangana	19064	24363	19580	516	3	-4783	-20
Uttar Pradesh	16681	25364	53133	36452	219	27769	109
All-India	30148	38188	59408	29261	97	21220	56

(Contd.)

Price Policy for KHARIF CROPS



Annex Table 5.1: Average Gross Returns over Actual Cost of Cultivation of Kharif Crops in Selected States, TE2018-19

Crop/State	CoC A ₂	CoC A ₂ +FL	GVO	Gross Returns over CoC A ₂		Gross Returns over CoC A ₂ +FL	
	₹/ha			₹/ha (Col.4- Col.2)	Percent (Col.5/ Col.2)*100	₹/ha (Col.4- Col.3)	Percent (Col.7/ Col.3)*100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Moong							
Andhra Pradesh	16928	19105	29894	12966	77	10789	56
Bihar	11362	15787	49832	38470	339	34045	216
Gujarat	16669	25994	31565	14896	89	5571	21
Karnataka	16329	18849	30863	14535	89	12014	64
Madhya Pradesh	15063	18147	20660	5596	37	2512	14
Maharashtra	27949	33923	29414	1465	5	-4509	-13
Odisha	6786	14576	17367	10581	156	2791	19
Rajasthan	9918	18712	25875	15957	161	7163	38
Tamil Nadu	17496	20441	29302	11805	67	8860	43
Telangana	13363	24829	11538	-1825	-14	-13291	-54
Uttar Pradesh	12382	20415	21961	9580	77	1546	8
West Bengal	13275	18742	32134	18859	142	13391	71
All-India	13596	20481	26743	13147	97	6262	31
Urad							
Andhra Pradesh	21425	22917	41809	20383	95	18892	82
Chhattisgarh	19554	29062	21671	2117	11	-7391	-25
Gujarat	19283	27294	30514	11231	58	3220	12
Madhya Pradesh	15829	19759	29970	14141	89	10211	52
Maharashtra	25356	30418	35659	10302	41	5241	17
Odisha	6710	14850	20333	13623	203	5483	37
Rajasthan	14344	22511	22317	7973	56	-193	-1
Tamil Nadu	24031	29834	40388	16357	68	10554	35
Telangana	15724	28118	16890	1167	7	-11228	-40
Uttar Pradesh	10722	16023	21115	10393	97	5092	32
All-India	16939	22023	30375	13436	79	8352	38

(Contd.)



Price Policy for KHARIF CROPS

**Annex Table 5.1: Average Gross Returns over Actual Cost of Cultivation of Kharif Crops
in Selected States, TE2018-19**

Crop/State	CoC A ₂	CoC A ₂ +FL	GVO	Gross Returns over CoC A ₂		Gross Returns over CoC A ₂ +FL	
	₹/ha			₹/ha (Col.4- Col.2)	Percent (Col.5/ Col.2)*100	₹/ha (Col.4- Col.3)	Percent (Col.7/ Col.3)*100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Groundnut							
Andhra Pradesh	36380	42944	38887	2507	7	-4057	-9
Gujarat	48636	58105	92488	43852	90	34383	59
Karnataka	33222	38519	44525	11303	34	6006	16
Madhya Pradesh	38547	47854	52291	13744	36	4436	9
Maharashtra	51691	68277	59950	8259	16	-8327	-12
Odisha	24818	44521	45220	20402	82	699	2
Rajasthan	33822	45266	94917	61095	181	49652	110
Tamil Nadu	47519	58134	72469	24950	53	14335	25
Telangana	67018	77690	102253	35236	53	24564	32
Uttar Pradesh	25846	35687	56422	30576	118	20735	58
All-India	42708	52319	74561	31853	75	22241	43
Soybean							
Chhattisgarh	17869	21892	28448	10580	59	6556	30
Karnataka	20810	22675	30679	9869	47	8005	35
Madhya Pradesh	22065	26800	36071	14006	63	9271	35
Maharashtra	32705	36992	43958	11253	34	6966	19
Rajasthan	15410	22796	33253	17843	116	10457	46
Telangana	33574	35720	56567	22993	68	20847	58
All-India	25254	30001	38763	13508	53	8762	29
Sunflower							
Karnataka	17527	20675	30117	12591	72	9442	46
Odisha	26348	33858	29654	3306	13	-4203	-12
All-India	17685	20964	30241	12556	71	9277	44
Sesamum							
Gujarat	28430	35912	62702	34272	121	26790	75
Karnataka	18090	23855	11251	-6839	-38	-12604	-53
Madhya Pradesh	15165	21468	32072	16907	111	10604	49
Odisha	7309	13249	18741	11432	156	5492	41
Rajasthan	7009	16987	21696	14687	210	4709	28
Tamil Nadu	26350	34684	51011	24661	94	16327	47
Uttar Pradesh	6381	12399	20098	13717	215	7699	62
West Bengal	24528	38628	39522	14994	61	894	2
All-India	14197	22495	30947	16750	118	8452	38

(Contd.)

Price Policy for KHARIF CROPS



Annex Table 5.1: Average Gross Returns over Actual Cost of Cultivation of Kharif Crops in Selected States, TE2018-19

Crop/State	CoC A ₂	CoC A ₂ +FL	GVO	Gross Returns over CoC A ₂		Gross Returns over CoC A ₂ +FL	
	₹/ha			₹/ha (Col.4- Col.2)	Percent (Col.5/ Col.2)*100	₹/ha (Col.4- Col.3)	Percent (Col.7/ Col.3)*100
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Nigerseed							
Odisha	7162	16022	14236	7074	99	-1786	-11
All-India	7162	16022	14236	7074	99	-1786	-11
Cotton							
Andhra Pradesh	55055	59465	78552	23497	43	19087	32
Gujarat	47230	57721	93095	45866	97	35375	61
Haryana	30016	45593	76329	46313	154	30736	67
Karnataka	36380	42843	75265	38885	107	32422	76
Madhya Pradesh	46339	61421	80018	33679	73	18598	30
Maharashtra	51360	62114	81310	29950	58	19196	31
Odisha	34064	51989	68199	34135	100	16209	31
Punjab	50355	58003	115808	65453	130	57805	100
Rajasthan	31256	54800	99793	68537	219	44993	82
Tamil Nadu	61169	85960	89893	28724	47	3933	5
Telangana	54881	63989	74104	19223	35	10115	16
All-India	47365	58742	84792	37427	79	26050	44

Note: All-India CoC, GVO and gross returns of a crop are weighted average of respective CoC, GVO and gross returns of projected States

Source: CACP using CS data

Annex Table 5.2: Month-wise and State-wise Average Daily Wage Rates for Agricultural Labour (Man)

Year/ Month	(₹/Day)														All-India		
	AP	AS	BR	GJ	HR	HP	KA	KL	MP	MH	OD	PB	RJ	TN		UP	WB
2011																	
January	171	117	101	92	197	195	116	335	86	124	126	172	140	175	115	122	129
February	171	118	100	94	202	207	118	335	87	127	133	165	141	181	118	126	131
March	174	123	101	93	202	207	119	341	89	131	128	169	149	184	116	126	133
April	174	122	101	94	203	217	120	341	89	131	133	170	163	186	116	126	136
May	171	122	102	95	203	211	125	341	90	135	135	211	179	178	117	129	139
June	174	123	103	96	203	218	127	350	90	140	133	189	172	199	119	130	140
July	174	127	108	112	205	219	128	360	94	156	133	215	208	200	123	133	151
August	171	128	110	112	206	232	133	372	98	155	134	211	191	208	122	139	150
September	176	115	113	113	206	232	136	376	98	152	137	189	154	206	123	141	145
October	177	127	113	113	205	230	137	392	99	153	135	219	162	209	126	142	148
November	191	131	119	113	214	232	138	454	99	155	138	223	203	213	130	143	157
December	176	127	113	113	206	232	136	376	98	152	137	189	154	206	123	141	145
2012																	
January	177	127	113	113	205	237	137	392	99	153	135	219	162	209	126	142	148
February	203	131	124	115	212	241	145	420	100	153	140	235	172	231	136	151	157
March	195	132	126	116	213	241	147	413	106	156	140	233	198	226	135	152	161
April	207	132	127	117	210	241	146	417	110	156	145	256	194	231	136	159	164
May	198	134	129	118	210	241	148	417	108	154	148	243	202	232	138	161	164
June	185	134	134	118	215	246	156	420	113	165	137	223	204	238	138	160	165
July	191	138	138	125	219	270	163	453	116	171	140	246	223	244	146	169	174
August	193	138	143	126	229	246	168	453	119	170	152	241	213	253	149	167	175
September	205	140	144	126	229	246	170	455	121	173	143	240	214	252	153	165	177
October	199	145	147	126	238	246	173	461	119	174	135	278	216	251	156	165	179
November	210	148	148	126	233	251	178	461	120	173	137	274	217	246	158	171	180
December	224	145	151	127	228	260	177	461	120	182	138	273	221	247	160	173	184

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.2: Month-wise and State-wise Average Daily Wage Rates for Agricultural Labour (Man)

Year/ Month	(₹/Day)														All-India		
	AP	AS	BR	GJ	HR	HP	KA	KL	MP	MH	OD	PB	RJ	TN		UP	WB
2013																	
January	224	146	162	130	246	273	184	465	126	186	136	257	219	253	163	178	187
February	228	157	164	130	245	259	188	465	126	192	134	260	204	259	165	180	187
March	221	154	166	133	245	259	189	461	130	194	136	260	208	265	166	181	189
April	230	153	167	130	247	264	192	478	135	195	137	284	217	265	168	182	193
May	223	150	167	131	245	266	192	489	138	197	141	273	244	266	169	185	197
June	222	162	168	132	244	262	196	483	134	189	143	290	235	271	173	185	196
July	221	178	175	136	258	263	203	485	132	201	150	291	220	272	174	198	198
August	210	183	177	137	317	284	210	487	133	200	157	279	215	275	181	200	199
September	213	178	176	138	312	290	212	490	138	196	150		219	284	181	200	192
October	212	175	175	139	312	298	213	487	144	199	156	283	229	294	180	199	203
November	247	184	205	142	328	337	235	585	140	221	196		248	330	192	224	214
December	242	181	191	165	325	356	228	580	151	216	179	278	247	352	186	229	222
2014																	
January	229	182	194	172	320	336	237	580	155	215	178	276	262	355	191	229	225
February	226	188	200	172	329	336	240	629	158	214	180	275	251	362	191	230	226
March	222	189	202	175	333	341	243	594	161	219	164	279	270	356	195	223	229
April	222	199	204	179	335	352	240	594	163	223	160	306	291	361	201	226	235
May	225	203	206	179	346	335	242	594	165	223	173	307	283	364	202	225	235
June	217	204	207	179	347	341	241	594	164	230	191	304	280	362	199	227	235
July	230	208	218	185	345	345	241	599	173	225	201	302	320	372	200	226	244
August	226	220	220	190	348	343	241	599	173	226	208	304	305	371	202	230	243
September	239	225	220	190	350	343	242	586	180	222	204	310	296	417	198	234	246
October	241	226	222	198	354	339	242	586	171	222	202	310	297	412	201	237	246
November	247	238	220	198	357	330	244	597	170	223	200	312	305	421	199	236	248
December	236	234	220	192	344	349	252	604	176	222	194	307	307	417	199	237	247

(Contd...)

Annexures

Annex Table 5.2: Month-wise and State-wise Average Daily Wage Rates for Agricultural Labour (Man)

Year/ Month	AP	AS	BR	GJ	HR	HP	KA	KL	MP	MH	OD	PB	RJ	TN	UP	WB	All-India
2015																	
January	246	235	219	194	338	363	254	643	178	225	201	286	298	430	200	241	249
February	250	234	221	194	335	363	252	643	179	225	202	290	287	440	202	241	249
March	245	226	228	194	341	363	253	642	179	226	202	281	284	429	205	242	248
April	245	225	230	195	340	363	253	652	182	231	201	277	291	403	209	242	249
May	235	231	231	196	345	362	260	652	183	232	200	292	279	405	208	242	249
June	239	239	237	196	346	351	260	664	188	228	203	311	282	399	207	240	250
July	229	236	242	203	350	361	269	664	186	234	206	311	295	393	211	240	253
August	241	238	246	203	355	366	277	653	188	233	202	304	300	404	214	239	257
September	241	239	246	203	354	372	278	656	190	228	196	303	304	394	214	241	256
October	240	236	244	203	354	367	279	656	189	233	200	298	298	392	215	237	256
November	276	243	243	203	351	374	285	657	182	228	204	301	303	382	216	237	259
December	278	241	245	203	361	379	286	657	180	229	200	301	302	383	219	248	260
2016																	
January	276	235	248	206	354	371	285	664	183	231	199	288	276	381	218	251	256
February	254	233	248	206	359	371	281	666	182	229	195	300	270	383	217	252	253
March	250	234	246	213	359	371	280	670	186	231	206	292	277	406	217	254	256
April	272	240	246	214	362	395	278	670	188	232	198	310	260	406	223	254	257
May	256	241	248	214	368	369	283	665	186	247	199	312	266	400	223	256	258
June	254	255	249	214	368	370	288	665	190	249	210	321	265	396	222	259	260
July	257	255	251	219	368	373	295	665	189	238	207	313	289	408	225	259	264
August	262	253	252	219	368	379	293	665	188	246	213	296	283	411	225	258	264
September	263	254	247	219	368	379	293	665	192	248	209	288	284	412	221	254	263
October	263	254	247	219	368	391	290	665	199	249	203	306	284	409	221	257	265
November	271	254	247	219	368	387	297	665	199	255	207	307	281	406	227	260	267
December	284	259	247	219	368	387	298	665	201	255	217	305	279	406	225	263	269

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.2: Month-wise and State-wise Average Daily Wage Rates for Agricultural Labour (Man)

Year/ Month	(₹/Day)														All-India		
	AP	AS	BR	GJ	HR	HP	KA	KL	MP	MH	OD	PB	RJ	TN		UP	WB
2017																	
January	286	259	249	225	362	417	303	675	204	255	222	321	272	412	226	265	271
February	286	261	251	227	363	387	302	675	207	259	220	318	281	413	229	264	273
March	290	256	250	227	363	417	300	675	208	262	223	318	293	413	231	264	276
April	291	257	251	229	361	408	300	682	210	269	227	326	283	413	270	232	280
May	288	256	251	229	363	406	301	687	214	275	229	335	266	413	232	265	275
June	269	256	251	229	363	404	300	687	215	280	227	335	281	410	233	264	276
July	281	252	255	230	373	425	301	687	217	277	235	327	288	415	241	268	280
August	276	258	258	230	365	423	305	687	216	271	231	327	290	412	247	268	280
September	280	272	260	234	365	429	306	687	215	265	227	345	287	416	248	270	281
October	277	282	259	234	367	399	306	687	211	265	226	348	279	416	246	275	279
November	282	281	261	234	367	423	310	687	208	269	222	342	289	417	244	277	281
December	291	275	262	234	367	419	315	687	209	268	225	349	291	417	243	279	282
2018																	
January	312	277	264	236	367	439	321	691	212	268	226	349	267	424	243	275	283
February	308	278	269	236	367	439	322	691	214	267	225	341	283	444	243	277	286
March	320	278	270	238	368	445	320	698	216	273	223	332	279	445	240	278	287
April	321	280	271	238	367	445	322	698	217	272	223	341	294	445	239	277	290
May	327	279	269	238	368	410	324	698	220	277	229	339	315	445	240	276	294
June	294	282	270	239	368	439	329	719	216	276	227	351	311	440	242	278	291
July	305	289	271	241	376	436	333	719	219	280	229	355	325	440	249	280	297
August	308	289	274	241	383	451	336	726	217	282	231	355	326	449	258	278	299
September	309	291	275	241	380	454	336	726	220	284	230	353	312	452	257	278	298
October	316	277	276	241	373	418	339	735	218	282	231	355	315	460	257	281	299
November	318	280	276	242	371	425	341	735	215	281	230	358	322	460	254	283	300
December	321	277	276	242	376	421	343	735	213	280	232	350	308	469	256	284	298

(Contd...)

Annexures

Annex Table 5.2: Month-wise and State-wise Average Daily Wage Rates for Agricultural Labour (Man)

Year/ Month	AP	AS	BR	GJ	HR	HP	KA	KL	MP	MH	OD	PB	RJ	TN	UP	WB	All-India
2019																	
January	333	279	280	244	380	421	342	737	214	281	231	348	296	469	257	287	299
February	336	277	283	244	388	421	342	737	214	282	232	355	295	476	259	287	300
March	338	277	283	244	387	439	341	737	217	283	229	350	302	479	259	288	302
April	339	274	282	244	387	439	341	737	217	282	229	351	300	479	259	288	301
May	345	274	286	244	390	438	342	737	217	291	226	348	313	482	260	289	305
June	332	312	285	245	386	428	341	741	216	297	230	349	316	479	261	292	306
July	331	313	296	247	387	453	346	741	217	305	234	355	324	487	260	289	310
August	340	314	299	247	396	469	348	741	222	306	239	368	308	495	261	289	311
September	346	319	298	249	392	469	350	741	222	305	236	353	307	496	264	290	312
October	348	319	303	249	394	440	351	741	221	308	237	356	321	492	266	291	314
November	357	322	304	247	394	446	352	741	218	308	237	358	326	496	266	291	316
December	370	323	302	250	384	443	353	741	218	307	239	357	326	497	269	297	317
2020																	
January	376	322	311	250	384	477	355	741	221	309	242	360	326	500	273	299	321
February	377	313	310	250	384	474	357	741	225	305	242	360	327	506	271	302	321
March	374	314	310	250	384	474	355	741	225	305	250	361	311	512	272	301	319
April	374	314	310	250	384	474	355	741	225	305	250	361	311	512	272	301	319
May	374	314	310	250	384	474	355	741	225	305	250	361	311	512	272	301	319
June	370	377	311	244	384	538	373	763	281	314	254	372	324	523	274	306	334
July	364	315	311	248	392	477	367	744	252	315	244	370	326	528	279	339	329
August	356	316	310	248	395	479	357	744	248	315	255	370	315	529	278	315	325
September	363	313	310	252	394	319	356	744	234	324	252	375	315	530	280	308	323
October	367	316	311	252	389	450	358	744	229	329	255	380	314	530	280	309	325
November	373	317	311	252	391	450	362	744	227	329	261	387	315	543	284	314	328

Note: 1. Daily Wage rate - Average of five operations i.e. Ploughing, Sowing, Weeding, Transplanting and HRvesting

2. State-wise data for agricultural wage rate for April and May, 2020 have not been released/published by Labour Bureau. Hence, the wage rate data for March, 2020 have been taken for April and May, 2020 for maintaining continuity in the data.

Source: Labour Bureau, Ministry of Labour & Employment, Government of India



Price Policy for KHARIF CROPS



Annex Table 5.3: Monthly Wholesale Price Index (Base 2011-12=100) of Major Farm Inputs

Year/ Month	High Speed Diesel (HSD)	Fertilizers and nitrogen compounds	Electricity	Agricultural tractors	Lube Oils	Cattle Feed	Fodder	Pesticides and other agrochemical products
2012								
April	111.9	108.1	97.4	103.9	106.0	106.7	107.9	105.9
May	111.5	109.7	100.8	103.9	106.0	109.8	105.3	106.4
June	109.6	111.8	102.5	104.1	110.3	112.6	101.7	106.1
July	108.5	113.5	101.8	103.8	110.3	118.3	107.0	106.5
August	111.0	113.6	98.5	104.2	110.3	123.3	111.3	107.9
September	114.3	114.5	97.4	104.0	110.3	128.7	118.6	109.1
October	108.4	114.6	101.4	104.7	110.3	131.1	122.8	108.3
November	108.0	115.4	101.6	104.6	110.3	131.9	125.0	108.9
December	108.1	114.9	101.3	104.7	110.3	130.9	124.9	108.1
2013								
January	112.0	114.6	104.5	104.7	110.3	129.7	121.9	107.5
February	117.6	114.9	100.6	104.9	110.3	130.5	127.4	107.3
March	118.4	116.1	98.2	105.1	110.3	133.8	128.9	107.5
April	114.6	115.3	101.1	105.9	112.1	138.2	126.3	109.1
May	112.1	115.4	101.0	103.6	112.1	139.5	124.7	105.4
June	117.1	116.2	101.5	104.1	112.1	140.0	131.9	107.0
July	123.4	116.7	102.3	104.1	112.1	140.2	136.2	109.7
August	126.3	116.5	103.1	103.9	115.3	140.4	137.1	111.1
September	132.8	116.7	104.6	104.3	115.3	142.0	138.2	112.3
October	130.1	116.4	103.3	104.7	115.3	142.8	138.6	113.0
November	130.3	116.8	103.1	104.6	115.3	143.4	140.2	113.1
December	132.5	116.6	105.6	104.1	115.3	142.3	141.6	113.8
2014								
January	131.8	116.7	105.8	104.3	115.3	140.6	144.3	113.2
February	131.6	117.0	105.9	104.4	115.3	140.8	149.5	110.9
March	133.1	117.7	106.4	104.8	115.3	141.8	156.0	115.1
April	130.0	116.9	106.0	106.3	117.0	144.0	147.5	118.6
May	131.2	117.8	102.7	106.7	117.0	147.5	139.3	118.6
June	129.0	118.6	101.9	106.4	117.0	146.6	142.3	120.7
July	131.6	118.6	102.7	107.0	117.0	146.0	142.0	120.3
August	130.9	118.6	106.1	106.8	117.0	144.2	145.5	118.3
September	129.6	118.8	104.9	106.9	120.0	141.5	154.1	124.0
October	125.8	119.1	104.3	107.1	120.0	138.9	155.0	121.9
November	112.7	119.4	106.5	107.1	120.0	137.1	156.1	121.9
December	103.5	119.6	108.4	107.6	120.0	137.2	156.9	118.6

(Contd...)



Price Policy for **KHARIF CROPS**

Annex Table 5.3: Monthly Wholesale Price Index (Base 2011-12=100) of Major Farm Inputs

Year/ Month	High Speed Diesel (HSD)	Fertilizers and nitrogen compounds	Electricity	Agricultural tractors	Lube Oils	Cattle Feed	Fodder	Pesticides and other agrochemical products
2015								
January	87.9	119.0	109.1	108.0	120.0	138.4	155.8	122.9
February	79.1	119.5	107.8	108.1	120.0	139.0	150.8	122.5
March	86.6	120.3	107.5	108.1	120.1	138.7	143.1	119.6
April	83.3	120.5	108.0	111.0	120.8	140.8	139.5	121.6
May	91.7	120.9	106.1	110.9	120.8	143.5	138.4	122.9
June	92.7	120.7	105.9	111.0	120.8	144.8	142.8	122.7
July	86.5	120.9	106.5	111.3	120.8	145.0	150.5	124.9
August	73.1	121.7	105.4	110.9	120.8	147.2	165.9	122.7
September	71.3	122.3	106.3	110.7	120.8	148.8	166.6	123.6
October	73.8	122.1	103.1	111.8	120.8	150.6	168.7	124.1
November	74.2	121.4	104.5	111.9	120.8	150.4	172.9	123.1
December	72.3	121.4	104.9	111.9	120.8	150.3	176.2	121.6
2016								
January	57.1	121.6	105.9	111.7	120.8	151.3	173.3	122.6
February	50.3	121.6	103.5	111.7	120.8	153.8	170.3	121.8
March	54.9	121.3	102.9	111.9	120.8	154.4	171.6	119.5
April	59.1	121.3	101.1	113.7	120.8	155.4	167.1	116.7
May	66.5	121.1	102.2	113.0	120.8	155.9	161.4	118.8
June	75.0	121.0	102.8	113.0	120.8	158.9	170.2	117.7
July	74.7	120.3	102.7	113.1	120.8	161.3	170.1	117.1
August	67.0	119.1	103.2	113.6	114.8	161.8	162.7	116.0
September	70.7	118.3	103.8	113.9	114.8	160.9	162.9	116.5
October	72.6	118.3	103.9	113.8	114.8	159.0	165.4	115.3
November	76.5	117.8	105.9	113.8	114.8	158.6	163.5	115.3
December	77.3	116.7	106.2	113.5	114.8	157.9	163.5	115.5
2017								
January	83.4	117.0	107.9	113.8	114.8	157.3	163.0	117.9
February	85.0	116.7	107.4	114.2	114.8	157.6	165.9	117.0
March	84.9	116.8	102.7	113.3	114.8	155.2	159.8	117.2
April	81.5	117.1	103.3	114.0	114.8	155.7	159.5	116.8
May	81.3	117.2	102.8	114.0	114.0	156.4	157.4	117.2
June	80.0	116.4	102.0	114.3	113.3	155.4	157.2	116.9
July	78.8	116.0	102.0	113.5	112.9	154.5	162.4	115.3
August	80.9	116.5	100.6	114.1	112.9	154.6	163.1	114.9
September	82.5	116.5	106.1	114.5	112.9	154.9	160.2	113.7
October	84.5	116.8	106.1	114.3	112.9	154.0	154.7	112.9
November	85.8	116.7	102.7	114.0	112.9	152.9	143.9	114.0
December	87.1	116.8	102.4	113.8	112.9	151.2	132.7	114.8

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.3: Monthly Wholesale Price Index (Base 2011-12=100) of Major Farm Inputs

Year/ Month	High Speed Diesel (HSD)	Fertilizers and nitrogen compounds	Electricity	Agricultural tractors	Lube Oils	Cattle Feed	Fodder	Pesticides and other agrochemical products
2018								
January	89.5	117.4	105.0	114.4	114.0	150.6	132.3	115.3
February	91.3	118.6	105.4	114.3	117.3	154.3	134.3	114.8
March	90.1	118.9	105.4	115.3	117.3	154.4	136.3	117.0
April	92.5	118.3	104.9	115.4	117.3	154.7	137.0	118.2
May	95.4	118.8	110.7	114.8	117.3	154.8	135.2	118.2
June	97.5	118.7	109.6	115.6	117.3	154.9	134.6	117.9
July	96.8	119.3	109.6	116.0	117.3	154.5	128.8	119.1
August	97.0	120.0	109.4	116.5	117.3	156.1	131.0	119.1
September	100.8	120.5	112.4	117.1	130.2	155.1	131.7	120.4
October	104.9	121.6	112.4	116.9	130.2	155.2	130.8	119.9
November	103.1	123.4	109.3	117.5	130.2	159.4	130.5	121.0
December	93.9	123.6	110.7	117.6	130.2	159.6	131.0	119.7
2019								
January	91.2	122.7	110.7	117.7	130.2	160.9	132.7	122.5
February	94.8	123.0	108.2	117.2	130.2	162.3	136.3	123.5
March	96.7	123.0	107.3	118.3	130.2	161.7	138.1	122.8
April	95.5	122.9	107.3	118.2	130.5	165.7	139.0	123.0
May	96.6	123.1	110.7	118.1	131.5	169.0	140.7	124.0
June	94.9	123.4	108.3	118.1	131.6	171.9	147.5	121.9
July	93.2	123.5	108.3	118.9	131.6	175.5	149.2	124.2
August	93.5	123.0	110.7	119.5	131.6	176.8	148.4	122.9
September	93.6	123.1	110.0	120.3	131.6	178.2	146.1	122.8
October	94.9	122.9	110.0	120.3	131.6	178.5	146.3	123.0
November	93.6	123.4	110.0	119.3	131.6	178.0	147.5	122.9
December	94.1	123.9	117.9	119.7	131.6	177.8	152.1	121.8
2020								
January	96.0	122.7	117.9	119.7	131.6	178.5	152.5	121.5
February	91.9	122.4	116.6	120.1	133.0	174.9	150.2	121.7
March	86.5	123.2	113.9	120.1	133.0	171.7	151.1	122.0
April	76.0	123.4	113.9	120.1	133.0	173.6	152.8	120.3
May	62.9	123.7	105.0	120.1	133.0	172.2	150.0	120.8
June	71.6	123.4	101.0	119.2	133.0	171.7	148.6	123.2
July	79.2	123.4	101.0	119.3	133.0	170.1	150.4	124.2
August	80.1	123.7	103.4	120.4	133.5	170.1	148.1	125.3
September	77.8	123.1	105.3	120.5	134.1	169.1	146.3	125.4
October	75.2	123.1	105.3	119.7	136.1	169.1	163.8	125.6
November	75.6	122.9	105.3	119.7	136.1	169.6	175.6	125.7
December	79.8	123.6	105.3	119.5	138.7	171.6	176.4	125.8

Source : Office of the Economic Adviser, Ministry of Commerce and Industry, Government of India



Price Policy for **KHARIF CROPS**

Annex Table 5.4: Projected Cost of Production (A_2 , A_2+FL & C_2) of Kharif Crops for KMS 2021-22 and Production Shares during TE2019-20

States	Cost of Production (₹/qtl)			Shares in Production(%)
	A_2	A_2+FL	C_2	
Paddy				
Andhra Pradesh	870	1005	1459	7.43
Assam	910	1450	1798	4.63
Bihar	889	1167	1533	6.02
Chhattisgarh	863	1129	1490	5.33
Gujarat	1034	1182	1463	1.71
Haryana	900	1158	1867	4.11
Himachal Pradesh	564	1289	1736	0.10
Jharkhand	1025	1407	1863	3.02
Karnataka	971	1180	1635	3.00
Kerala	1172	1560	2044	0.51
Madhya Pradesh	1107	1456	1837	3.98
Maharashtra	2060	2405	2971	2.73
Odisha	990	1548	1897	6.62
Punjab	649	759	1272	11.27
Tamil Nadu	1153	1345	1778	5.92
Telangana	1078	1319	1839	6.01
Uttar Pradesh	990	1287	1735	13.16
Uttarakhand	737	1076	1477	0.57
West Bengal	1049	1584	1935	13.88
All India Wtd. Avg.	980	1293	1727	100.00
Jowar				
Andhra Pradesh	1097	1290	1764	7.43
Karnataka	1742	2165	2888	25.30
Madhya Pradesh	976	1477	1805	8.53
Maharashtra	1446	1852	2482	35.18
Rajasthan	742	1533	1946	10.08
Tamil Nadu	1177	1661	2735	11.44
Telangana	1364	2925	3904	2.03
All India Wtd. Avg.	1351	1825	2478	100.00
Bajra				
Gujarat	864	1112	1432	10.84
Haryana	784	1173	1778	10.64
Maharashtra	2007	2335	2844	6.33
Rajasthan	518	1250	1549	49.78
Uttar Pradesh	603	881	1265	22.41
All India Wtd. Avg.	697	1213	1579	100.00
Maize				
Andhra Pradesh	844	934	1449	8.02

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.4: Projected Cost of Production (A_2 , A_2+FL & C_2) of Kharif Crops for KMS 2021-22 and Production Shares during TE2019-20

States	Cost of Production (₹/qtl)			Shares in Production(%)
	A_2	A_2+FL	C_2	
Bihar	735	934	1291	9.76
Gujarat	1557	2061	2406	2.99
Himachal Pradesh	825	1748	2188	2.84
Jharkhand	786	989	1392	2.07
Karnataka	934	1112	1494	15.25
Madhya Pradesh	940	1194	1497	14.70
Maharashtra	1184	1386	1703	9.53
Punjab	967	1202	1643	1.87
Rajasthan	874	1853	2214	6.55
Tamil Nadu	978	1330	1870	9.84
Telangana	823	1020	1552	10.09
Uttar Pradesh	995	1438	1892	6.48
All India Wtd. Avg.	938	1246	1654	100.00
Ragi				
Karnataka	1898	2384	3069	66.08
Maharashtra	2149	3080	3778	5.96
Odisha	1574	3034	3805	1.74
Tamil Nadu	1261	1576	2658	18.33
Uttarakhand	627	1908	2502	7.89
All India Wtd. Avg.	1690	2251	3004	100.00
Arhar (Tur)				
Andhra Pradesh	3742	4529	6060	2.71
Bihar	1857	2417	3805	0.89
Gujarat	2907	4018	5095	8.43
Karnataka	3091	3616	4961	26.69
Madhya Pradesh	2393	3226	4515	11.90
Maharashtra	3426	4261	5462	28.69
Odisha	2307	5246	6973	3.95
Tamil Nadu	3007	4675	6631	1.47
Telangana	3012	3940	5960	6.87
Uttar Pradesh	2232	3390	5387	8.40
All India Wtd. Avg.	2986	3886	5291	100.00
Moong				
Andhra Pradesh	3218	3699	4698	3.90
Bihar	2590	3671	5597	5.43
Gujarat	3298	5147	6375	5.95
Karnataka	4248	4860	6173	3.44
Madhya Pradesh	3392	4188	5246	11.24
Maharashtra	5314	6433	7920	7.49

(Contd...)



Price Policy for **KHARIF CROPS**

Annex Table 5.4: Projected Cost of Production (A_2 , A_2+FL & C_2) of Kharif Crops for KMS 2021-22 and Production Shares during TE2019-20

States	Cost of Production (₹/qtl)			Shares in Production(%)
	A_2	A_2+FL	C_2	
Odisha	2501	5376	6923	3.59
Rajasthan	2644	4970	6050	48.75
Tamil Nadu	3884	4533	6627	3.41
Telangana	2726	5164	7288	2.47
Uttar Pradesh	2780	4673	5981	2.23
West Bengal	2781	4081	5498	2.11
All India Wtd. Avg.	3110	4850	6110	100.00
Urad				
Andhra Pradesh	2386	2622	4059	13.26
Chhattisgarh	3038	4512	5736	1.11
Gujarat	3130	4521	5534	3.00
Madhya Pradesh	2683	3347	4419	39.46
Maharashtra	5402	6496	7716	5.25
Odisha	2498	5538	7114	0.85
Rajasthan	2319	3637	4635	13.27
Tamil Nadu	3936	4880	6893	11.15
Telangana	1827	3324	5825	1.13
Uttar Pradesh	2982	4421	6131	11.52
All India Wtd. Avg.	2918	3816	5133	100.00
Groundnut				
Andhra Pradesh	3855	4666	5991	9.32
Gujarat	3025	3619	4461	42.63
Karnataka	4506	5227	6614	6.41
Madhya Pradesh	2657	3381	4302	4.40
Maharashtra	4716	6223	7476	3.59
Odisha	2616	4695	6044	0.44
Rajasthan	1363	1824	2663	16.85
Tamil Nadu	3724	4564	6060	11.48
Telangana	2979	3541	4810	3.79
Uttar Pradesh	1835	2588	3425	1.10
All India Wtd. Avg.	3025	3699	4732	100.00
Soybean				
Chhattisgarh	2585	2999	3846	0.55
Karnataka	2218	2419	3237	2.51
Madhya Pradesh	1912	2322	3120	49.29
Maharashtra	2655	3006	3844	37.42
Rajasthan	1871	2769	3425	7.95
Telangana	2670	2917	3872	2.28
All India Wtd. Avg.	2215	2633	3439	100.00

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.4: Projected Cost of Production (A_2 , A_2+FL & C_2) of Kharif Crops for KMS 2021-22 and Production Shares during TE2019-20

States	Cost of Production (₹/qtl)			Shares in Production(%)
	A_2	A_2+FL	C_2	
Sunflower				
Karnataka	3509	4109	5093	84.17
Odisha	2649	3485	4680	15.83
All India Wtd. Avg.	3373	4010	5027	100
Sesamum				
Gujarat	4733	5965	7698	11.55
Karnatak	3338	4388	6576	3.16
Madhya Pradesh	3219	4560	6351	22.65
Odisha	2557	4681	6126	0.55
Rajasthan	2736	6623	8932	12.23
Tamil Nadu	5000	6585	9980	4.07
Uttar Pradesh	2657	5131	7874	11.10
West Bengal	2446	3854	4934	34.70
All India Wtd. Avg.	3077	4871	6653	100.00
Nigerseed				
Odisha	2062	4620	6441	100.00
All India Wtd. Avg.	2062	4620	6441	100.00
Cotton				
Andhra Pradesh	3317	3674	5260	6.32
Gujarat	2683	3279	4386	25.75
Haryana	2291	3482	5255	6.37
Karnataka	3029	3577	5006	5.00
Madhya Pradesh	3250	4304	5539	5.58
Maharashtra	3576	4323	5585	20.26
Odisha	2993	4564	5747	1.50
Punjab	3139	3606	5047	4.55
Rajasthan	1850	3238	4479	6.98
Tamil Nadu	3491	4916	6466	1.17
Telangana	3587	4286	5915	16.52
All India Wtd. Avg.	3054	3817	5169	100.00

Note: 1. Production shares are related to production of projected States mentined in Table

2. All-India CoP of a crop is weighted average of CoPs of projected States mentined in Table

Source: CACP Calculations

Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh				Assam				Bihar					
	2017-18		% change in 2018-19 over 2017-18		2016-17		2017-18		2018-19		2017-18		% change in 2018-19 over 2017-18	
	2018-19	2018-19	2018-19	2018-19	2017-18	2018-19	2018-19	2018-19	2018-19	2018-19	2018-19	2018-19	2018-19	2018-19
Operational Cost														
Human Labour														
Casual	15215	18745	23.2	5590	6164	7098	10.3	15.1	9518	10862	11134	14.1	2.5	
Attached	300	169	-43.7	140	77	366	-45.2	377.1	61	2	4	-95.9	59.3	
Family	7592	5904	-22.2	18302	12990	13314	-29.0	2.5	6908	8145	9663	17.9	18.6	
Total	23107	24817	7.4	24032	19230	20778	-20.0	8.0	16487	19010	20801	15.3	9.4	
Bullock Labour														
Hired	167	325	95.2	133	153	103	14.8	-32.6	0	0	0	-	-	
Owned	493	299	-39.3	9900	10820	6304	9.3	-41.7	112	3	13	-97.6	370.5	
Total	660	624	-5.3	10033	10973	6407	9.4	-41.6	112	3	13	-97.6	370.5	
Machine Labour														
Hired	10383	12456	20.0	3121	3828	4480	22.7	17.0	3926	4242	4474	8.0	5.5	
Owned	411	401	-2.4	732	741	833	1.2	12.5	89	53	167	-40.4	216.0	
Total	10795	12858	19.1	3853	4569	5313	18.6	16.3	4015	4295	4641	7.0	8.1	
Seed	2323	2507	7.9	1118	1198	1332	7.1	11.1	1946	1897	2103	-2.5	10.9	
Fertilisers and Manure														
Fertilisers	7224	7787	7.8	840	739	727	-12.0	-1.7	2981	3045	4013	2.1	31.8	
Manure	1035	2045	97.6	745	633	673	-15.1	6.4	245	188	105	-23.1	-44.3	
Total	8259	9832	19.0	1586	1372	1400	-13.5	2.0	3226	3233	4117	0.2	27.4	
Other Inputs														
Insecticides	3211	4014	25.0	43	11	9	-75.3	-20.4	21	38	44	78.0	17.5	
Irrigation charges	1413	1143	-19.1	441	119	130	-72.9	8.5	2954	3760	5044	27.3	34.2	
Crop Insurance	0	0	-	-	0	0	-	-	-	0	0	-	-	
Payment to Contractor	4636	-	-	-	709	-	-	-	-	0	-	-	-	
Interest on working capital	1468	1565	6.6	713	788	690	10.5	-12.4	683	753	847	10.2	12.5	
Miscellaneous	166	204	23.4	0	15	17	-	12.5	0	0	6	-	1083.3	
Fixed Cost	34784	33008	-5.1	14372	13035	14318	-9.3	9.8	14048	14719	13654	4.8	-7.2	
Rental value of owned land	29895	27987	-6.4	9318	10535	11328	13.1	7.5	11278	12382	11518	9.8	-7.0	
Rent paid for leased-in land	2764	3308	19.7	465	290	696	-37.5	139.7	0	0	0	-	-	

Price Policy for KHARIF CROPS



Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh			Assam			Bihar				
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(%)	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(₹/ha)	(₹/ha)	(₹/ha)	(%)
Land revenue, cesses & taxes	0	0	-	50	125	138	150.4	64	90	106	40.7
Depreciation on implements & Farm buildings	206	159	-22.4	880	520	493	-40.9	420	525	474	24.9
Interest on fixed capital	1919	1554	-19.0	3660	1566	1663	-57.2	2286	1723	1556	-24.6
Total Cost (C₁/ha)	90822	90573	-0.3	56191	52019	50391	-7.4	43491	47707	51271	9.7
A ₁ (₹/ha)	51415	55128	7.2	24911	26929	24086	8.1	23019	25458	28534	10.6
A ₂ +FL(₹/ha)	59008	61032	3.4	43213	39919	37400	-7.6	29927	33603	38197	12.3
Yield(qt/ha)	64	64	-0.1	33	33	35	2.3	31	31	30	0.8
A ₁ (₹/qt)	761	816	7.2	702	734	644	4.5	609	661	752	8.6
A ₂ +FL(₹/qt)	872	906	3.8	1211	1096	1000	-9.4	797	894	1053	12.2
C ₁ (₹/qt)	1340	1340	0.0	1575	1429	1349	-9.3	1157	1270	1416	9.8

(Contd...)

Annexures

Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh				Assam				Bihar					
	2017-18	2018-19	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	
Operational Cost	56038	57565	2.7	41819	38984	36073	-6.8	29443	32988	37617	12.0	14.0		
Human Labour														
Casual	15215	18745	23.2	5590	6164	7098	10.3	9518	10862	11134	14.1	2.5		
Attached	300	169	-43.7	140	77	366	-45.2	61	2	4	-95.9	59.3		
Family	7592	5904	-22.2	18302	12990	13314	-29.0	6908	8145	9663	17.9	18.6		
Total	23107	24817	7.4	24032	19230	20778	-20.0	16487	19010	20801	15.3	9.4		
Bullock Labour														
Hired	167	325	95.2	133	153	103	14.8	0	0	0	-	-		
Owned	493	299	-39.3	9900	10820	6304	9.3	112	3	13	-97.6	370.5		
Total	660	624	-5.3	10033	10973	6407	9.4	112	3	13	-97.6	370.5		
Machine Labour														
Hired	10383	12456	20.0	3121	3828	4480	22.7	3926	4242	4474	8.0	5.5		
Owned	411	401	-2.4	732	741	833	1.2	89	53	167	-40.4	216.0		
Total	10795	12858	19.1	3853	4569	5313	18.6	4015	4295	4641	7.0	8.1		
Seed	2323	2507	7.9	1118	1198	1332	7.1	1946	1897	2103	-2.5	10.9		
Fertilisers and Manure														
Fertilisers	7224	7787	7.8	840	739	727	-12.0	2981	3045	4013	2.1	31.8		
Manure	1035	2045	97.6	745	633	673	-15.1	245	188	105	-23.1	-44.3		
Total	8259	9832	19.0	1586	1372	1400	-13.5	3226	3233	4117	0.2	27.4		
Other Inputs														
Insecticides	3211	4014	25.0	43	11	9	-75.3	21	38	44	78.0	17.5		
Irrigation charges	1413	1143	-19.1	441	119	130	-72.9	2954	3760	5044	27.3	34.2		
Crop Insurance	0	0	-	-	0	0	-	-	0	0	-	-		
Payment to Contractor	4636	-	-	-	709	-	-	-	0	-	-	-		
Interest on working capital	1468	1565	6.6	713	788	690	10.5	683	753	847	10.2	12.5		

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Price Policy for KHARIF CROPS



Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh				Assam				Bihar					
	2017-18		2018-19		2016-17		2017-18		2016-17		2017-18		2018-19	
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	
Miscellaneous	166	204	23.4	0	15	17	-	12.5	0	0	6	-	1083.3	
Fixed Cost	34784	33008	-5.1	14372	13035	14318	-9.3	9.8	14048	14719	13654	4.8	-7.2	
Rental value of owned land	29895	27987	-6.4	9318	10535	11328	13.1	7.5	11278	12382	11518	9.8	-7.0	
Rent paid for leased-in land	2764	3308	19.7	465	290	696	-37.5	139.7	0	0	0	-	-	
Land revenue,cesses & taxes	0	0	-	50	125	138	150.4	10.3	64	90	106	40.7	17.6	
Depreciation on implements & Farm buildings	206	159	-22.4	880	520	493	-40.9	-5.1	420	525	474	24.9	-9.6	
Interest on fixed capital	1919	1554	-19.0	3660	1566	1663	-57.2	6.2	2286	1723	1556	-24.6	-9.7	
Total Cost (C₂/ha)	90822	90573	-0.3	56191	52019	50391	-7.4	-3.1	43491	47707	51271	9.7	7.5	
A ₂ (₹/ha)	51415	55128	7.2	24911	26929	24086	8.1	-10.6	23019	25458	28534	10.6	12.1	
A ₂ +FL(₹/ha)	59008	61032	3.4	43213	39919	37400	-7.6	-6.3	29927	33603	38197	12.3	13.7	
Yield(qt/ha)	64	64	-0.1	33	33	35	2.3	3.2	31	31	30	0.8	-4.5	
A ₂ (₹/qt)	761	816	7.2	702	734	644	4.5	-12.2	609	661	752	8.6	13.7	
A ₂ +FL(₹/qt)	872	906	3.8	1211	1096	1000	-9.4	-8.7	797	894	1053	12.2	17.8	
C ₂ (₹/qt)	1340	1340	0.0	1575	1429	1349	-9.3	-5.6	1157	1270	1416	9.8	11.5	

Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Chhattisgarh				Gujarat				Haryana					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	2018-19	% change in 2018-19 over 2016-17	% change in 2018-19 over 2017-18
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	2018-19	% change in 2018-19 over 2016-17	% change in 2018-19 over 2017-18
Operational Cost	33748	36498	40140	8.2	41501	42012	49402	1.2	45842	44997	46062	46062	-1.8	2.4
Human Labour														
Casual	6549	6651	6556	1.6	14808	8523	15666	-42.4	11383	10172	11091	11091	-10.6	9.0
Attached	11	17	31	63.8	241	140	154	-42.0	302	589	383	383	95.0	-34.9
Family	8371	8829	9454	5.5	4654	6111	6712	31.3	12312	9798	9069	9069	-20.4	-7.4
Total	14930	15497	16041	3.8	19703	14774	22532	-25.0	23997	20559	20542	20542	-14.3	-0.1
Bullock Labour														
Hired	504	128	186	-74.5	2	73	45	4783.3	0	0	0	0	-	-
Owned	2468	2865	4529	16.1	237	393	283	65.7	21	0	0	0	-	-
Total	2972	2993	4715	0.7	239	466	328	95.3	21	0	0	0	-	-
Machine Labour														
Hired	6655	7556	9022	13.6	5057	4426	5198	-12.5	4729	5409	5227	5227	14.4	-3.4
Owned	173	358	267	107.0	1238	1066	3234	-13.9	1203	1801	2874	2874	49.8	59.5
Total	6827	7914	9289	15.9	6295	5492	8431	-12.8	5932	7211	8101	8101	21.6	12.4
Seed	1701	1760	2040	3.5	4920	4541	4287	-7.7	1369	1947	1690	1690	42.2	-13.2
Fertilisers and Manure														
Fertilisers	3288	3194	3723	-2.9	4635	4888	5709	5.4	4663	4791	4618	4618	2.7	-3.6
Manure	1495	1407	761	-5.9	986	2125	1875	115.6	42	19	0	0	-54.0	-
Total	4784	4601	4484	-3.8	5621	7013	7584	24.8	4705	4811	4618	4618	2.2	-4.0
Other Inputs														
Insecticides	1042	1074	1155	3.1	1051	744	1213	-29.2	2291	3042	3865	3865	32.8	27.0
Irrigation charges	413	1588	1215	284.0	2542	2270	3239	-10.7	6414	5716	6053	6053	-10.9	5.9
Crop Insurance	-	217	202	-	-	0	0	-	-	0	0	0	-	-
Payment to Contractor	-	0	-	-	-	5623	-	-	-	608	-	-	-	-
Interest on working capital	769	838	930	9.0	1117	1088	1294	-2.6	1016	1067	1121	1121	5.0	5.1
Miscellaneous	310	16	70	-95.0	14	0	495	-	97	37	71	71	-61.7	91.0

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Chhattisgarh						Gujarat				Haryana								
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	
Fixed Cost	15477	14768	17127	-4.6	16.0	15665	17950	15153	17950	-3.3	18.5	36577	38878	38647	36577	38878	38647	6.3	-0.6
Rental value of owned land	11079	11786	14418	6.4	22.3	10989	13846	11573	13846	5.3	19.6	30851	32177	32157	30851	32177	32157	4.3	-0.1
Rent paid for leased-in land	0	0	0	-	-	2298	1110	701	1110	-69.5	58.5	158	0	43	158	0	43	-	-
Land revenue, cesses & taxes	3	3	2	8.5	-11.7	10	8	7	8	-22.6	12.1	0	0	0	0	0	0	-	-
Depreciation on implements & Farm buildings	1246	722	811	-42.1	12.3	128	289	328	289	156.7	-11.9	398	1062	1163	398	1062	1163	166.9	9.5
Interest on fixed capital	3149	2257	1896	-28.3	-16.0	2240	2697	2544	2697	13.6	6.0	5169	5639	5284	5169	5639	5284	9.1	-6.3
Total Cost (C_f/ha)	49225	51267	57267	4.1	11.7	57166	67352	57165	67352	0.0	17.8	82419	83876	84709	82419	83876	84709	1.8	1.0
A ₁ (₹/ha)	26626	28395	31498	6.6	10.9	39283	44098	36937	44098	-6.0	19.4	34086	36262	38199	34086	36262	38199	6.4	5.3
A ₂ +FL(₹/ha)	34997	37223	40953	6.4	10.0	43936	50810	43048	50810	-2.0	18.0	46398	46060	47268	46398	46060	47268	-0.7	2.6
Yield(qt/ha)	34	35	40	0.9	15.2	44	43	40	43	-8.7	6.0	51	57	47	51	57	47	12.4	-17.3
A ₁ (₹/qt)	703	703	695	0.0	-1.2	759	832	722	832	-4.8	15.2	657	629	807	657	629	807	-4.3	28.4
A ₂ +FL(₹/qt)	916	924	906	0.8	-1.9	851	958	842	958	-1.0	13.8	891	795	989	891	795	989	-10.8	24.4
C ₂ (₹/qt)	1292	1273	1262	-1.5	-0.8	1107	1268	1116	1268	0.8	13.6	1582	1448	1773	1582	1448	1773	-8.5	22.4

Annexures

Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Himachal Pradesh				Jharkhand				Karnataka						
	2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		
	(₹/ha)														
Operational Cost	29453	33051	32570	12.2	-1.5	24565	39433	38298	60.5	-2.9	46065	62813	55861	36.4	-11.1
Human Labour															
Casual	547	2411	2664	340.9	10.5	6546	9853	9662	50.5	-1.9	10518	17917	11907	70.4	-33.5
Attached	0	0	0	-	-	1	0	0	-	-	0	1	7	-	594.9
Family	21295	16842	16513	-20.9	-1.9	7877	12223	11842	55.2	-3.1	9829	10425	10034	6.1	-3.7
Total	21842	19252	19177	-11.9	-0.4	14424	22076	21504	53.1	-2.6	20346	28343	21948	39.3	-22.6
Bullock Labour															
Hired	492	257	257	-47.8	-0.2	6	26	33	323.7	23.0	541	100	185	-81.5	84.7
Owned	1849	718	1769	-61.2	146.3	1065	5981	4626	461.5	-22.7	4172	6399	6204	53.4	-3.0
Total	2341	975	2025	-58.4	107.7	1071	6008	4658	460.7	-22.5	4714	6498	6389	37.9	-1.7
Machine Labour															
Hired	1854	4187	3374	125.8	-19.4	3383	2678	3765	-20.9	40.6	4557	9342	9744	105.0	4.3
Owned	69	1637	1375	2271.7	-16.0	124	68	11	-45.2	-83.7	586	223	251	-61.9	12.4
Total	1923	5824	4748	202.8	-18.5	3507	2745	3776	-21.7	37.5	5142	9565	9995	86.0	4.5
Seed	1950	2027	2153	3.9	6.2	2004	3681	3627	83.7	-1.5	3010	3092	2862	2.7	-7.4
Fertilisers and Manure															
Fertilisers	311	992	1092	219.5	10.0	2634	3031	3251	15.1	7.3	6430	10238	9779	59.2	-4.5
Manure	334	2121	1783	536.0	-15.9	401	505	658	25.9	30.2	2010	64	13	-96.8	-79.5
Total	644	3113	2875	383.4	-7.7	3035	3536	3909	16.5	10.6	8441	10301	9792	22.0	-4.9
Other Inputs															
Insecticides	450	967	775	114.9	-19.8	0	0	0	-	-	2279	2571	2930	12.8	14.0
Irrigation charges	55	398	326	623.7	-18.0	18	561	16	3056.4	-97.2	1026	658	393	-35.9	-40.2
Crop Insurance	-	0	0	-	-	-	0	0	-	-	-	0	0	-	-
Payment to Contractor	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-
Interest on working capital	247	491	487	98.7	-0.9	506	825	802	63.1	-2.8	1098	1588	1389	44.6	-12.5

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Price Policy for KHARIF CROPS



Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Himachal Pradesh				Jharkhand				Karnataka					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	2019-20	% change in 2018-19 over 2017-18	
Miscellaneous	0	5	4	-16.5	0	2	6	-	259.6	9	197	164	2022.4	-16.7
Fixed Cost	12892	15808	16879	6.8	12468	23317	15408	87.0	-33.9	27933	17950	23995	-35.7	33.7
Rental value of owned land	10134	12543	13793	10.0	9914	19143	12480	93.1	-34.8	23945	15715	22218	-34.4	41.4
Rent paid for leased-in land	207	144	156	-30.2	144	0	0	-	-	0	0	0	-	-
Land revenue, cesses & taxes	8	8	8	0.4	53	97	116	84.6	19.5	16	15	16	-4.5	6.3
Depreciation on implements & Farm buildings	530	371	334	-30.0	706	949	747	34.5	-21.3	608	542	369	-10.9	-31.9
Interest on fixed capital	2013	2742	2589	36.3	1652	3127	2064	89.3	-34.0	3364	1678	1391	-50.1	-17.1
Total Cost (C_f/ha)	42345	48860	49448	15.4	37033	62750	53706	69.4	-14.4	73998	80763	79856	9.1	-1.1
A ₁ (₹/ha)	8903	16733	16554	87.9	17589	28257	27319	60.7	-3.3	36861	52946	46213	43.6	-12.7
A ₂ +FL(₹/ha)	30198	33575	33067	11.2	25466	40480	39161	59.0	-3.3	46689	63371	56247	35.7	-11.2
Yield(qt/ha)	21	28	28	32.4	25	39	22	56.5	-42.9	53	35	50	-33.0	41.1
A ₁ (₹/qt)	329	442	449	34.3	572	597	1005	4.5	68.3	637	1434	841	125.2	-41.4
A ₂ +FL(₹/qt)	1099	948	942	-13.7	826	845	1418	2.3	67.9	814	1704	1006	109.4	-40.9
C ₂ (₹/qt)	1536	1377	1410	-10.4	1202	1315	1965	9.4	49.4	1267	2129	1429	68.1	-32.9

Annexures

Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Kerala				Madhya Pradesh				Maharashtra				
	2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18	
	(₹/ha)												
Operational Cost	57001	75970	78854	33.3	32069	33398	36240	4.1	62247	69690	83194	12.0	19.4
Human Labour													
Casual	27158	37614	35398	38.5	3897	5631	6368	44.5	21089	22781	25179	8.0	10.5
Attached	0	9	52	-	77	160	218	106.8	299	6	8	-98.0	31.5
Family	4892	11703	13013	139.2	9412	7864	7829	-16.4	10720	9301	12255	-13.2	31.8
Total	32050	49326	48463	53.9	13387	13656	14415	2.0	32109	32088	37442	-0.1	16.7
Bullock Labour													
Hired	17	9	122	-48.6	204	479	443	135.1	3402	1136	1183	-66.6	4.1
Owined	0	0	0	-	2698	2142	657	-20.6	2874	5929	9856	106.3	66.2
Total	17	9	122	-48.6	2902	2621	1100	-9.7	6277	7065	11039	12.6	56.2
Machine Labour													
Hired	11129	12393	13821	11.4	5802	6165	8335	6.3	6641	9941	11279	49.7	13.5
Owined	53	35	40	-33.9	344	261	735	-23.9	168	365	492	117.1	34.8
Total	11181	12428	13861	11.1	6146	6426	9070	4.6	6809	10306	11771	51.4	14.2
Seed	3214	2613	3614	-18.7	1921	2384	2321	24.1	3023	2514	3075	-16.9	22.3
Fertilisers and Manure													
Fertilisers	4731	3420	5167	-27.7	3017	3087	3224	2.3	3753	5842	7521	55.7	28.7
Manure	2253	3729	3344	65.5	2006	1858	1905	-7.4	5046	2783	6272	-44.8	125.4
Total	6984	7149	8511	2.4	5023	4945	5129	-1.5	8799	8625	13793	-2.0	59.9
Other Inputs													
Insecticides	1854	1085	1760	-41.5	1110	1365	1816	23.0	594	3077	1356	418.2	-55.9
Irrigation charges	118	17	110	-85.9	739	1066	1192	44.2	1639	359	322	-78.1	-10.4
Crop Insurance	-	22	57	-	-	159	180	-	-	0	0	-	-
Payment to Contractor	-	1082	-	-	-	0	-	-	-	1	-	-	-
Interest on working capital	1579	1947	1995	23.3	687	774	861	12.7	1561	1830	2150	17.2	17.5
Miscellaneous	3	292	360	8368.7	155	2	155	-98.5	1436	3825	2247	166.3	-41.3

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Price Policy for KHARIF CROPS



Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

(₹/ha)

Cost Items	Kerala			Madhya Pradesh			Maharashtra								
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18					
Fixed Cost	20273	21108	28246	4.1	33.8	12683	12897	14304	1.7	10.9	15856	18196	18129	14.8	-0.4
Rental value of owned land	19314	19772	26681	2.4	34.9	9573	9217	10714	-3.7	16.2	10398	8916	10106	-14.3	13.3
Rent paid for leased-in land	0	0	106	-	-	0	0	0	-	-	0	0	0	-	-
Land revenue, cesses & taxes	201	184	391	-8.6	112.4	4	3	3	-17.1	0.0	24	32	33	30.2	4.3
Depreciation on implements & Farm buildings	329	394	298	19.8	-24.3	945	632	874	-33.1	38.3	721	1483	905	105.7	-39.0
Interest on fixed capital	428	757	770	76.9	1.7	2162	3045	2714	40.9	-10.9	4712	7767	7085	64.8	-8.8
Total Cost (C₁/ha)	77274	97078	107100	25.6	10.3	44752	46295	50544	3.4	9.2	78103	87886	101323	12.5	15.3
A ₁ (₹/ha)	52640	64845	66635	23.2	2.8	23605	26169	29288	10.9	11.9	52272	61903	71877	18.4	16.1
A ₂ +FL(₹/ha)	57532	76548	79648	33.1	4.0	33017	34033	37117	3.1	9.1	62992	71204	84132	13.0	18.2
Yield(qt/ha)	41	31	48	-23.7	54.9	33	27	30	-18.7	12.8	30	26	27	-14.0	2.9
A ₁ (₹/qt)	1163	1616	1208	38.9	-25.2	631	893	895	41.5	0.3	1445	1935	2196	33.9	13.5
A ₂ +FL(₹/qt)	1275	1918	1460	50.5	-23.9	887	1157	1137	30.4	-1.7	1782	2243	2629	25.9	17.2
C ₂ (₹/qt)	1705	2399	1936	40.7	-19.3	1204	1574	1548	30.7	-1.6	2199	2733	3111	24.3	13.9

Annexures

Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Odisha				Punjab				Tamil Nadu				
	2016-17	2017-18	2018-19	% change in 2018-19 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2018-19 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)												
Operational Cost	46559	44647	46288	-4.1	35944	37467	42390	4.2	54011	59386	59576	10.0	0.3
Human Labour													
Casual	12504	10853	12737	-13.2	7598	8180	8540	7.7	14679	14991	14546	2.1	-3.0
Attached	42	11	8	-73.1	2038	1856	1952	-8.9	207	29	46	-85.9	59.4
Family	18381	16334	15761	-11.1	6712	6614	6173	-1.5	7512	9235	8399	22.9	-9.1
Total	30928	27198	28506	-12.1	16348	16649	16665	1.8	22398	24255	22992	8.3	-5.2
Bullock Labour													
Hired	420	316	333	-24.8	1	0	16	-39.5	83	169	99	104.2	-41.8
Owned	2888	3156	2403	9.3	37	19	16	-48.7	20	7	24	-63.0	235.1
Total	3308	3472	2736	5.0	38	20	32	-48.5	103	177	123	72.2	-30.4
Machine Labour													
Hired	5178	5624	5944	8.6	3957	3996	4669	1.0	9056	10532	11754	16.3	11.6
Owned	93	359	391	284.4	2403	3153	5515	31.2	776	718	1586	-7.5	121.0
Total	5271	5983	6335	13.5	6360	7149	10184	12.4	9832	11250	13340	14.4	18.6
Seed	1219	1291	1346	5.9	1716	1626	1635	-5.3	6884	7759	6386	12.7	-17.7
Fertilisers and Manure													
Fertilisers	2803	3222	3561	14.9	3295	3111	3355	-5.6	5810	6143	6967	5.7	13.4
Manure	1596	1780	2003	11.5	422	322	405	-23.9	2034	1678	1931	-17.5	15.0
Total	4399	5001	5564	13.7	3717	3433	3760	-7.7	7844	7821	8898	-0.3	13.8
Other Inputs													
Insecticides	365	573	619	56.8	4426	4146	4921	-6.3	1487	1375	1393	-7.5	1.3
Irrigation charges	162	192	181	18.6	2419	3459	3912	43.0	4011	4011	4004	0.0	-0.2
Crop Insurance	-	21	13	-	-	-	0	-	-	36	71	-	98.3
Payment to Contractor	-	0	-	-	-	-	-	-	-	345	-	-	-
Interest on working capital	854	858	925	0.5	886	935	1097	5.5	1409	1520	1551	7.9	2.0

(Contd...)

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Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Odisha				Punjab				Tamil Nadu				
	2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)
Miscellaneous	52	58	63	9.8	34	50	183	49.9	44	839	819	1825.4	-2.4
Fixed Cost	14947	15456	17598	3.4	40135	43911	42376	9.4	21482	24475	20713	13.9	-15.4
Rental value of owned land	12063	13520	15287	13.1	30582	36213	35328	18.4	16402	17570	15119	7.1	-13.9
Rent paid for leased-in land	164	169	367	3.5	5975	4452	5454	-25.5	169	67	73	-60.2	8.0
Land revenue, cesses & taxes	22	20	20	-9.8	0	0	0	-	8	9	7	18.0	-17.0
Depreciation on implements & Farm buildings	700	463	649	-33.9	329	545	404	65.7	602	592	546	-1.7	-7.8
Interest on fixed capital	1999	1285	1275	-35.7	3250	2700	1189	-16.9	4302	6237	4968	45.0	-20.3
Total Cost (C₂/ha)	61506	60104	63886	-2.3	76080	81378	84766	7.0	75493	83861	80289	11.1	-4.3
A ₁ (₹/ha)	29063	28965	31563	-0.3	35536	35851	42076	0.9	47276	50819	51803	7.5	1.9
A ₂ +FL(₹/ha)	47444	45299	47324	-4.5	42248	42465	48249	0.5	54789	60054	60202	9.6	0.2
Yield(qt/ha)	39	40	41	4.0	69	75	68	8.0	47	46	46	-2.3	0.1
A ₁ (₹/qt)	672	670	721	-0.3	510	477	618	-6.6	952	1011	1053	6.2	4.2
A ₂ +FL(₹/qt)	1101	1051	1082	-4.5	606	565	709	-6.8	1106	1199	1220	8.4	1.8
C ₂ (₹/qt)	1427	1394	1459	-2.3	1092	1083	1245	-0.8	1524	1671	1626	9.7	-2.7

Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Telangana			Uttar Pradesh				Uttarakhand				
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)
Operational Cost	56662	56116	-1.0	39023	43329	41973	11.0	33805	37897	45559	12.1	20.2
Human Labour												
Casual	10762	15963	48.3	7853	11856	12389	51.0	5631	6863	13596	21.9	98.1
Attached	229	258	12.5	12	58	19	389.0	31	89	97	184.5	8.9
Family	12290	8608	-30.0	11421	9428	8568	-17.4	9941	13717	11607	38.0	-15.4
Total	23281	24829	6.6	19285	21343	20976	10.7	15603	20669	25300	32.5	22.4
Bullock Labour												
Hired	333	230	-31.0	50	20	0	-59.0	0	4159	7551	-	81.5
Owned	835	437	-47.7	592	35	8	-94.1	3590	1	71	-100.0	13723.5
Total	1167	666	-42.9	642	55	8	-91.4	3590	4160	7621	15.9	83.2
Machine Labour												
Hired	8994	12162	35.2	4172	4715	5154	13.0	3524	1852	2342	-47.5	26.5
Owned	513	752	46.5	297	755	628	154.4	1379	1679	1837	21.8	9.4
Total	9507	12913	35.8	4469	5470	5783	22.4	4903	3531	4179	-28.0	18.4
Seed	2041	2610	27.9	4071	4372	4636	7.4	3711	3694	2726	-0.5	-26.2
Fertilisers and Manure												
Fertilisers	7753	8245	6.4	4499	4138	3795	-8.0	3385	2450	2570	-27.6	4.9
Manure	429	431	0.3	71	63	16	-11.1	458	0	0	-	-
Total	8182	8676	6.0	4570	4202	3811	-8.1	3843	2450	2570	-36.3	4.9
Other Inputs												
Insecticides	4136	3586	-13.3	350	236	498	-32.5	795	1055	902	32.7	-14.5
Irrigation charges	870	1265	45.3	4798	6615	5245	37.9	636	1606	1204	152.6	-25.0
Crop Insurance	0	0	-	-	0	0	-	-	0	0	-	-
Payment to Contractor	5999	-	-	-	6	-	-	-	0	-	-	-
Interest on working capital	1345	1440	7.1	836	1027	1012	22.8	723	733	1029	1.3	40.4
Miscellaneous	134	132	-1.5	1	4	3	247.7	0	0	28	-	-

(Contd...)

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Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	Telangana			Uttar Pradesh			Uttarakhand			₹/ha)			
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18		2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	Fixed Cost	35061	34405	-1.9	19406	18053	17800	-7.0	15990		18719	18371	17.1
Rental value of owned land	25003	22416	-10.3	13385	13332	13374	-0.4	14392	17089	17988	18.7	5.3	
Rent paid for leased-in land	5600	7353	31.3	499	6	73	-98.8	0	0	0	-	-	
Land revenue, cesses & taxes	0	0	-	2	4	5	51.4	3	1	0	-69.0	-70.4	
Depreciation on implements & Farm buildings	661	226	-65.8	878	744	716	-15.3	178	229	200	28.6	-12.7	
Interest on fixed capital	3797	4411	16.2	4642	3967	3632	-14.5	1417	1400	183	-1.1	-86.9	
Total Cost (C₂/ha)	91723	90521	-1.3	58429	61382	59773	5.1	49795	56617	63930	13.7	12.9	
A ₁ (₹/ha)	50633	55086	8.8	28982	34654	34198	19.6	24045	24410	34152	1.5	39.9	
A ₂ +FL(₹/ha)	62923	63695	1.2	40403	44083	42766	9.1	33986	38127	45759	12.2	20.0	
Yield(qt/ha)	47	55	18.2	37	37	36	-0.7	46	31	37	-32.9	20.1	
A ₂ (₹/qt)	1019	955	-6.2	734	882	904	20.2	495	683	855	38.0	25.3	
A ₂ +FL(₹/qt)	1266	1091	-13.8	1018	1122	1133	10.2	690	1155	1164	67.3	0.8	
C ₂ (₹/qt)	1846	1551	-16.0	1476	1563	1583	5.9	1013	1695	1605	67.3	-5.3	

Annexures

Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	West Bengal					2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	2016-17	2017-18	2018-19	2016-17	2017-18				
Operational Cost	58456	59867	58525	2.4	-2.2				
Human Labour									
<i>Casual</i>	17845	16374	18219	-8.2	11.3				
<i>Attached</i>	1	4	0	570.8	-				
<i>Family</i>	19549	20846	20636	6.6	-1.0				
Total	37394	37225	38855	-0.5	4.4				
Bullock Labour									
<i>Hired</i>	413	339	387	-18.0	14.3				
<i>Owned</i>	1145	983	1082	-14.1	10.1				
Total	1558	1322	1469	-15.2	11.2				
Machine Labour									
<i>Hired</i>	4508	4351	4788	-3.5	10.1				
<i>Owned</i>	402	62	140	-84.7	127.9				
Total	4910	4413	4929	-10.1	11.7				
Seed	2021	2243	2335	11.0	4.1				
Fertilisers and Manure									
<i>Fertilisers</i>	5204	5006	5261	-3.8	5.1				
<i>Manure</i>	1456	1094	1085	-24.8	-0.9				
Total	6660	6101	6346	-8.4	4.0				
Other Inputs									
Insecticides	1686	1170	1290	-30.6	10.3				
Irrigation charges	2985	1019	2078	-65.9	104.0				
Crop Insurance	-	0	0	-	-				
Payment to Contractor	-	5055	-	-	-				
Interest on working capital	1179	1182	1148	0.3	-2.9				
Miscellaneous	63	139	75	119.8	-46.0				
Fixed Cost	19171	18190	19082	-5.1	4.9				
Rental value of owned land	15758	15825	16376	0.4	3.5				

(Contd...)

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Annex Table 5.5 (a) : Paddy : Break-up of Cost of Cultivation

Cost Items	West Bengal				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
Rent paid for leased-in land	396	548	935	38.5	70.6
Land revenue, cesses & taxes	54	12	6	-77.3	-54.0
Depreciation on implements & Farm buildings	825	660	662	-20.0	0.3
Interest on fixed capital	2139	1145	1103	-46.5	-3.6
Total Cost (C₂/ha)	77628	78057	77607	0.6	-0.6
A ₁ (₹/ha)	40182	40242	39491	0.1	-1.9
A ₂ +F ₁ (₹/ha)	59731	61088	60128	2.3	-1.6
Yield(qt/ha)	46	43	44	-6.4	2.9
A ₁ (₹/qt)	773	844	801	9.2	-5.1
A ₂ +F ₁ (₹/qt)	1154	1277	1218	10.7	-4.7
C ₂ (₹/qt)	1497	1632	1572	9.0	-3.7

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Annexures

Annex Table 5.5 (b) : Jowar : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh			Karnataka			Madhya Pradesh			₹/ha)			
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18		2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
Operational Cost	39485	24418	-38.2	14041	22035	22591	56.9	21624	28266	25612	30.7	-9.4	
Human Labour													
Casual	12626	6142	-51.4	4333	5720	5643	32.0	1978	4699	4326	137.6	-7.9	
Attached	0	0	-	22	205	46	834.7	0	0	0	-	-	
Family	4919	4023	-18.2	3327	4814	4091	44.7	10546	9028	7012	-14.4	-22.3	
Total	17545	10165	-42.1	7682	10739	9780	39.8	12523	13727	11338	9.6	-17.4	
Bullock Labour													
Hired	628	0	-	759	1942	1592	156.1	17	0	0	-	-	
Owned	342	4041	1082.4	1778	1521	2610	-14.5	2779	0	0	-	-	
Total	970	4041	316.8	2537	3463	4203	36.5	2796	0	0	-	-	
Machine Labour													
Hired	7565	4476	-40.8	1873	4066	4317	117.1	2301	6765	4792	194.1	-29.2	
Owned	245	536	118.9	135	536	654	295.3	93	24	1191	-74.2	4885.4	
Total	7810	5012	-35.8	2008	4602	4971	129.1	2393	6789	5983	183.7	-11.9	
Seed	788	1137	44.2	422	518	613	22.7	1282	1457	2464	13.7	69.1	
Fertilisers and Manure													
Fertilisers	6698	2229	-66.7	914	1938	1381	112.0	1776	2444	2473	37.6	1.2	
Manure	706	110	-84.4	0	0	259	-	290	2900	2725	899.9	-6.0	
Total	7405	2339	-68.4	914	1938	1639	112.0	2066	5344	5198	158.7	-2.7	
Other Inputs													
Insecticides	3463	983	-71.6	3	28	588	850.2	161	0	0	-	-	
Irrigation charges	399	81	-79.7	148	145	157	-2.3	0	250	0	-	-	
Crop Insurance	0	0	-	-	0	0	-	-	95	26	-	-72.8	
Payment to Contractor	0	-	-	-	0	-	-	-	0	-	-	-	
Interest on working capital	1047	618	-41.0	325	522	561	60.7	336	583	564	73.6	-3.3	
Miscellaneous	59	42	-28.3	1	81	79	6284.3	67	21	39	-69.1	86.8	

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Annex Table 5.5 (b) : Jowar : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh				Karnataka				Madhya Pradesh						
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)
Fixed Cost	20202	10270	-49.2	7080	8676	10649	22.6	11413	9265	10577	11413	9265	10577	-18.8	14.2
Rental value of owned land	17610	5962	-66.1	5181	7509	9443	44.9	7224	6913	8047	7224	6913	8047	-4.3	16.4
Rent paid for leased-in land	2194	3251	48.2	0	0	0	-	0	0	0	0	0	0	-	-
Land revenue, cesses & taxes	0	0	-	7	11	7	72.9	-37.2	3	3	2	3	3	65.3	15.2
Depreciation on implements & Farm buildings	86	165	90.4	195	191	208	-2.1	1197	329	237	1197	329	237	-72.5	-27.9
Interest on fixed capital	311	893	186.7	1698	966	991	-43.1	2990	2020	2289	2990	2020	2289	-32.5	13.4
Total Cost (C₂/ha)	59686	34688	-41.9	21121	30712	33240	45.4	33037	37531	36189	33037	37531	36189	13.6	-3.6
A ₁ (₹/ha)	36846	23810	-35.4	10915	17423	18715	59.6	12278	19570	18840	12278	19570	18840	59.4	-3.7
A ₂ +FL(₹/ha)	41765	27833	-33.4	14242	22237	22806	56.1	22823	28598	25852	22823	28598	25852	25.3	-9.6
Yield(qt/ha)	39	12	-69.4	6	11	13	85.6	19	19	21	19	19	21	-2.6	14.8
A ₁ (₹/qt)	883	1841	108.5	1401	1226	1224	-12.5	468	635	574	468	635	574	35.6	-9.7
A ₂ +FL(₹/qt)	993	2121	113.6	1880	1572	1446	-16.4	856	928	783	856	928	783	8.4	-15.7
C ₂ (₹/qt)	1422	2577	81.2	2795	2175	2110	-22.2	1267	1218	1098	1267	1218	1098	-3.9	-9.9

Annexures

Annex Table 5.5 (b) : Jowar : Break-up of Cost of Cultivation

Cost Items	Maharashtra				Rajasthan				₹/ha)
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	
				% change in 2018-19 over 2017-18				% change in 2018-19 over 2017-18	
Operational Cost	30031	35762	36622	19.1	2.4	23088	30148	13.7	14.8
Human Labour									
Casual	8680	9670	9301	11.4	-3.8	3986	6008	1.0	49.3
Attached	640	247	204	-61.4	-17.4	0	0	-	-
Family	6617	7803	8528	17.9	9.3	13346	13958	7.3	-2.5
Total	15936	17720	18034	11.2	1.8	17332	19967	5.9	8.8
Bullock Labour									
Hired	676	522	833	-22.8	59.6	72	72	-49.1	96.3
Owned	3482	3332	3556	-4.3	6.7	36	285	794.2	-12.0
Total	4158	3853	4389	-7.3	13.9	108	357	232.2	-0.9
Machine Labour									
Hired	5160	5385	8613	4.4	59.9	2846	5161	45.7	24.4
Owned	278	878	364	215.5	-58.6	351	839	23.3	93.8
Total	5438	6264	8977	15.2	43.3	3198	6001	43.3	31.0
Seed	550	477	790	-13.3	65.8	1065	1124	-9.1	16.1
Fertilisers and Manure									
Fertilisers	2325	3461	2018	48.8	-41.7	1036	1010	26.0	-22.6
Manure	39	68	176	75.3	158.0	0	1097	-	-
Total	2364	3529	2193	49.3	-37.9	1036	2106	26.0	61.4
Other Inputs									
Insecticides	27	12	34	-57.2	197.5	0	28	-	-
Irrigation charges	825	2828	1262	242.9	-55.4	53	48	468.3	-84.2
Crop Insurance	-	5	60	-	1169.9	-	0	-	-
Payment to Contractor	-	196	-	-	-	-	-	-	-
Interest on working capital	710	847	851	19.4	0.5	295	491	22.6	35.6
Miscellaneous	24	31	48	27.3	56.3	0	27	-	-9.3
Fixed Cost	10786	14481	13650	34.3	-5.7	9275	7132	-30.5	10.6

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Annex Table 5.5 (b) : Jowar : Break-up of Cost of Cultivation

Cost Items	Maharashtra						Rajasthan					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	
Rental value of owned land	6499	6683	8393	2.8	25.6		4957	4770	5272	-3.8	10.5	
Rent paid for leased-in land	0	0	0	-	-		0	0	0	-	-	
Land revenue, cesses & taxes	28	38	48	37.1	24.9		10	9	6	-12.7	-32.0	
Depreciation on implements & Farm buildings	612	707	564	15.4	-20.2		534	308	304	-42.4	-1.2	
Interest on fixed capital	3647	7053	4645	93.4	-34.1		3774	1360	1549	-64.0	13.9	
Total Cost (C₂/ha)	40818	50242	50272	23.1	0.1		32363	32707	37280	1.1	14.0	
A ₁ (₹/ha)	24055	28704	28706	19.3	0.0		10286	12258	16500	19.2	34.6	
A ₂ +FL(₹/ha)	30671	36507	37234	19.0	2.0		23632	26577	30458	12.5	14.6	
Yield(qt/ha)	12	11	11	-7.9	-4.8		9	6	8	-32.2	33.0	
A ₁ (₹/qt)	1214	1400	1515	15.3	8.2		562	850	894	51.3	5.2	
A ₂ +FL(₹/qt)	1539	1816	1992	18.0	9.7		1292	1720	1632	33.1	-5.1	
C ₂ (₹/qt)	2038	2453	2699	20.4	10.0		1783	2136	2020	19.8	-5.4	

Annexures

Annex Table 5.5 (b) : Jowar : Break-up of Cost of Cultivation

Cost Items	Tamil Nadu				Telangana			
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18
Operational Cost	24938	38095	33886	52.8	-11.0	43024	36566	-15.0
Human Labour								
Casual	9637	9626	10331	-0.1	7.3	6592	344	-94.8
Attached	119	41	0	-66.1	-	0	1494	-
Family	6515	13841	8320	112.5	-39.9	23863	18667	-21.8
Total	16271	23508	18651	44.5	-20.7	30455	20505	-32.7
Bullock Labour								
Hired	0	0	0	-	-	0	625	-
Owned	0	0	0	-	-	7388	9758	32.1
Total	0	0	0	-	-	7388	10382	40.5
Machine Labour								
Hired	2747	5318	6691	93.6	25.8	183	590	222.8
Owned	137	181	40	31.9	-77.9	0	65	-
Total	2885	5499	6731	90.6	22.4	183	655	258.3
Seed	1147	3189	849	178.1	-73.4	999	1378	37.9
Fertilisers and Manure								
Fertilisers	1021	2283	1761	123.7	-22.9	3343	2108	-36.9
Manure	820	2375	2023	189.7	-14.8	0	890	-
Total	1840	4658	3784	153.1	-18.8	3343	2999	-10.3
Other Inputs								
Insecticides	42	45	55	8.7	22.3	0	0	-
Irrigation charges	2196	418	2981	-81.0	613.7	0	0	-
Crop Insurance	-	0	0	-	-	0	0	-
Payment to Contractor	-	0	-	-	-	0	-	-
Interest on working capital	558	735	775	31.6	5.4	581	542	-6.6
Miscellaneous	0	44	61	-	40.5	75	105	39.8
Fixed Cost	18019	12993	21331	-27.9	64.2	11664	5308	-54.5
Rental value of owned land	13656	8228	11040	-39.7	34.2	8069	2632	-67.4

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (b) : Jowar : Break-up of Cost of Cultivation

Cost Items	Tamil Nadu				Telangana			
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)	(₹/ha)	(₹/ha)	(%)
Rent paid for leased-in land	0	2	0	-	-	0	0	-
Land revenue, cesses & taxes	24	8	9	-66.8	14.8	0	0	-
Depreciation on implements & Farm buildings	339	792	327	133.8	-58.8	917	239	-73.9
Interest on fixed capital	4000	3964	9956	-0.9	151.2	2678	2437	-9.0
Total Cost (C₂/ha)	42957	51088	55217	18.9	8.1	54688	41874	-23.4
A ₁ (₹/ha)	18786	25056	25902	33.4	3.4	20079	18138	-9.7
A ₂ +FL(₹/ha)	25301	38896	34222	53.7	-12.0	43941	36806	-16.2
Yield(qt/ha)	7	8	14	23.8	68.0	10	4	-57.2
A ₁ (₹/qt)	1718	1916	1571	11.5	-18.0	1609	3834	138.2
A ₂ +FL(₹/qt)	2291	2801	2068	22.3	-26.2	3632	7780	114.2
C ₂ (₹/qt)	3885	3696	3389	-4.9	-8.3	4558	8852	94.2

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Annex Table 5.5 (c) : Bajra : Break-up of Cost of Cultivation

Cost Items	Gujarat				Haryana				Maharashtra								
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	
Operational Cost	36711	35110	39699	-4.4	24731	24974	23766	1.0	39676	34788	44633	-12.3	39676	34788	44633	-12.3	28.3
Human Labour																	
Casual	8967	8998	9966	0.3	7011	4797	3232	-31.6	11819	11152	14802	-5.6	11819	11152	14802	-5.6	32.7
Attached	20	18	14	-10.4	75	13	5	-82.4	401	112	99	-72.0	401	112	99	-72.0	-12.1
Family	8198	8461	8930	3.2	7520	9037	8726	20.2	7068	5181	5170	-26.7	7068	5181	5170	-26.7	-0.2
Total	17185	17478	18910	1.7	14606	13847	11964	-5.2	19287	16445	20071	-14.7	19287	16445	20071	-14.7	22.0
Bullock Labour																	
Hired	277	538	549	94.3	6	0	0	-	1154	615	391	-46.7	1154	615	391	-46.7	-36.5
Owned	496	478	459	-3.7	76	5	21	-93.4	1832	1625	1849	-11.3	1832	1625	1849	-11.3	13.8
Total	1941	2108	1008	8.6	81	5	21	-93.9	2986	2240	2240	-25.0	2986	2240	2240	-25.0	0.0
Machine Labour																	
Hired	4657	4393	4970	-5.7	5341	5437	5352	1.8	8699	8591	10366	-1.2	8699	8591	10366	-1.2	20.7
Owned	999	878	1269	-12.1	963	1256	1885	30.4	310	1886	1275	507.4	310	1886	1275	507.4	-32.4
Total	5656	5271	6239	-6.8	6304	6693	7237	6.2	9010	10477	11640	16.3	9010	10477	11640	16.3	11.1
Seed	1941	2108	2310	8.6	932	817	1209	-12.4	1023	1059	1236	3.5	1023	1059	1236	3.5	16.8
Fertilisers and Manure																	
Fertilisers	3047	2795	3269	-8.3	1955	2104	1882	7.6	1674	1878	2206	12.2	1674	1878	2206	12.2	17.4
Manure	978	712	1112	-27.2	0	0	0	-	3220	0	4033	-	3220	0	4033	-	-
Total	4024	3506	4381	-12.9	1955	2104	1882	7.6	4895	1878	6239	-61.6	4895	1878	6239	-61.6	232.1
Other Inputs																	
Insecticides	42	124	301	197.4	122	131	144	7.7	0	0	0	-	0	0	0	-	-
Irrigation charges	6226	4324	5425	-30.5	209	746	855	256.4	1485	1236	1963	-16.8	1485	1236	1963	-16.8	58.8
Crop Insurance	-	0	0	-	-	0	0	-	-	0	0	-	-	0	0	-	-
Payment to Contractor	-	475	-	-	-	149	-	-	-	525	-	-	-	525	-	-	-
Interest on working capital	864	808	932	-6.5	522	483	456	-7.4	988	897	1196	-9.2	988	897	1196	-9.2	33.3
Miscellaneous	0	0	192	-	0	0	0	-	3	30	48	913.0	3	30	48	913.0	62.4

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (c) : Bajra : Break-up of Cost of Cultivation

Cost Items	Gujarat						Haryana						Maharashtra																	
	2016-17		2017-18		2018-19		2016-17		2017-18		2018-19		2016-17		2017-18		2018-19		2016-17		2017-18		2018-19		2016-17		2017-18		2018-19	
		% change in 2017-18 over 2016-17		% change in 2018-19 over 2017-18		% change in 2017-18 over 2016-17		% change in 2018-19 over 2017-18		% change in 2017-18 over 2016-17		% change in 2018-19 over 2017-18		% change in 2017-18 over 2016-17		% change in 2018-19 over 2017-18		% change in 2017-18 over 2016-17		% change in 2018-19 over 2017-18		% change in 2017-18 over 2016-17		% change in 2018-19 over 2017-18		% change in 2017-18 over 2016-17		% change in 2018-19 over 2017-18		
Fixed Cost	11570	7.8	17029	36.5	16155	15702	16409	-2.8	4.5	12635	13699	16379	8.4	19.6																
Rental value of owned land	8761	-2.8	12945	52.0	11223	9106	10321	-18.9	13.3	7623	6934	10249	-9.0	47.8																
Rent paid for leased-in land	485	45.8	696	-1.5	0	0	0	-	-	0	0	0	-	-																
Land revenue, cesses & taxes	3	28.7	4	-4.2	0	0	0	-	-	19	17	17	-13.0	1.6																
Depreciation on implements & Farm buildings	84	227.3	267	-2.5	714	1192	1095	67.0	-8.2	500	576	491	15.1	-14.7																
Interest on fixed capital	2238	31.8	2970	5.0	4218	5404	4993	28.1	-7.6	4493	6172	5622	37.4	-8.9																
Total Cost (C₂/ha)	48281	-1.4	56728	19.2	40886	40676	40175	-0.5	-1.2	52311	48486	61012	-7.3	25.8																
A ₁ (₹/ha)	29085	-5.0	31735	14.8	17925	17130	16135	-4.4	-5.8	33128	30199	39971	-8.8	32.4																
A ₂ +FL(₹/ha)	37282	-3.2	40665	12.7	25445	26166	24861	2.8	-5.0	40196	35380	45141	-12.0	27.6																
Yield(qt/ha)	23	11.6	32	22.4	22	19	18	-11.9	-7.5	23	21	25	-7.3	16.0																
A ₁ (₹/qt)	798	-12.6	725	4.0	625	671	752	7.5	11.9	1204	1207	1423	0.3	17.9																
A ₂ +FL(₹/qt)	1026	-12.1	931	3.3	886	1012	1159	14.2	14.5	1465	1410	1608	-3.8	14.0																
C ₂ (₹/qt)	1323	-9.9	1294	8.6	1423	1584	1872	11.3	18.2	1907	1921	2153	0.8	12.1																

Annexures

Annex Table 5.5 (c) : Bajra : Break-up of Cost of Cultivation

Cost Items	Rajasthan				Uttar Pradesh				₹/ha)	
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17		
				% change in 2018-19 over 2017-18				% change in 2018-19 over 2017-18		
Operational Cost	20886	23750	25216	13.7	6.2	21499	22046	27159	2.5	23.2
Human Labour										
Casual	3147	2863	2938	-9.0	2.6	4427	5618	7586	26.9	35.0
Attached	16	44	64	177.3	45.0	6	0	0	-	-
Family	12403	14449	14759	16.5	2.2	10380	7201	8074	-30.6	12.1
Total	15566	17355	17761	11.5	2.3	14814	12819	15660	-13.5	22.2
Bullock Labour										
Hired	1	0	1	-	-	0	0	0	-	-
Owned	81	113	4	40.3	-96.7	213	22	14	-89.5	-38.4
Total	82	113	5	38.2	-95.9	213	22	14	-89.5	-38.4
Machine Labour										
Hired	2939	3548	4025	20.7	13.5	3166	4701	6319	48.5	34.4
Owned	274	337	417	22.8	23.9	572	729	219	27.4	-70.0
Total	3214	3884	4442	20.9	14.4	3738	5430	6538	45.3	20.4
Seed	832	954	1077	14.8	12.9	1180	1069	1373	-9.4	28.4
Fertilisers and Manure										
Fertilisers	456	763	957	67.5	25.4	851	960	1298	12.8	35.2
Manure	299	57	382	-80.9	568.3	25	0	288	-	-
Total	755	821	1340	8.7	63.3	876	960	1586	9.6	65.3
Other Inputs										
Insecticides	79	0	25	-	-	6	100	70	1696.8	-29.6
Irrigation charges	102	332	231	224.5	-30.6	336	978	1331	191.0	36.1
Crop Insurance	-	0	0	-	-	-	0	0	-	-
Payment to Contractor	-	0		-	-	-	218	-	-	-
Interest on working capital	257	282	317	9.6	12.4	337	450	578	33.5	28.6
Miscellaneous	0	8	19	-	132.9	0	0	8	-	-
Fixed Cost	8080	5419	6786	-32.9	25.2	18729	12418	16969	-33.7	36.6

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (c) : Bajra : Break-up of Cost of Cultivation

Cost Items	Rajasthan					Uttar Pradesh				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)
Rental value of owned land	4801	4068	5038	-15.3	23.9	9159	8758	12311	-4.4	40.6
Rent paid for leased-in land	42	0	72	-	-	6552	894	1965	-86.4	119.8
Land revenue, cesses & taxes	6	4	5	-34.7	16.6	6	5	4	-25.4	-20.5
Depreciation on implements & Farm buildings	434	234	223	-46.1	-4.6	316	453	466	43.3	2.7
Interest on fixed capital	2797	1113	1448	-60.2	30.1	2695	2309	2224	-14.3	-3.7
Total Cost (C₂/ha)	28967	29169	32002	0.7	9.7	40228	34464	44128	-14.3	28.0
A ₁ (₹/ha)	8965	9540	10757	6.4	12.8	17992	16197	21520	-10.0	32.9
A ₂ +FL(₹/ha)	21369	23989	25516	12.3	6.4	28373	23397	29594	-17.5	26.5
Yield(qt/ha)	12	10	11	-11.1	7.4	29	22	27	-25.1	25.2
A ₁ (₹/qt)	398	479	513	20.6	7.1	506	564	593	11.5	5.1
A ₂ +FL(₹/qt)	966	1164	1186	20.5	1.9	787	834	873	6.0	4.7
C ₂ (₹/qt)	1290	1442	1467	11.8	1.8	1117	1230	1301	10.2	5.7

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Annexures

Annex Table 5.5 (d) : Maize : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh			Bihar			Gujarat			(%/ha)			
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18		2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
Operational Cost	39842	43235	8.5	32262	31425	35033	-2.6	29758	35614	38158	19.7	7.1	
Human Labour													
Casual	12133	15403	26.9	4922	9942	9264	102.0	5681	9444	9292	66.2	-1.6	
Attached	0	0	-	59	0	0	-	0	0	0	-	-	
Family	3144	3356	6.8	9545	5362	6653	-43.8	9367	7182	9503	-23.3	32.3	
Total	15277	18759	22.8	14526	15304	15917	5.4	15048	16626	18795	10.5	13.0	
Bullock Labour													
Hired	476	0	-	0	0	0	-	879	1821	1100	107.1	-39.6	
Owned	0	988	-	0	0	0	-	2216	504	1128	-77.3	123.9	
Total	476	988	107.6	0	0	0	-	3095	2325	2228	-24.9	-4.2	
Machine Labour													
Hired	9938	5177	-47.9	3740	4844	5385	29.5	3303	5544	4735	67.8	-14.6	
Owned	5	88	1499.8	16	42	246	172.3	452	699	905	54.8	29.4	
Total	9943	5265	-47.0	3755	4886	5631	30.1	3755	6243	5640	66.3	-9.7	
Seed	5388	3812	-29.2	2970	1851	2761	-37.7	1760	2341	2526	33.0	7.9	
Fertilisers and Manure													
Fertilisers	5266	8632	63.9	4341	3639	4065	-16.2	1908	4111	4386	115.5	6.7	
Manure	0	70	-	521	292	137	-43.9	976	1806	2053	85.1	13.7	
Total	5266	8701	65.2	4862	3931	4202	-19.2	2884	5917	6439	105.2	8.8	
Other Inputs													
Insecticides	1214	3683	203.4	0	5	0	-	178	320	214	79.1	-33.1	
Irrigation charges	808	488	-39.6	5461	4656	5654	-14.7	2470	979	1156	-59.5	18.0	
Crop Insurance	0	0	-	-	0	0	-	-	0	0	-	-	
Payment to Contractor	110	-	-	-	0	-	-	-	0	-	-	-	
Interest on working capital	1112	1208	8.7	688	790	860	14.7	618	862	868	39.4	0.8	
Miscellaneous	247	329	33.1	0	3	10	-	0	0	292	-	-	

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (d) : Maize : Break-up of Cost of Cultivation

(₹/ha)

Cost Items	Andhra Pradesh			Bihar			Gujarat					
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	Fixed Cost	22146	33519	51.4	15147	17039	17481	12.5	10242	7017	9913	-31.5
Rental value of owned land	21359	26756	25.3	12864	14691	15647	14.2	6239	5274	7147	-15.5	35.5
Rent paid for leased-in land	182	5939	3156.7	0	0	0	-	1215	59	0	-95.2	-
Land revenue, cesses & taxes	0	0	-	81	114	111	40.7	7	6	9	-14.1	52.2
Depreciation on implements & Farm buildings	79	95	20.1	557	513	416	-7.9	248	171	229	-30.9	33.9
Interest on fixed capital	526	729	38.7	1645	1721	1307	4.6	2533	1508	2528	-40.5	67.6
Total Cost (C₂/ha)	61988	76754	23.8	47409	48463	52514	2.2	40000	42631	48072	6.6	12.8
A ₁ (₹/ha)	36959	45913	24.2	23355	26689	28906	14.3	21861	28667	28894	31.1	0.8
A ₂ +FL(₹/ha)	40103	49269	22.9	32900	32051	35560	-2.6	31228	35849	38397	14.8	7.1
Yield(qt/ha)	54	42	-21.6	36	40	40	11.8	19	16	19	-14.2	18.2
A ₂ (₹/qt)	649	1040	60.3	549	574	643	4.5	925	1224	1178	32.3	-3.8
A ₂ +FL(₹/qt)	730	1132	55.2	792	679	784	-14.3	1241	1532	1566	23.4	2.3
C ₂ (₹/qt)	1120	1739	55.2	1134	1031	1161	-9.1	1587	1821	1960	14.8	7.6

Annexures

Annex Table 5.5 (d) : Maize : Break-up of Cost of Cultivation

Cost Items	Himachal Pradesh					Jharkhand					Karnataka				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)
Operational Cost	28093	27771	31532	-1.1	13.5	24716	41021	45462	66.0	10.8	28221	36204	30776	28.3	-15.0
Human Labour															
Casual	632	456	334	-27.9	-26.8	6898	7692	8780	11.5	14.1	7556	7149	6641	-5.4	-7.1
Attached	75	0	0	-	-	457	0	0	-	-	0	4	0	-	-
Family	16844	14546	15712	-13.6	8.0	4634	8503	10929	83.5	28.5	4308	6370	4556	47.9	-28.5
Total	17552	15001	16045	-14.5	7.0	11990	16195	19709	35.1	21.7	11864	13524	11197	14.0	-17.2
Bullock Labour															
Hired	473	187	209	-60.6	11.9	0	0	0	-	-	2121	2018	1458	-4.9	-27.7
Owined	951	912	2909	-4.0	218.9	208	1591	4910	664.1	208.5	1725	4472	2166	159.3	-51.6
Total	1424	1099	3118	-22.8	183.7	208	1591	4910	664.1	208.5	3846	6490	3624	68.8	-44.2
Machine Labour															
Hired	2654	3567	4284	34.4	20.1	946	3230	2592	241.4	-19.7	3803	5763	5418	51.6	-6.0
Owined	171	190	250	11.3	31.5	2637	0	0	-	-	243	1003	732	312.0	-27.0
Total	2825	3757	4534	33.0	20.7	3583	3230	2592	-9.8	-19.7	4046	6766	6150	67.2	-9.1
Seed	1251	1839	1919	47.0	4.4	6157	6000	6274	-2.6	4.6	2866	2882	2624	0.5	-9.0
Fertilisers and Manure															
Fertilisers	863	1125	1281	30.2	13.9	2170	4619	3793	112.9	-17.9	3875	3993	4989	3.1	24.9
Manure	3707	4221	3907	13.9	-7.4	0	3000	2336	-	-22.1	11	141	460	1207.3	226.5
Total	4571	5346	5188	17.0	-3.0	2170	7619	6130	251.1	-19.6	3886	4134	5449	6.4	31.8
Other Inputs															
Insecticides	130	316	216	143.6	-31.8	0	0	0	-	-	219	74	190	-66.1	155.2
Irrigation charges	0	0	0	-	-	0	5400	4801	-	-11.1	769	1006	571	30.9	-43.2
Crop Insurance	-	2	4	-	46.2	-	0	0	-	-	-	0	39	-	-
Payment to Contractor	-	0	-	-	-	-	0	-	-	-	-	291	-	-	-
Interest on working capital	341	401	479	17.6	19.6	609	985	1046	61.9	6.2	725	904	795	24.8	-12.1

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (d) : Maize : Break-up of Cost of Cultivation

Cost Items	Himachal Pradesh					Jharkhand					Karnataka				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)
Miscellaneous	0	9	29	-	207.4	0	0	0	-	-	0	131	139	-	6.2
Fixed Cost	12013	11385	12710	-5.2	11.6	13625	24856	15285	82.4	-38.5	14336	11647	13229	-18.8	13.6
Rental value of owned land	7389	7921	10127	7.2	27.9	10874	23574	13887	116.8	-41.1	11287	9182	11096	-18.6	20.8
Rent paid for leased-land	11	39	10	264.7	-75.0	0	0	0	-	-	0	0	0	-	-
Land revenue, cesses & taxes	7	6	6	-6.7	-3.8	62	80	49	29.6	-38.5	13	7	12	-49.0	72.6
Depreciation on implements & Farm buildings	563	565	420	0.3	-25.6	959	516	437	-46.2	-15.3	486	304	177	-37.4	-41.8
Interest on fixed capital	4045	2855	2148	-29.4	-24.8	1730	685	911	-60.4	32.9	2551	2153	1944	-15.6	-9.7
Total Cost (C₂/ha)	40107	39156	44242	-2.4	13.0	38341	65877	60746	71.8	-7.8	42557	47850	44005	12.4	-8.0
A ₁ (₹/ha)	11830	13834	16256	16.9	17.5	21102	33115	35019	56.9	5.8	24412	30144	26409	23.5	-12.4
A ₂ +FL(₹/ha)	28673	28380	31967	-1.0	12.6	25737	41618	45948	61.7	10.4	28720	36514	30965	27.1	-15.2
Yield(qt/ha)	16	19	20	15.5	6.5	41	39	27	-5.0	-30.4	32	30	31	-3.5	1.0
A ₁ (₹/qt)	507	515	572	1.6	11.0	392	631	1191	61.2	88.7	728	948	820	30.2	-13.5
A ₂ +FL(₹/qt)	1239	1051	1113	-15.1	5.9	497	793	1563	59.6	97.0	841	1097	951	30.3	-13.3
C ₂ (₹/qt)	1728	1447	1533	-16.2	5.9	749	1256	2066	67.7	64.5	1252	1439	1352	15.0	-6.1

Annexures

Annex Table 5.5 (d) : Maize : Break-up of Cost of Cultivation

Cost Items	Rajasthan						Tamil Nadu					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	
	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)
Operational Cost	34106	34923	42280	2.4	21.1	65438	60675	72988	-7.3	20.3		
Human Labour												
Casual	2742	2894	3073	5.5	6.2	18301	16447	15703	-10.1	-4.5		
Attached	1	2	3	63.9	18.3	156	6	0	-95.9	-		
Family	19510	19408	21739	-0.5	12.0	14655	13251	25470	-9.6	92.2		
Total	22253	22304	24815	0.2	11.3	33112	29705	41172	-10.3	38.6		
Bullock Labour												
Hired	845	346	287	-59.1	-16.8	11	3	0	-73.3	-		
Owned	1747	1793	2412	2.6	34.5	30	0	0	-	-		
Total	2593	2138	2700	-17.5	26.2	41	3	0	-93.0	-		
Machine Labour												
Hired	4611	4858	6265	5.3	29.0	7873	8053	9140	2.3	13.5		
Owned	90	479	335	434.2	-30.0	198	252	580	27.1	130.3		
Total	4701	5336	6600	13.5	23.7	8071	8305	9720	2.9	17.0		
Seed	1716	1859	2027	8.3	9.1	4409	4996	5949	13.3	19.1		
Fertilisers and Manure												
Fertilisers	2398	2070	1849	-13.7	-10.7	5775	5818	5244	0.7	-9.9		
Manure	0	88	3527	-	3888.0	7610	5503	4399	-27.7	-20.1		
Total	2398	2158	5376	-10.0	149.1	13385	11320	9643	-15.4	-14.8		
Other Inputs												
Insecticides	0	81	62	-	-24.3	567	799	1072	41.0	34.1		
Irrigation charges	2	561	59	23295.4	-89.5	4217	4010	3470	-4.9	-13.5		
Crop Insurance	-	0	0	-	-	-	0	0	-	-		
Payment to Contractor	-	0	-	-	-	-	11	-	-	-		
Interest on working capital	442	470	622	6.3	32.4	1539	1437	1440	-6.6	0.2		
Miscellaneous	-	14	19	-	39.7	97	88	521	-9.3	493.9		

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (d) : Maize : Break-up of Cost of Cultivation

Cost Items	Rajasthan						Tamil Nadu					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	
	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)	(₹/ha)
Fixed Cost	9624	10682	11909	11.0	11.5	27273	35375	21537	29.7	-39.1		
Rental value of owned land	5250	6648	7349	26.6	10.5	18499	12943	16479	-30.0	27.3		
Rent paid for leased-in land	848	0	206	-	-	0	0	0	-	-		
Land revenue, cesses & taxes	11	11	9	3.0	-19.3	8	10	10	32.3	5.4		
Depreciation on implements & Farm buildings	856	660	576	-22.9	-12.8	529	505	387	-4.6	-23.4		
Interest on fixed capital	2660	3363	3770	26.4	12.1	8237	21917	4660	166.1	-78.7		
Total Cost (C ₁ /ha)	43731	45605	54189	4.3	18.8	92710	96050	94525	3.6	-1.6		
A ₁ (₹/ha)	16311	16186	21331	-0.8	31.8	51319	47939	47915	-6.6	0.0		
A ₂ +FL(₹/ha)	35821	35594	43070	-0.6	21.0	65974	61190	73385	-7.3	19.9		
Yield(qt/ha)	18	22	23	27.4	2.8	45	60	40	33.3	-32.5		
A ₁ (₹/qt)	707	563	745	-20.2	32.3	1085	766	1046	-29.4	36.7		
A ₂ +FL(₹/qt)	1603	1230	1485	-23.3	20.7	1412	969	1716	-31.4	77.1		
C ₂ (₹/qt)	1932	1573	1870	-18.6	18.8	1982	1525	2206	-23.1	44.7		

Annexures

Annex Table 5.5 (d) : Maize : Break-up of Cost of Cultivation

Cost Items	Telangana				Uttar Pradesh				₹/ha)
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2017-19 over 2017-18	
	Operational Cost	51569	51607	0.1	29498	32880	34758	11.5	
Human Labour									
Casual	10323	10094	-2.2	5802	6731	8631	16.0	28.2	
Attached	190	98	-48.2	0	15	132	-	757.8	
Family	9719	9168	-5.7	11189	10016	9741	-10.5	-2.7	
Total	20232	19360	-4.3	16991	16762	18504	-1.3	10.4	
Bullock Labour									
Hired	1598	1450	-9.3	58	77	141	34.0	83.0	
Owned	1385	2508	81.1	1181	143	338	-87.9	135.7	
Total	2983	3958	32.7	1239	220	479	-82.2	117.3	
Machine Labour									
Hired	5915	11163	88.7	3887	5130	5623	32.0	9.6	
Owned	249	265	6.4	233	1186	749	409.2	-36.8	
Total	6165	11428	85.4	4120	6316	6371	53.3	0.9	
Seed	5346	5376	0.6	2627	3624	4422	37.9	22.0	
Fertilisers and Manure									
Fertilisers	7476	7457	-0.3	2191	2162	2547	-1.4	17.8	
Manure	84	0	-	6	436	178	6677.8	-59.3	
Total	7561	7457	-1.4	2198	2598	2724	18.2	4.9	
Other Inputs									
Insecticides	1944	2429	25.0	31	96	47	209.5	-51.0	
Irrigation charges	630	223	-64.6	1737	2563	1446	47.6	-43.6	
Crop Insurance	0	0	-	-	0	0	-	-	
Payment to Contractor	5357	-	-	-	0	-	-	-	
Interest on working capital	1268	1286	1.4	555	693	758	24.9	9.4	
Miscellaneous	86	90	5.2	1	9	6	1137.5	-36.9	
Fixed Cost	3867	29184	-13.8	13097	14545	15377	11.1	5.7	
Rental value of owned land	26808	23891	-10.9	10798	10581	12359	-2.0	16.8	

(Contd...)

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Annex Table 5.5 (d) : Maize : Break-up of Cost of Cultivation

Cost Items	Telangana				Uttar Pradesh				
	2017-18	2018-19	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	
Rent paid for leased-in land	1830	2727	49.0		0	231	0		
Land revenue, cesses & taxes	0	0	-		5	3	5		-36.7
Depreciation on implements & Farm buildings	853	231	-72.9		480	653	389		36.1
Interest on fixed capital	4376	2335	-46.6		1814	3077	2625		69.6
Total Cost (C₂/ha)	85436	80791	-5.4		42595	47426	50135		11.3
A ₁ (₹/ha)	44533	45397	1.9		18794	23752	25410		26.4
A ₂ +F ₁ (₹/ha)	54252	54565	0.6		29983	33767	35151		12.6
Yield(qt/ha)	63	44	-30.1		24	26	26		6.5
A ₁ (₹/qt)	685	995	45.3		664	780	812		17.4
A ₂ +F ₁ (₹/qt)	842	1207	43.3		1064	1092	1107		2.6
C ₂ (₹/qt)	1322	1749	32.3		1509	1545	1578		2.4

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Annexures

Annex Table 5.5 (e) : Ragi : Break-up of Cost of Cultivation

Cost Items	Karnataka				Maharashtra			Odisha		
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18
Operational Cost	33526	48060	42923	43.4	58614	60656	3.5	19506	21040	7.9
Human Labour										
Casual	10777	17028	12256	58.0	13290	12416	-6.6	3252	3184	-2.1
Attached	0	0	0	-	0	0	-	0	0	-
Family	7104	8822	10467	24.2	16276	20155	23.8	9047	10655	17.8
Total	17880	25851	22722	44.6	29566	32572	10.2	12299	13839	12.5
Bullock Labour										
Hired	3386	1363	1357	-59.7	11	899	7785.1	136	132	-2.7
Owned	415	4567	4042	999.7	9598	8152	-15.1	2092	3161	51.1
Total	3801	5930	5400	56.0	9609	9051	-5.8	2228	3293	47.8
Machine Labour										
Hired	5589	7581	7133	35.7	2736	1816	-33.6	1802	656	-63.6
Owned	12	570	187	4772.5	0	841	-	244	214	-12.2
Total	5600	8151	7319	45.5	2736	2657	-2.9	2047	870	-57.5
Seed	434	802	1594	84.8	218	267	22.5	234	256	9.4
Fertilisers and Manure										
Fertilisers	2518	3174	3368	26.0	3192	2372	-25.7	800	867	8.3
Manure	2121	2220	967	4.7	7541	6774	-10.2	1571	1573	0.2
Total	4639	5394	4334	16.3	10734	9146	-14.8	2371	2439	2.9
Other Inputs										
Insecticides	82	0	38	-	0	0	-	0	0	-
Irrigation charges	288	620	361	114.9	98	0	-	0	14	-
Crop Insurance	-	0	0	-	0	0	-	0	0	-
Payment to Contractor	-	0	-	-	0	-	-	0	-	-
Interest on working capital	801	1189	984	48.5	1283	1227	-4.3	317	315	-0.7
Miscellaneous	0	125	171	-	4370	5737	31.3	11	15	37.8
Fixed Cost	13193	12138	14332	-8.0	11902	11574	-2.8	6009	4836	-19.5

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (e) : Ragi : Break-up of Cost of Cultivation

Cost Items	Karnataka			Maharashtra			Odisha			
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2017-18	2018-19	2017-18	2018-19	% change in 2018-19 over 2017-18
Rental value of owned land	11514	10857	13280	-5.7	22.3	7570	8733	3234	3188	-1.4
Rent paid for leased-in land	0	0	0	-	-	0	0	0	0	-
Land revenue, cesses & taxes	24	17	13	-29.2	-24.6	11	21	21	19	-8.3
Depreciation on implements & Farm buildings	759	158	271	-79.1	71.0	623	650	705	410	-41.9
Interest on fixed capital	896	1106	769	23.5	-30.5	3698	2170	2049	1220	-40.5
Total Cost (C₁/ha)	46719	60199	57254	28.9	-4.9	70516	72230	25516	25876	1.4
A ₁ (₹/ha)	27206	39414	32739	44.9	-16.9	42972	41172	11185	10814	-3.3
A ₂ +FL(₹/ha)	34309	48236	43206	40.6	-10.4	59248	61327	20232	21469	6.1
Yield(qt/ha)	19	17	12	-8.0	-31.5	17	14	7	6	-13.4
A ₁ (₹/qt)	1304	1770	2340	35.7	32.2	2361	2855	1647	1738	5.5
A ₂ +FL(₹/qt)	1620	2166	2982	33.7	37.7	3365	4258	3015	3677	22.0
C ₂ (₹/qt)	2186	2710	3726	24.0	37.5	3982	5019	3803	4433	16.6

Annexures

Annex Table 5.5 (e) : Ragi : Break-up of Cost of Cultivation

Cost Items	Tamil Nadu				Uttarakhand				₹/ha	
	2017-18	2018-19	2018-19 over 2017-18	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17		% change in 2018-19 over 2017-18
	44283	29084	-34.3		25371	37658	34797	48.4		-7.6
Operational Cost										
Human Labour										
Casual	17606	8898	-49.5		540	1086	1192	101.2	9.8	
Attached	25	0	-		0	0	0	-	-	
Family	7192	7390	2.8		19740	25974	21957	31.6	-15.5	
Total	24822	16288	-34.4		20280	27060	23149	33.4	-14.5	
Bullock Labour										
Hired	0	0	-		0	9239	10044	-	8.7	
Owned	0	0	-		4419	209	232	-95.3	11.1	
Total	0	0	-		4419	9448	10277	113.8	8.8	
Machine Labour										
Hired	7533	6193	-17.8		0	0	0	-	-	
Owned	115	91	-20.9		0	0	0	-	-	
Total	7648	6284	-17.8		0	0	0	-	-	
Seed	1285	404	-68.6		441	774	969	75.4	25.2	
Fertilisers and Manure										
Fertilisers	4147	4401	6.1		0	22	13	-	-42.0	
Manure	3790	0	-		61	0	0	-	-	
Total	7937	4401	-44.6		61	22	13	-63.8	-42.0	
Other Inputs										
Insecticides	597	535	-10.3		0	0	0	-	-	
Irrigation charges	830	511	-38.5		0	0	0	-	-	
Crop Insurance	0	0	-		-	0	0	-	-	
Payment to Contractor	0	-	-		-	0	-	-	-	
Interest on working capital	1124	657	-41.5		171	354	389	107.5	9.9	
Miscellaneous	39	4	-90.5		0	0	0	-	-	
Fixed Cost	14032	14705	4.8		6090	9992	10162	64.1	1.7	
Rental value of owned land	10782	11059	2.6		5118	6665	7093	30.2	6.4	

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (e) : Ragi : Break-up of Cost of Cultivation

Cost Items	Tamil Nadu			Uttarakhand			₹/ha	
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19		% change in 2017-18 over 2016-17
Rent paid for leased-in land	0	0	-	0	0	0	-	
Land revenue, cesses & taxes	13	11	-11.7	1	0	0	-	
Depreciation on implements & Farm buildings	941	1091	16.0	140	1457	1373	941.6	
Interest on fixed capital	2296	2543	10.8	832	1871	1695	125.0	
Total Cost (C₂/ha)	58314	43789	-24.9	31461	47650	44959	51.5	
A ₁ (₹/ha)	38044	22796	-40.1	5772	13141	14213	127.7	
A ₂ +FL(₹/ha)	45236	30187	-33.3	25512	39114	36170	53.3	
Yield(qt/ha)	11	12	10.2	19	11	11	-43.9	
A ₁ (₹/qt)	3084	1838	-40.4	272	1127	1242	314.7	
A ₂ +FL(₹/qt)	3691	2434	-34.1	1202	3356	3163	179.3	
C ₂ (₹/qt)	4758	3530	-25.8	1482	4088	3930	175.9	

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Annex Table 5.5 (f) : Arhar (Tur) : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh			Bihar			Gujarat			₹/ha		
	2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19		% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	Operational Cost	34013	28802	-15.3	19284	20507	6.3	28366	36893		38250	30.1
Human Labour												
Casual	12269	9007	-26.6	6783	4333	-36.1	7263	9772	7909	34.6	-19.1	
Attached	0	0	-	0	0	-	0	149	98	-	-34.4	
Family	5829	3845	-34.0	3104	6447	107.7	7200	12167	11131	69.0	-8.5	
Total	18097	12852	-29.0	9887	10781	9.0	14462	22088	19137	52.7	-13.4	
Bullock Labour												
Hired	2025	1889	-6.7	0	0	-	858	199	329	-76.8	65.7	
Owned	305	37	-87.9	0	0	-	490	4143	5106	745.3	23.2	
Total	2330	1926	-17.3	0	0	-	1348	4342	5435	222.1	25.2	
Machine Labour												
Hired	3157	2200	-30.3	4655	5000	7.4	2514	3364	4979	33.8	48.0	
Owned	3649	4593	25.9	2	0	-	1180	570	1254	-51.7	120.1	
Total	6806	6793	-0.2	4657	5000	7.4	3694	3934	6234	6.5	58.5	
Seed	1007	1214	20.6	2199	2133	-3.0	1868	646	1032	-65.4	59.6	
Fertilisers and Manure												
Fertilisers	2055	1911	-7.0	2051	2167	5.6	1755	1246	982	-29.0	-21.2	
Manure	66	1364	1963.5	0	0	-	493	829	1292	68.0	55.8	
Total	2121	3275	54.4	2051	2167	5.6	2248	2075	2274	-7.7	9.6	
Other Inputs												
Insecticides	2166	1852	-14.5	0	0	-	2713	1619	1406	-40.3	-13.1	
Irrigation charges	16	1	-91.4	0	0	-	1371	1440	1578	5.0	9.6	
Crop Insurance	0	0	-	0	0	-	-	0	0	-	-	
Payment to Contractor	206	-	-	0	-	-	-	0	-	-	-	
Interest on working capital	854	756	-11.4	490	426	-13.1	641	749	822	16.8	9.7	
Miscellaneous	409	132	-67.6	0	0	-	21	0	333	-	-	
Fixed Cost	15916	11453	-28.0	17717	17005	-4.0	14032	14927	10943	6.4	-26.7	

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (f) : Arhar (Tur) : Break- up of Cost of Cultivation

Cost Items	Andhra Pradesh			Bihar			Gujarat				
	2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	₹/ha										
Rental value of owned land	12949	10381	-19.8	15820	15587	-1.5	8025	7080	6988	-11.8	-1.3
Rent paid for leased-in land	1035	0	-	0	0	-	2406	1134	1220	-52.9	7.6
Land revenue, cesses & taxes	0	0	-	117	240	104.7	50	10	18	-79.4	72.9
Depreciation on implements & Farm buildings	163	105	-35.6	472	418	-11.4	157	329	299	109.8	-9.3
Interest on fixed capital	1768	967	-45.3	1307	760	-41.9	3394	6373	2418	87.8	-62.1
Total Cost (C₂/ha)	49928	40256	-19.4	37001	37512	1.4	42399	51820	49193	22.2	-5.1
A ₁ (₹/ha)	29382	25063	-14.7	16769	14718	-12.2	23780	26200	28656	10.2	9.4
A ₂ +FL(₹/ha)	35211	28908	-17.9	19873	21165	6.5	30980	38367	39787	23.8	3.7
Yield(qt/ha)	9	7	-22.6	13	11	-16.7	12	11	8	-5.5	-30.4
A ₁ (₹/qt)	3198	3395	6.2	1281	1322	3.2	2081	2249	3558	8.1	58.3
A ₂ +FL(₹/qt)	3695	3867	4.7	1517	1901	25.3	2500	3269	4913	30.8	50.3
C ₂ (₹/qt)	5237	5356	2.3	2827	3369	19.2	3476	4419	6063	27.1	37.2

Annexures

Annex Table 5.5 (f) : Arhar (Tur) : Break-up of Cost of Cultivation

Cost Items	Karnataka					Madhya Pradesh				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)									
Operational Cost	19686	30447	29476	54.7	-3.2	25019	23619	26310	-5.6	11.4
Human Labour										
Casual	4653	4784	4541	2.8	-5.1	2823	5318	6332	88.4	19.1
Attached	53	7	46	-87.3	574.9	286	25	49	-91.1	95.0
Family	2699	5163	4430	91.3	-14.2	7682	6394	6107	-16.8	-4.5
Total	7405	9954	9017	34.4	-9.4	10790	11737	12488	8.8	6.4
Bullock Labour										
Hired	930	2860	2458	207.4	-14.0	80	245	273	205.6	11.6
Owned	1676	2676	4247	59.7	58.7	3764	1551	1251	-58.8	-19.3
Total	2606	5535	6705	112.4	21.1	3844	1796	1525	-53.3	-15.1
Machine Labour										
Hired	4149	5519	5784	33.0	4.8	2760	3772	4693	36.7	24.4
Owned	38	586	417	1428.9	-28.8	406	387	579	-4.5	49.6
Total	4188	6105	6201	45.8	1.6	3165	4159	5272	31.4	26.8
Seed	1395	889	857	-36.3	-3.6	3270	2091	2299	-36.1	9.9
Fertilisers and Manure										
Fertilisers	1462	2820	2698	92.8	-4.3	1058	1552	1807	46.7	16.4
Manure	138	103	500	-25.3	384.0	1085	372	465	-65.7	24.8
Total	1601	2923	3198	82.6	9.4	2143	1924	2271	-10.2	18.0
Other Inputs										
Insecticides	1899	3960	2476	108.5	-37.5	1078	1049	1315	-2.6	25.3
Irrigation charges	79	73	112	-6.8	52.9	161	252	325	56.9	28.9
Crop Insurance	-	0	0	-	-	-	84	151	-	80.7
Payment to Contractor	-	314	0	-	-	-	0	-	-	-
Interest on working capital	515	776	759	50.7	-2.2	525	522	612	-0.6	17.3
Miscellaneous	0	232	151	-	-34.8	43	6	51	-87.0	829.2
Fixed Cost	14266	14165	11343	-0.7	-19.9	16201	11586	13356	-28.5	15.3

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (f) : Arhar (Tur) : Break-up of Cost of Cultivation

Cost Items	Karnataka					Madhya Pradesh				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)									
Rental value of owned land	12380	11842	9677	-4.3	-18.3	11826	7835	10380	-33.8	32.5
Rent paid for leased-in land	0	0	0	-	-	0	0	0	-	-
Land revenue, cesses & taxes	11	10	11	-13.6	9.6	11	4	7	-60.9	49.1
Depreciation on implements & Farm buildings	278	215	242	-22.7	12.5	1392	1269	835	-8.8	-34.2
Interest on fixed capital	1597	2098	1413	31.4	-32.6	2972	2478	2134	-16.6	-13.9
Total Cost (C₂/ha)	33952	44926	40819	32.3	-9.1	41220	35205	39666	-14.6	12.7
A ₁ (₹/ha)	17277	25823	25299	49.5	-2.0	18740	18499	21045	-1.3	13.8
A ₂ +FL(₹/ha)	19976	30986	29728	55.1	-4.1	26422	24892	27152	-5.8	9.1
Yield(qt/ha)	10	11	7	3.6	-30.4	10	7	9	-26.6	22.2
A ₁ (₹/qt)	1617	2355	3346	45.7	42.1	1675	2324	2130	38.7	-8.3
A ₂ +FL(₹/qt)	1889	2826	3899	49.6	38.0	2412	3050	2717	26.4	-10.9
C ₂ (₹/qt)	3210	4090	5355	27.4	30.9	3739	4316	3963	15.4	-8.2

Annexures

Annex Table 5.5 (f) : Arhar (Tur) : Break- up of Cost of Cultivation

Cost Items	Maharashtra					Odisha				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)									
Operational Cost	61520	65030	51721	5.7	-20.5	15797	15058	13838	-4.7	-8.1
Human Labour										
Casual	12394	14091	12716	13.7	-9.8	2080	890	2298	-57.2	158.2
Attached	1228	371	104	-69.8	-71.9	449	61	1	-86.5	-97.7
Family	11277	15200	8504	34.8	-44.1	8154	10429	7532	27.9	-27.8
Total	24899	29662	21324	19.1	-28.1	10684	11379	9831	6.5	-13.6
Bullock Labour										
Hired	1524	2832	2581	85.8	-8.9	59	1	382	-98.5	43280.7
Owned	4050	4495	2360	11.0	-47.5	2643	1888	1606	-28.6	-15.0
Total	5574	7327	4941	31.5	-32.6	2702	1889	1987	-30.1	5.2
Machine Labour										
Hired	8938	9516	11225	6.5	18.0	722	605	693	-16.2	14.5
Owned	1725	659	433	-61.8	-34.3	7	21	2	184.6	-91.0
Total	10663	10176	11658	-4.6	14.6	730	626	695	-14.2	11.0
Seed	2726	2199	1936	-19.3	-11.9	1450	966	906	-33.4	-6.2
Fertilisers and Manure										
Fertilisers	5292	4929	3425	-6.9	-30.5	0	12	158	-	1252.8
Manure	1269	632	561	-50.2	-11.2	0	31	5	-	-84.3
Total	6561	5561	3986	-15.2	-28.3	0	43	163	-	280.2
Other Inputs										
Insecticides	6113	7418	5505	21.3	-25.8	0	0	49	-	-
Irrigation charges	3365	659	802	-80.4	21.8	0	0	0	-	-
Crop Insurance	-	63	11	-	-82.1	-	0	0	-	-
Payment to Contractor	-	175	-	-	-	-	0	-	-	-
Interest on working capital	1523	1510	1310	-0.8	-13.3	232	140	191	-39.4	36.2
Miscellaneous	96	281	247	192.3	-12.1	0	14	15	-	6.8
Fixed Cost	33714	22702	18555	-32.7	-18.3	9399	7645	8719	-18.7	14.0

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Price Policy for KHARIF CROPS



Annex Table 5.5 (f) : Arhar (Tur) : Break-up of Cost of Cultivation

Cost Items	Maharashtra						Odisha			
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)
Rental value of owned land	18749	14084	12885	-24.9	-8.5	6132	5498	6481	-10.3	17.9
Rent paid for leased-in land	0	0	0	-	-	0	0	0	-	-
Land revenue, cesses & taxes	47	63	64	34.8	2.2	19	18	19	-6.5	5.1
Depreciation on implements & Farm buildings	1156	1394	1021	20.6	-26.8	731	648	782	-11.3	20.6
Interest on fixed capital	13763	7160	4584	-48.0	-36.0	2516	1480	1438	-41.2	-2.9
Total Cost (C₂/ha)	95234	87732	70276	-7.9	-19.9	25196	22703	22557	-9.9	-0.6
A ₁ (₹/ha)	51444	51287	44302	-0.3	-13.6	8393	5295	7106	-36.9	34.2
A ₂ +FL(₹/ha)	62722	66487	52806	6.0	-20.6	16547	15724	14638	-5.0	-6.9
Yield(qt/ha)	22	19	16	-15.7	-16.0	4	5	5	32.1	-3.8
A ₁ (₹/qt)	2248	2638	2732	17.3	3.6	2190	1077	1423	-50.9	32.2
A ₂ +FL(₹/qt)	2744	3445	3264	25.6	-5.3	4253	3073	2949	-27.7	-4.0
C ₂ (₹/qt)	4166	4547	4343	9.1	-4.5	6471	4441	4552	-31.4	2.5

Annexures

Annex Table 5.5 (f) : Arhar (Tur) : Break- up of Cost of Cultivation

Cost Items	Tamil Nadu			Telangana			Uttar Pradesh				
	2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)
Operational Cost	33488	58535	74.8	24922	22103	-11.3	23642	22457	24616	-5.0	9.6
Human Labour											
Casual	14780	16404	11.0	2707	3850	42.2	7062	4493	6676	-36.4	48.6
Attached	0	0	-	8	25	223.2	0	9	5	-	-42.5
Family	4786	27578	476.3	4795	5804	21.0	8490	9405	8154	10.8	-13.3
Total	19566	43982	124.8	7510	9678	28.9	15552	13908	14836	-10.6	6.7
Bullock Labour											
Hired	0	0	-	1276	467	-63.4	0	0	0	-	-
Owned	0	0	-	257	589	129.0	32	42	0	30.0	-
Total	0	0	-	1533	1056	-31.1	32	42	0	30.0	-
Machine Labour											
Hired	3202	4813	50.3	5217	3404	-34.7	2777	3761	4180	35.4	11.1
Owned	1325	425	-67.9	27	1725	6179.9	942	277	14	-70.6	-94.9
Total	4527	5238	15.7	5244	5129	-2.2	3719	4038	4194	8.6	3.9
Seed	1763	2338	32.6	1085	1224	12.9	2402	2054	2736	-14.5	33.2
Fertilisers and Manure											
Fertilisers	3872	1118	-71.1	2707	2141	-20.9	480	210	370	-56.3	76.6
Manure	886	3311	273.8	0	0	-	0	22	37	-	70.4
Total	4757	4429	-6.9	2707	2141	-20.9	480	231	407	-51.8	76.0
Other Inputs											
Insecticides	1940	394	-79.7	1935	2251	16.3	5	293	29	5261.4	-90.2
Irrigation charges	58	1165	1894.9	0	4	-	992	1305	1917	31.6	46.9
Crop Insurance	0	0	-	0	0	-	-	0	0	-	-
Payment to Contractor	0	-	-	4093	-	-	-	190	-	-	-
Interest on working capital	870	938	7.9	610	494	-19.0	459	395	499	-13.9	26.1
Miscellaneous	7	51	621.2	205	125	-39.1	0	0	0	-	-
Fixed Cost	17395	16541	-4.9	7885	7992	1.4	25397	20845	22903	-17.9	9.9

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (f) : Arhar (Tur) : Break- up of Cost of Cultivation

Cost Items	Tamil Nadu			Telangana			Uttar Pradesh				
	2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	₹/ha										
Rental value of owned land	12217	13448	10.1	7510	4238	-43.6	19439	15485	16462	-20.3	6.3
Rent paid for leased-in land	0	0	-	0	1353	-	119	0	951	-	-
Land revenue, cesses & taxes	15	11	-25.0	0	0	-	20	17	10	-18.7	-40.8
Depreciation on implements & Farm buildings	1818	336	-81.5	149	200	34.4	1036	1335	1889	28.8	41.5
Interest on fixed capital	3346	2746	-17.9	226	2202	874.7	4783	4008	3592	-16.2	-10.4
Total Cost (C₂/ha)	50883	75075	47.5	32807	30095	-8.3	49040	43302	47519	-11.7	9.7
A ₁ (₹/ha)	30535	31304	2.5	20276	17852	-12.0	16328	14403	19312	-11.8	34.1
A ₂ +FL(₹/ha)	35320	58882	66.7	25071	23656	-5.6	24818	23808	27466	-4.1	15.4
Yield(qt/ha)	8	9	13.0	5	2	-45.6	10	8	10	-12.8	12.8
A ₁ (₹/qtl)	3900	3801	-2.5	4276	6603	54.4	1424	1639	1942	15.1	18.5
A ₂ +FL(₹/qtl)	4617	6822	47.7	5444	8667	59.2	2184	2348	2654	7.5	13.0
C ₂ (₹/qtl)	6651	8691	30.7	7122	11284	58.4	4325	4261	4585	-1.5	7.6

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Annex Table 5.5 (g) : Moong : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh			Bihar			Gujarat			(₹/ha)
	2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	
Operational Cost	16296	16301	0.0	14650	16426	12.1	27479	23505	-14.5	8.1
Human Labour										
Casual	5230	3620	-30.8	1328	717	-46.0	7080	4873	-31.2	-26.0
Attached	38	49	27.1	0	0	-	0	77	-	-
Family	1905	2448	28.5	3934	4917	25.0	7214	7626	5.7	72.2
Total	7174	6117	-14.7	5262	5634	7.1	14294	12575	-12.0	33.1
Bullock Labour										
Hired	130	51	-60.6	0	0	-	520	29	-94.5	-
Owned	334	368	10.4	0	0	-	387	164	-57.6	84.3
Total	464	420	-9.5	0	0	-	907	193	-78.7	56.7
Machine Labour										
Hired	2407	4046	68.1	7543	7543	0.0	4692	1745	-62.8	46.0
Owned	39	32	-17.7	0	0	-	888	2572	189.6	-44.2
Total	2446	4078	66.7	7543	7543	0.0	5580	4317	-22.6	-7.7
Seed	2161	2123	-1.7	1520	1315	-13.5	1896	2117	11.6	-22.1
Fertilisers and Manure										
Fertilisers	29	8	-73.7	0	1586	-	1235	1594	29.1	-62.4
Manure	0	14	-	0	0	-	1247	758	-39.2	-
Total	29	22	-25.9	0	1586	-	2482	2352	-5.2	-74.5
Other Inputs										
Insecticides	3581	3073	-14.2	0	0	-	954	741	-22.4	-45.4
Irrigation charges	0	38	-	0	0	-	751	730	-2.9	79.9
Crop Insurance	0	0	-	0	0	-	-	0	-	-
Payment to Contractor	0	-	-	0	-	-	-	0	-	-
Interest on working capital	436	423	-3.1	325	349	7.4	614	481	-21.6	-22.7
Miscellaneous	5	7	36.1	0	0	-	0	0	-	-
Fixed Cost	7018	11513	64.0	10059	11524	14.6	9966	5932	-40.5	-11.8

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (g) : Moong : Break-up of Cost of Cultivation

(₹/ha)

Cost Items	Andhra Pradesh			Bihar			Gujarat				
	2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	Rental value of owned land	6539	5500	-15.9	8737	10218	17.0	8042	3588	3803	-55.4
Rent paid for leased-in land	0	5429	-	0	0	-	726	272	0	-62.6	-
Land revenue, cesses & taxes	0	0	-	46	50	7.9	4	2	4	-52.6	112.1
Depreciation on implements & Farm buildings	79	103	30.0	201	201	0.0	102	269	212	163.6	-21.2
Interest on fixed capital	400	480	20.1	1075	1055	-1.9	1092	1802	1214	65.0	-32.6
Total Cost (C₂/ha)	23314	27814	19.3	24709	27951	13.1	37444	29437	30641	-21.4	4.1
A ₁ (₹/ha)	14470	19385	34.0	10963	11760	7.3	21097	16422	12489	-22.2	-24.0
A ₂ +FL(₹/ha)	16376	21833	33.3	14897	16677	11.9	28310	24047	25623	-15.1	6.6
Yield(qt/ha)	6	6	-2.8	4	8	91.8	9	3	3	-64.0	2.4
A ₁ (₹/qt)	1916	2802	46.2	2690	1506	-44.0	2046	4574	3854	123.6	-15.7
A ₂ +FL(₹/qt)	2482	3456	39.2	3655	2136	-41.6	2754	6399	6939	132.4	8.4
C ₂ (₹/qt)	3524	4396	24.7	6083	3580	-41.1	3608	7842	8281	117.3	5.6

Annexures

Annex Table 5.5 (g) : Moong : Break-up of Cost of Cultivation

Cost Items	Karnataka				Madhya Pradesh			Maharashtra					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)												
Operational Cost	14538	21049	20555	44.8	-2.3	17136	18695	9.1	31046	31848	37241	2.6	16.9
Human Labour													
Casual	4678	4309	4124	-7.9	-4.3	3271	5277	61.3	7769	8725	9550	12.3	9.5
Attached	7	60	43	760.1	-29.1	0	870	-	565	81	20	-85.6	-76.1
Family	1785	3289	2487	84.2	-24.4	2975	3193	7.3	5083	5468	7372	7.6	34.8
Total	6470	7658	6654	18.4	-13.1	6246	9340	49.5	13418	14274	16942	6.4	18.7
Bullock Labour													
Hired	524	2286	987	336.5	-56.8	375	141	-62.3	714	1728	1264	141.9	-26.9
Owned	829	1141	2723	37.6	138.6	0	0	-	3437	1983	5253	-42.3	164.9
Total	1353	3427	3710	153.2	8.3	375	141	-62.3	4151	3711	6517	-10.6	75.6
Machine Labour													
Hired	2935	4710	5336	60.5	13.3	3000	2144	-28.5	5250	4977	3842	-5.2	-22.8
Owned	463	680	656	46.9	-3.6	2093	1392	-33.5	319	1460	1775	357.1	21.6
Total	3397	5390	5991	58.6	11.2	5093	3536	-30.6	5569	6437	5617	15.6	-12.7
Seed	1214	952	941	-21.6	-1.1	2880	1924	-33.2	1992	1748	1633	-12.2	-6.6
Fertilisers and Manure													
Fertilisers	1194	1995	1613	67.2	-19.1	1099	1689	53.7	3697	2231	2032	-39.6	-8.9
Manure	176	0	91	-	-	0	569	-	755	1027	2096	36.2	104.0
Total	1369	1995	1705	45.7	-14.6	1099	2258	105.5	4452	3259	4128	-26.8	26.7
Other Inputs													
Insecticides	342	504	940	47.1	86.6	1008	974	-3.4	651	964	1203	48.1	24.8
Irrigation charges	5	128	4	2259.6	-97.0	0	0	-	9	116	216	1243.3	86.7
Crop Insurance	-	0	0	-	-	0	0	-	-	6	19	-	215.8
Payment to Contractor	-	386	-	-	-	0	-	-	-	460	-	-	-

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (g) : Moong : Break-up of Cost of Cultivation

Cost items	Karnataka						Madhya Pradesh			Maharashtra				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2017-18	2018-19	2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
Interest on working capital	386	538	548	39.3	1.7		429	470	9.5	787	799	905	1.6	13.2
Miscellaneous	0	72	63	-	-12.8		6	53	745.5	19	73	61	286.7	-16.3
Fixed Cost	7083	8106	9357	14.4	15.4		4658	6349	36.3	9882	10074	9711	1.9	-3.6
Rental value of owned land	5073	7179	8506	41.5	18.5		3611	5286	46.4	5871	4703	4136	-19.9	-12.1
Rent paid for leased-in land	0	0	0	-	-		0	0	-	0	0	0	-	-
Land revenue, cesses & taxes	5	10	5	86.0	-54.3		2	2	3.2	22	26	21	16.6	-21.7
Depreciation on implements & Farm buildings	113	104	168	-8.1	61.7		211	249	17.7	537	594	435	10.8	-26.8
Interest on fixed capital	1892	813	679	-57.0	-16.5		834	813	-2.6	3452	4750	5119	37.6	7.8
Total Cost (C₂/ha)	21621	29155	29912	34.8	2.6		21795	25045	14.9	40928	41922	46951	2.4	12.0
A ₁ (₹/ha)	12871	17874	18240	38.9	2.1		14374	15753	9.6	26522	27001	30324	1.8	12.3
A ₁ +F ₁ (₹/ha)	14657	21162	20728	44.4	-2.1		17349	18946	9.2	31605	32468	37697	2.7	16.1
Yield(qt/ha)	5	7	7	32.1	0.0		4	6	62.0	7	6	5	-13.5	-17.8
A ₂ (₹/qt)	2516	2765	2828	9.9	2.3		3734	2531	-32.2	3590	4218	5708	17.5	35.3
A ₂ +F ₁ (₹/qt)	2845	3204	3111	12.6	-2.9		4503	2988	-33.6	4250	5028	7113	18.3	41.5
C ₂ (₹/qt)	4177	4416	4500	5.7	1.9		5662	3946	-30.3	5504	6495	8851	18.0	36.3

Annex Table 5.5 (g) : Moong : Break-up of Cost of Cultivation

Cost Items	Odisha			Rajasthan			Tamil Nadu			
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
Operational Cost	13821	14797	13834	7.1	-6.5	17069	17564	20551	2.9	17.0
Human Labour										
Casual	780	1342	1925	72.2	43.4	1716	3020	2657	76.0	-12.0
Attached	33	0	1	-98.6	137.8	0	0	252	-	140122.2
Family	7961	8177	7234	2.7	-11.5	9146	7559	9677	-17.4	28.0
Total	8774	9519	9160	8.5	-3.8	10861	10579	12586	-2.6	19.0
Bullock Labour										
Hired	178	7	35	-96.0	389.0	0	0	1	-	-
Owned	1645	1696	950	3.1	-44.0	117	1	0	-99.5	-
Total	1824	1703	985	-6.6	-42.2	117	1	1	-99.5	-1.7
Machine Labour										
Hired	1403	1536	1706	9.5	11.1	2512	3007	4406	19.7	46.5
Owned	25	66	144	168.1	119.5	310	564	368	82.4	-34.8
Total	1428	1602	1850	12.2	15.5	2822	3571	4773	26.6	33.7
Seed	1606	1516	1332	-5.6	-12.2	1615	1644	1518	1.8	-7.6
Fertilisers and Manure										
Fertilisers	11	163	229	1427.4	40.2	393	1025	787	160.6	-23.2
Manure	0	0	12	-	-	610	0	242	-	-
Total	11	163	240	1427.4	47.4	1003	1025	1029	2.1	0.4
Other Inputs										
Insecticides	0	67	28	-	-58.9	225	178	287	-20.9	61.3
Irrigation charges	1	15	18	1550.6	22.1	184	241	4	30.9	-98.3
Crop Insurance	-	0	0	-	-	-	0	0	-	-
Payment to Contractor	-	0	-	-	-	-	0	-	-	-

(Contd...)

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Annex Table 5.5 (g) : Moong : Break-up of Cost of Cultivation

Cost Items	Odisha						Rajasthan				Tamil Nadu		
	2017-18		2018-19		% change in 2018-19 over 2017-18		2017-18		2018-19		% change in 2018-19 over 2017-18		
	2016-17	2017-18	2018-19	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18
Interest on working capital	178	201	200	13.0	-0.3	240	303	330	26.3	8.7	480	547	14.0
Miscellaneous	0	12	21	-	78.6	0	22	24	-	7.4	179	64	-64.3
Fixed Cost	5707	5502	5703	-3.6	3.6	7083	4779	5760	-32.5	20.5	11953	11472	-4.0
Rental value of owned land	4040	4405	4540	9.0	3.1	4613	3540	4654	-23.3	31.5	7511	8946	19.1
Rent paid for leased-in land	29	1	18	-98.2	3388.7	27	0	223	-	-	0	0	-
Land revenue, cesses & taxes	9	10	10	17.6	0.3	6	4	3	-31.5	-23.8	6	6	7.3
Depreciation on implements & Farm buildings	409	392	398	-4.3	1.8	315	242	131	-23.3	-45.6	563	522	-7.3
Interest on fixed capital	1220	695	735	-43.0	5.8	2122	993	749	-53.2	-24.6	3873	1998	-48.4
Total Cost (C₂/ha)	19528	20299	19537	4.0	-3.8	24152	22343	26311	-7.5	17.8	31049	32161	3.6
A ₁ (₹/ha)	6306	7023	7027	11.4	0.1	8270	10251	11232	24.0	9.6	16406	18587	13.3
A ₂ +FL(₹/ha)	14268	15200	14261	6.5	-6.2	17416	17810	20909	2.3	17.4	19665	21218	7.9
Yield(qt/ha)	3	4	3	27.6	-9.5	5	4	4	-17.6	7.3	5	6	22.2
A ₁ (₹/qt)	2097	1846	2062	-12.0	11.7	1415	2206	2361	55.9	7.1	3466	3231	-6.8
A ₂ +FL(₹/qt)	4805	3988	4144	-17.0	3.9	2998	3803	4313	26.8	13.4	4067	3556	-12.6
C ₂ (₹/qt)	6555	5325	5669	-18.8	6.5	4125	4775	5396	15.8	13.0	6419	5377	-16.2

Annexures

Annex Table 5.5 (g) : Moong : Break-up of Cost of Cultivation

Cost Items	Telangana			Uttar Pradesh			West Bengal		
	2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18
Operational Cost	27484	21926	-20.2	20954	19330	-7.7	24752	12296	-50.3
Human Labour									
Casual	3028	3250	7.3	3505	3480	-0.7	9817	2689	-72.6
Attached	1133	0	-	0	0	-	0	0	-
Family	12667	10265	-19.0	7813	8254	5.6	7572	3364	-55.6
Total	16828	13515	-19.7	11318	11733	3.7	17388	6053	-65.2
Bullock Labour									
Hired	87	0	-	230	0	-	0	0	-
Owned	0	1456	-	1499	437	-70.9	0	0	-
Total	87	1456	-	1729	437	-74.8	0	0	-
Machine Labour									
Hired	3399	3090	-9.1	2584	3995	54.6	3392	2292	-32.4
Owned	306	274	-10.5	3098	661	-78.7	0	429	-
Total	3705	3364	-9.2	5681	4656	-18.1	3392	2721	-19.8
Seed	954	1333	39.7	1243	1047	-15.8	1490	1641	10.1
Fertilisers and Manure									
Fertilisers	2494	550	-77.9	64	0	-	1053	1316	25.0
Manure	1811	0	-	0	0	-	0	0	-
Total	4305	550	-87.2	64	0	-	1053	1316	25.0
Other Inputs									
Insecticides	339	1108	227.2	502	1119	122.9	908	295	-67.6
Irrigation charges	10	75	692.1	0	0	-	0	0	-
Crop Insurance	0	0	-	0	0	-	0	0	-
Payment to Contractor	807	-	-	0	-	-	0	-	-
Interest on working capital	449	349	-22.2	398	336	-15.7	521	271	-48.0
Miscellaneous	0	175	-	19	3	-83.4	0	0	-
Fixed Cost	5723	4933	-13.8	7762	6018	-22.5	8166	9418	15.3

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Price Policy for KHARIF CROPS



Annex Table 5.5 (g) : Moong : Break-up of Cost of Cultivation

Cost Items	Telangana		Uttar Pradesh		West Bengal	
	2017-18	2018-19	2017-18	2018-19	2017-18	2018-19
	% change in 2018-19 over 2017-18		% change in 2018-19 over 2017-18		% change in 2018-19 over 2017-18	
Rental value of owned land	2730	4193	6433	4731	7427	8640
Rent paid for leased-in land	0	0	0	0	0	0
Land revenue, cesses & taxes	0	0	9	7	0	0
Depreciation on implements & Farm buildings	203	45	354	177	283	154
Interest on fixed capital	2791	695	967	1103	456	624
Total Cost (₹/ha)	33207	26859	28716	25348	32918	21714
A ₁ (₹/ha)	15020	11706	13503	11260	17464	9086
A ₂ + FL (₹/ha)	27687	21971	21316	19514	25035	12450
Yield (qt/ha)	2	3	5	5	7	6
A ₂ (₹/qt)	7023	3997	2550	2269	2554	1648
A ₂ + FL (₹/qt)	12946	7499	4143	3935	3660	2259
C ₁ (₹/qt)	15527	9168	5452	5107	4815	3938

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Annex Table 5.5 (h) : Urad : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh			Chhattisgarh			Gujarat				
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2017-18	2018-19	2018-19 over 2017-18	% change in 2018-19 over 2017-18
Operational Cost	22615	21713	-4.0	27384	27510	31052	0.5	25080	26803	6.9	
Human Labour											
Casual	8062	9368	16.2	1550	2493	890	60.9	5773	6850	18.7	
Attached	16	1	-93.6	0	0	0	-	0	6	-	
Family	1482	1501	1.3	9449	9841	9235	4.1	6928	9094	31.3	
Total	9560	10871	13.7	10998	12334	10125	12.1	12701	15950	25.6	
Bullock Labour											
Hired	20	16	-19.7	68	29	0	-58.0	263	50	-81.1	
Owned	408	114	-72.0	4512	10159	16500	125.2	791	178	-77.5	
Total	428	131	-69.5	4580	10188	16500	122.4	1055	228	-78.4	
Machine Labour											
Hired	2048	3855	88.3	4243	981	398	-76.9	5191	3857	-25.7	
Owned	92	31	-65.9	153	59	144	-61.3	485	1746	260.1	
Total	2139	3887	81.7	4396	1041	542	-76.3	5676	5603	-1.3	
Seed	2404	2735	13.8	2022	1749	1316	-13.5	1517	1634	7.7	
Fertilisers and Manure											
Fertilisers	216	62	-71.2	1293	1309	1868	1.2	1538	1110	-27.9	
Manure	0	11	-	18	0	0	-	600	375	-37.5	
Total	216	73	-66.3	1311	1309	1868	-0.2	2139	1485	-30.6	
Other Inputs											
Insecticides	2374	3234	36.2	921	354	0	-61.5	1091	607	-44.4	
Irrigation charges	209	162	-22.8	2611	0	0	-	332	689	107.8	
Crop Insurance	0	0	-	-	0	0	-	0	0	-	
Payment to Contractor	4537	-	-	-	0	-	-	20	-	-	
Interest on working capital	640	612	-4.4	543	535	661	-1.5	550	537	-2.4	
Miscellaneous	106	9	-91.4	0	0	40	-	0	71	-	
Fixed Cost	11525	15974	38.6	9344	4918	5334	-47.4	8801	6858	-22.1	

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Price Policy for KHARIF CROPS



Annex Table 5.5 (h) : Urad : Break- up of Cost of Cultivation

Cost Items	Andhra Pradesh			Chhattisgarh			Gujarat			
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18
	(₹/ha)									
Rental value of owned land	10682	14315	34.0	7305	3244	3778	-55.6	5058	4717	-6.8
Rent paid for leased-in land	75	1215	1523.7	0	0	0	-	2289	0	-
Land revenue, cesses & taxes	0	0	-	3	2	1	-41.9	4	4	5.2
Depreciation on implements & Farm buildings	132	85	-35.3	369	424	442	14.9	232	176	-24.0
Interest on fixed capital	637	359	-43.6	1667	1248	1113	-25.1	1219	1961	60.9
Total Cost (C₁/ha)	34140	37687	10.4	36728	32428	36386	-11.7	33881	33661	-0.6
A ₁ (₹/ha)	21339	21511	0.8	18307	18096	22260	-1.2	20676	17890	-13.5
A ₂ +FL(₹/ha)	22821	23013	0.8	27756	27936	31495	0.7	27604	26984	-2.2
Yield(qt/ha)	8	10	19.6	8	3	4	-62.4	7	5	-33.4
A ₁ (₹/qt)	2549	2142	-16.0	2278	5986	4704	162.8	2746	3419	24.5
A ₂ +FL(₹/qt)	2773	2350	-15.3	3554	9288	6631	161.3	3462	5002	44.5
C ₂ (₹/qt)	4138	3846	-7.1	4706	10724	7664	127.9	4270	6261	46.6

Annex Table 5.5 (h) : Urad : Break-up of Cost of Cultivation

Cost Items	Madhya Pradesh					Maharashtra					(₹/ha)
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	
	19705	18480	19798	-6.2	7.1	30658	31134	28416	1.6	-8.7	
Operational Cost											
Human Labour											
Casual	3796	2639	3452	-30.5	30.8	8075	6715	6474	-16.8	-3.6	
Attached	110	18	36	-83.5	98.7	345	14	0	-96.0	-	
Family	3741	4585	3463	22.6	-24.5	4940	6217	4028	25.8	-35.2	
Total	7647	7242	6951	-5.3	-4.0	13361	12945	10502	-3.1	-18.9	
Bullock Labour											
Hired	5	3	9	-38.5	188.0	847	1785	2066	110.6	15.8	
Owned	640	78	58	-87.8	-26.5	1551	1837	2807	18.4	52.8	
Total	645	81	66	-87.4	-18.6	2399	3622	4874	51.0	34.6	
Machine Labour											
Hired	4726	5274	6008	11.6	13.9	5843	6445	5818	10.3	-9.7	
Owned	280	280	515	0.3	83.7	1381	760	984	-45.0	29.5	
Total	5006	5555	6523	11.0	17.4	7224	7205	6802	-0.3	-5.6	
Seed	3054	1674	1686	-45.2	0.8	3095	1653	2236	-46.6	35.3	
Fertilisers and Manure											
Fertilisers	1658	1630	1897	-1.7	16.4	2277	2897	1850	27.2	-36.1	
Manure	395	505	679	27.9	34.6	593	118	319	-80.1	169.8	
Total	2052	2135	2576	4.0	20.7	2870	3015	2168	5.1	-28.1	
Other Inputs											
Insecticides	804	1254	1341	56.0	7.0	744	1303	1035	75.1	-20.6	
Irrigation charges	0	1	0	-	-72.3	164	568	0	247.2	-	
Crop Insurance	-	107	88	-	-17.8	-	2	7	-	177.0	
Payment to Contractor	-	0	-	-	-	-	0	-	-	-	
Interest on working capital	484	421	495	-13.0	17.6	779	755	739	-3.1	-2.1	
Miscellaneous	14	11	71	-18.3	538.7	23	65	54	179.8	-18.1	
Fixed Cost	9165	7398	7308	-19.3	-1.2	11557	6984	6373	-39.6	-8.7	

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Price Policy for KHARIF CROPS



Annex Table 5.5 (h) : Urad : Break-up of Cost of Cultivation

Cost Items	Madhya Pradesh						Maharashtra					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		
	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)		
Rental value of owned land	8095	4800	5717	-40.7	19.1	7900	5069	4864	-35.8	-4.0		
Rent paid for leased-in land	0	0	0	-	-	0	0	0	-	-		
Land revenue, cesses & taxes	2	4	3	98.4	-24.7	26	27	29	4.9	7.2		
Depreciation on implements & Farm buildings	371	542	372	46.4	-31.5	431	304	229	-29.4	-24.7		
Interest on fixed capital	697	2052	1217	194.4	-40.7	3200	1584	1251	-50.5	-21.0		
Total Cost (C₂/ha)	28870	25878	27106	-10.4	4.7	42215	38118	34789	-9.7	-8.7		
A ₂ (₹/ha)	16337	14441	16709	-11.6	15.7	26175	25248	24646	-3.5	-2.4		
A ₂ +FL(₹/ha)	20078	19026	20172	-5.2	6.0	31115	31465	28674	1.1	-8.9		
Yield(qt/ha)	7	6	7	-7.9	20.6	7	7	5	-7.6	-22.1		
A ₂ (₹/qt)	2466	2279	2180	-7.6	-4.3	3562	3748	4364	5.2	16.4		
A ₂ +FL(₹/qt)	2940	2913	2562	-0.9	-12.0	4254	4660	5425	9.6	16.4		
C ₂ (₹/qt)	4212	3965	3455	-5.9	-12.9	5773	5642	6556	-2.3	16.2		

Annexures

Annex Table 5.5 (h) : Urad : Break-up of Cost of Cultivation

Cost Items	Odisha				Rajasthan			Tamil Nadu					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	
Operational Cost	15261	13566	14413	-11.1	6.2	21316	22805	7.0	27489	30594	29922	11.3	-2.2
Human Labour													
Casual	1297	1895	1745	46.1	-7.9	1905	5971	213.5	9266	9393	8023	1.4	-14.6
Attached	16	1	2	-90.9	30.3	7	3	-60.7	109	5	19	-95.6	301.5
Family	8496	7593	8330	-10.6	9.7	9302	7031	-24.4	5711	5837	5862	2.2	0.4
Total	9809	9490	10078	-3.3	6.2	11214	13005	16.0	15085	15235	13904	1.0	-8.7
Bullock Labour													
Hired	166	50	35	-69.8	-29.3	66	120	82.3	1	0	0	-	-
Owned	1755	687	1284	-60.8	86.8	405	95	-76.5	0	20	41	-	109.7
Total	1921	737	1320	-61.6	78.9	471	216	-54.2	1	20	41	1278.9	109.7
Machine Labour													
Hired	622	967	802	55.6	-17.1	4479	3784	-15.5	2681	4856	6302	81.1	29.8
Owned	131	121	138	-7.8	14.1	1368	2056	50.3	531	767	442	44.4	-42.3
Total	753	1089	940	44.5	-13.6	5847	5840	-0.1	3213	5623	6744	75.0	19.9
Seed	2479	1468	1609	-40.8	9.7	1390	1583	13.9	3519	2493	2357	-29.2	-5.4
Fertilisers and Manure													
Fertilisers	0	358	184	-	-48.6	887	380	-57.2	1456	2070	1989	42.2	-3.9
Manure	6	0	36	-	-	0	0	-	1220	716	468	-41.3	-34.6
Total	6	358	220	6186.8	-38.6	887	380	-57.2	2675	2786	2457	4.1	-11.8
Other Inputs													
Insecticides	0	204	16	-	-92.2	1141	1293	13.3	1025	1303	1488	27.1	14.2
Irrigation charges	85	30	32	-64.0	5.5	0	0	-	1293	2321	1997	79.5	-14.0
Crop Insurance	-	0	0	-	-	0	0	-	-	0	35	-	-
Payment to Contractor	-	0	-	-	-	0	-	-	-	14	-	-	-
Interest on working capital	209	181	184	-13.4	1.9	364	478	31.3	660	750	729	13.7	-2.8
Miscellaneous	0	8	14	-	67.1	0	10	12400.0	16	49	170	198.6	249.5
Fixed Cost	7987	5449	5816	-31.8	6.7	8179	5848	-28.5	10419	21846	13399	109.7	-38.7

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (h) : Urad : Break- up of Cost of Cultivation

Cost Items	Odisha						Rajasthan				Tamil Nadu			
	2016-17		2017-18		2018-19		2017-18		2018-19		2017-18		2018-19	
		% change in 2017-18 over 2016-17		% change in 2018-19 over 2017-18		% change in 2018-19 over 2017-18		% change in 2018-19 over 2017-18		% change in 2018-19 over 2017-18		% change in 2017-18 over 2016-17		% change in 2018-19 over 2017-18
Rental value of owned land	6230	-30.3	4341	7.4	4661	-13.7	3994	3447	8313	11786	9111	41.8	11786	-22.7
Rent paid for leased-in land	21	-28.9	15	452.7	83	-	0	0	10	58	101	458.8	58	73.8
Land revenue,cesses & taxes	12	-12.6	11	1.1	11	-35.4	10	6	5	9	7	81.3	9	-24.4
Depreciation on implements & Farm buildings	332	12.3	372	22.7	457	-47.7	581	304	226	613	468	171.7	613	-23.6
Interest on fixed capital	1392	-49.0	710	-14.9	604	-41.8	3595	2091	1865	9381	3712	403.0	9381	-60.4
Total Cost (C₂/ha)	23248	-18.2	19015	6.4	20229	-2.9	29495	28653	37908	52440	43322	38.3	52440	-17.4
A ₁ (₹/ha)	7126	-10.6	6371	4.1	6634	27.6	12604	16084	22019	25437	24636	15.5	25437	-3.1
A ₂ +FL(₹/ha)	15622	-10.6	13964	7.2	14964	5.5	21907	23115	27730	31274	30498	12.8	31274	-2.5
Yield(qt/ha)	4	3.9	4	-2.4	4	-0.9	6	6	5	8	8	49.7	8	-6.6
A ₂ (₹/qt)	1948	-20.2	1554	12.0	1740	28.1	1953	2503	3923	3052	3198	-22.2	3052	4.8
A ₂ +FL(₹/qt)	4227	-15.9	3555	10.4	3926	4.2	3349	3488	5026	3752	3936	-25.3	3752	4.9
C ₂ (₹/qt)	6294	-23.1	4838	9.8	5310	-3.7	4482	4317	6861	6303	5594	-8.1	6303	-11.3

Annexures

Price Policy for KHARIF CROPS



Annex Table 5.5 (h) : Urad : Break- up of Cost of Cultivation

Cost Items	Rajasthan				Tamil Nadu				(%/ha)	
	2017-18	2018-19	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17		
Rental value of owned land	5552	4582	-17.5	7523	4435	5731	-41.1	29.2		
Rent paid for leased-in land	0	0	-	26	0	425	-	-		
Land revenue, cesses & taxes	0	0	-	3	6	3	86.3	-52.3		
Depreciation on implements & Farm buildings	451	54	-88.1	330	193	240	-41.7	24.8		
Interest on fixed capital	7399	268	-96.4	2364	1184	1198	-49.9	1.1		
Total Cost (C₂/ha)	45316	28723	-36.6	24617	20671	25215	-16.0	22.0		
A ₁ (₹/ha)	18095	13352	-26.2	10132	9964	12071	-1.7	21.1		
A ₂ +FL(₹/ha)	32364	23873	-26.2	14730	15052	18287	2.2	21.5		
Yield(qt/ha)	4	3	-20.4	4	3	5	-22.5	52.2		
A ₂ (₹/qt)	4746	4420	-6.9	2322	2713	2273	16.8	-16.2		
A ₂ +FL(₹/qt)	8489	7903	-6.9	3358	4239	3412	26.2	-19.5		
C ₂ (₹/qt)	11886	9508	-20.0	5600	5821	4698	3.9	-19.3		

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Annex Table 5.5 (i) : Groundnut : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh			Gujarat			Karnataka			₹/ha)			
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18		2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	Operational Cost	46918	36867	-21.4	59673	55209	56939	-7.5	35826		42159	36266	17.7
Human Labour													
Casual	10355	8796	-15.1	10307	10268	10541	-0.4	9455	10929	7519	15.6	-31.2	
Attached	77	95	23.8	64	24	27	-62.3	0	0	0	-	-	
Family	8249	4879	-40.9	10108	9189	9109	-9.1	5664	5555	4673	-1.9	-15.9	
Total	18680	13769	-26.3	20479	19482	19677	-4.9	15119	16485	12191	9.0	-26.0	
Bullock Labour													
Hired	612	850	38.8	723	701	697	-3.0	3878	2523	1779	-34.9	-29.5	
Owned	300	478	59.3	3399	3380	4560	-0.6	1716	2694	1817	57.0	-32.5	
Total	912	1328	45.5	4123	4082	5257	-1.0	5594	5217	3596	-6.7	-31.1	
Machine Labour													
Hired	4764	5191	9.0	5223	5228	5026	0.1	2808	2876	4105	2.4	42.7	
Owned	215	117	-45.5	1598	1499	2616	-6.2	240	759	696	216.5	-8.2	
Total	4979	5308	6.6	6820	6727	7642	-1.4	3048	3635	4801	19.3	32.1	
Seed	11351	10823	-4.6	13921	11143	10358	-20.0	7605	10058	9739	32.2	-3.2	
Fertilisers and Manure													
Fertilisers	2263	2779	22.8	2816	3062	3486	8.7	2787	4684	2823	68.1	-39.7	
Manure	2949	811	-72.5	3504	3670	3486	4.7	159	290	152	81.7	-47.3	
Total	5212	3590	-31.1	6320	6731	6972	6.5	2946	4973	2975	68.8	-40.2	
Other Inputs													
Insecticides	884	605	-31.6	4029	3405	2785	-15.5	223	131	97	-41.4	-25.3	
Irrigation charges	483	356	-26.4	2084	1728	2407	-17.1	378	354	1814	-6.4	413.0	
Crop Insurance	0	0	-	-	0	0	-	-	0	0	-	-	
Payment to Contractor	3106	-	-	-	516	-	-	-	83	0	-	-	
Interest on working capital	1172	969	-17.3	1502	1395	1449	-7.2	914	1112	957	21.6	-13.9	
Miscellaneous	140	119	-15.2	395	0	392	-	0	196	94	-	-52.1	
Fixed Cost	17064	9093	-46.7	19756	19526	17643	-1.2	14463	13468	10342	-6.9	-23.2	

(Contd...)

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Annex Table 5.5 (i) : Groundnut : Break- up of Cost of Cultivation

Cost Items	Andhra Pradesh			Gujarat			Karnataka			₹/ha			
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18		2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	Rental value of owned land	14130	7179	-49.2	15812	14791	13918	-6.5	11930		9578	8338	-19.7
Rent paid for leased-in land	1096	549	-49.9	933	389	389	-58.3	0	0	0	-	-	
Land revenue, cesses & taxes	0	0	-	7	5	6	-28.6	14	16	6	13.6	-64.0	
Depreciation on implements & Farm buildings	247	210	-14.8	152	336	276	121.6	633	293	261	-53.8	-10.8	
Interest on fixed capital	1591	1155	-27.4	2852	4005	3054	40.4	1886	3580	1736	89.9	-51.5	
Total Cost (C₂/ha)	63982	45961	-28.2	79429	74734	74582	-5.9	50289	55711	46607	10.8	-16.3	
A ₁ (₹/ha)	40012	32748	-18.2	50656	46749	48501	-7.7	30809	36997	31860	20.1	-13.9	
A ₂ +F ₁ (₹/ha)	48261	37627	-22.0	60765	55939	57611	-7.9	36473	42552	36533	16.7	-14.1	
Yield(qt/ha)	12	5	-57.4	21	18	15	-13.8	9	9	6	0.8	-37.4	
A ₁ (₹/qt)	3079	5642	83.2	2056	2175	2607	5.8	2990	3664	5071	22.6	38.4	
A ₂ +F ₁ (₹/qt)	3712	6509	75.3	2457	2568	3080	4.5	3494	4159	5631	19.0	35.4	
C ₂ (₹/qt)	4927	7915	60.7	3212	3429	3984	6.8	4695	5425	7002	15.5	29.1	



Annex Table 5.5 (i) : Groundnut : Break- up of Cost of Cultivation

Cost Items	Madhya Pradesh			Maharashtra			₹/ha)	
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19		% change in 2017-18 over 2016-17
Operational Cost	47652	46315	-2.8	70799	60639	71664	-14.4	18.2
Human Labour								
Casual	15000	11135	-25.8	13492	12268	17113	-9.1	39.5
Attached	0	17	-	30	238	11	707.8	-95.4
Family	9401	9213	-2.0	18626	16387	14746	-12.0	-10.0
Total	24401	20366	-16.5	32147	28893	31870	-10.1	10.3
Bullock Labour								
Hired	938	612	-34.7	590	330	965	-44.0	192.0
Owmed	0	0	-	3286	4339	9856	32.1	127.1
Total	938	612	-34.7	3876	4670	10821	20.5	131.7
Machine Labour								
Hired	4875	5151	5.7	8138	9213	7095	13.2	-23.0
Owmed	0	246	-	803	893	1409	11.2	57.8
Total	4875	5397	10.7	8941	10105	8504	13.0	-15.8
Seed	9500	10691	12.5	8935	8904	9282	-0.4	4.3
Fertilisers and Manure								
Fertilisers	4818	3641	-24.4	2051	4416	3765	115.4	-14.7
Manure	0	1206	-	8067	129	3982	-98.4	2988.6
Total	4818	4847	0.6	10117	4545	7747	-55.1	70.5
Other Inputs								
Insecticides	1363	2684	97.0	407	36	80	-91.0	119.5
Irrigation charges	0	211	-	4795	2008	1504	-58.1	-25.1
Crop Insurance	600	231	-61.5	-	0	0	-	-
Payment to Contractor	0	-	-	-	0	-	-	-
Interest on working capital	1159	1124	-3.0	1581	1341	1725	-15.2	28.6
Miscellaneous	0	153	-	0	137	131	-	-4.4
Fixed Cost	14867	14980	0.8	14198	14870	15861	4.7	6.7

(Contd...)

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Annex Table 5.5 (i) : Groundnut : Break- up of Cost of Cultivation

Cost Items	Madhya Pradesh				Maharashtra				₹/ha	
	2017-18	2018-19	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17		
Rental value of owned land	12563	12864	2.4		9099	10139	10743	11.4	6.0	
Rent paid for leased-in land	0	0	-		0	0	0	-	-	
Land revenue, cesses & taxes	2	3	42.5		27	18	28	-31.7	51.2	
Depreciation on implements & Farm buildings	1085	651	-40.0		603	617	436	2.2	-29.3	
Interest on fixed capital	1217	1461	20.1		4469	4096	4654	-8.3	13.6	
Total Cost (C₂/ha)	62519	61294	-2.0		84998	75509	87524	-11.2	15.9	
A ₁ (₹/ha)	39339	37756	-4.0		52804	44887	57381	-15.0	27.8	
A ₂ +F ₁ (₹/ha)	48740	46969	-3.6		71429	61274	72127	-14.2	17.7	
Yield(qt/ha)	15	14	-5.4		8	13	12	56.6	-10.2	
A ₁ (₹/qt)	2505	2554	1.9		6041	3187	4746	-47.2	48.9	
A ₂ +F ₁ (₹/qt)	3104	3161	1.8		7931	4429	5738	-44.2	29.6	
C ₂ (₹/qt)	3981	4133	3.8		9356	5454	6995	-41.7	28.3	

Annexures

Annex Table 5.5 (i) : Groundnut : Break- up of Cost of Cultivation

Cost Items	Odisha					Rajasthan					₹/ha
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	
	39636	45724	46726	15.4	2.2	42951	43170	48693	0.5	12.8	
Operational Cost											
Human Labour											
Casual	7489	7528	10690	0.5	42.0	1606	2048	5171	27.6	152.5	
Attached	152	0	1	-	-	1686	6	3	-99.6	-56.5	
Family	17089	22443	19577	31.3	-12.8	10570	10908	12851	3.2	17.8	
Total	24731	29972	30268	21.2	1.0	13862	12963	18025	-6.5	39.1	
Bullock Labour											
Hired	766	393	570	-48.7	45.0	25	12	64	-52.8	437.1	
Owned	1532	4006	2910	161.5	-27.4	47	12	146	-74.6	1117.6	
Total	2298	4399	3480	91.4	-20.9	72	24	210	-66.9	776.9	
Machine Labour											
Hired	1738	1011	1512	-41.8	49.6	5792	4747	5899	-18.1	24.3	
Owned	171	183	224	6.9	22.2	695	2506	1776	260.6	-29.1	
Total	1910	1194	1736	-37.5	45.4	6487	7252	7675	11.8	5.8	
Seed	7962	7337	7814	-7.8	6.5	11512	11643	12002	1.1	3.1	
Fertilisers and Manure											
Fertilisers	1878	1751	2272	-6.7	29.8	2426	3408	2385	40.5	-30.0	
Manure	0	326	286	-	-12.1	631	1251	1817	98.3	45.3	
Total	1878	2077	2559	10.6	23.2	3057	4658	4202	52.4	-9.8	
Other Inputs											
Insecticides	0	1	0	-	-70.7	2796	1179	1243	-57.8	5.5	
Irrigation charges	174	4	2	-97.9	-38.4	4184	4466	4211	6.7	-5.7	
Crop Insurance	-	0	0	-	-	-	0	0	-	-	
Payment to Contractor	-	0	-	-	-	-	0	-	-	-	
Interest on working capital	683	705	823	3.3	16.6	981	978	1086	-0.4	11.1	
Miscellaneous	0	35	44	-	28.3	0	7	39	-	477.6	
Fixed Cost	14187	12749	13034	-10.1	2.2	25437	17520	17717	-31.1	1.1	

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Price Policy for KHARIF CROPS



Annex Table 5.5 (i) : Groundnut : Break- up of Cost of Cultivation

Cost Items	Odisha						Rajasthan					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	
Rental value of owned land	11735	10947	11233	-6.7	2.6		19069	13443	14957	-29.5	11.3	
Rent paid for leased-in land	0	0	0	-	-		0	0	164	-	-	
Land revenue, cesses & taxes	15	17	18	12.5	6.0		11	6	5	-44.8	-24.1	
Depreciation on implements & Farm buildings	449	426	552	-5.2	29.6		222	358	216	61.5	-39.7	
Interest on fixed capital	1988	1360	1231	-31.6	-9.5		6135	3713	2376	-39.5	-36.0	
Total Cost (C₂/ha)	53822	58473	59760	8.6	2.2		68388	60690	66410	-11.3	9.4	
A ₁ (₹/ha)	23011	23723	27719	3.1	16.8		32615	32626	36226	0.0	11.0	
A ₂ +FL(₹/ha)	40100	46166	47296	15.1	2.4		43184	43535	49078	0.8	12.7	
Yield(qt/ha)	9	10	9	6.6	-2.9		24	19	20	-21.6	5.8	
A ₃ (₹/qt)	2552	2397	2967	-6.1	23.8		1144	1550	1655	35.5	6.8	
A ₂ +FL(₹/qt)	4348	4721	4943	8.6	4.7		1578	2058	2216	30.4	7.7	
C ₂ (₹/qt)	5829	5983	6249	2.6	4.4		2495	2871	2996	15.0	4.4	

Annexures

Annex Table 5.5 (i) : Groundnut : Break-up of Cost of Cultivation

Cost Items	Tamil Nadu				Telangana			Uttar Pradesh			
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18
	(₹/ha)										
Operational Cost	60120	56088	56476	-6.7	0.7	74276	75015	1.0	33218	37432	12.7
Human Labour											
Casual	18734	17381	17461	-7.2	0.5	16476	18587	12.8	5770	9969	72.8
Attached	57	10	83	-81.6	694.8	761	0	-	16	39	142.2
Family	12136	10325	9386	-14.9	-9.1	12179	9165	-24.8	10908	8774	-19.6
Total	30928	27716	26931	-10.4	-2.8	29416	27752	-5.7	16694	18782	12.5
Bullock Labour											
Hired	427	112	290	-73.8	159.4	235	74	-68.7	0	0	-
Owned	168	56	2	-66.6	-97.2	642	0	-	944	470	-50.3
Total	594	168	292	-71.7	73.8	877	74	-91.6	944	470	-50.3
Machine Labour											
Hired	3934	6196	6625	57.5	6.9	7527	12497	66.0	3161	6941	119.6
Owned	681	96	314	-85.9	227.5	137	546	299.3	2594	323	-87.6
Total	4616	6292	6939	36.3	10.3	7664	13044	70.2	5755	7264	26.2
Seed	9569	10377	9691	8.4	-6.6	18839	17529	-7.0	6805	6067	-10.8
Fertilisers and Manure											
Fertilisers	3983	4684	4201	17.6	-10.3	7102	7288	2.6	394	1153	192.7
Manure	5212	2140	3790	-58.9	77.1	2733	111	-95.9	0	43	-
Total	9195	6824	7991	-25.8	17.1	9835	7399	-24.8	394	1197	203.7
Other Inputs											
Insecticides	520	838	702	61.0	-16.2	2823	5556	96.8	796	924	16.0
Irrigation charges	3244	1989	2312	-38.7	16.3	1715	1455	-15.1	780	1859	138.2
Crop Insurance	-	0	0	-	-	0	0	-	0	0	-
Payment to Contractor	-	332	-	-	-	1079	-	-	0	-	-
Interest on working capital	1454	1387	1427	-4.6	2.9	1882	1995	6.0	676	868	28.5
Miscellaneous	0	166	190	-	14.9	147	212	44.3	373	2	-99.6
Fixed Cost	23361	35364	21800	51.4	-38.4	32804	30622	-6.7	11646	13104	12.5

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (i) : Groundnut : Break- up of Cost of Cultivation

Cost Items	Tamil Nadu						Telangana			Uttar Pradesh		
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2017-18	2018-19	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)
Rental value of owned land	17275	19865	12731	15.0	-35.9	29631	22668	22668	-23.5	9508	11444	20.4
Rent paid for leased-in land	13	14	24	11.9	69.3	0	4834	4834	-	0	0	-
Land revenue, cesses & taxes	15	10	8	-33.1	-18.4	0	0	0	-	8	4	-49.1
Depreciation on implements & Farm buildings	308	653	673	112.3	3.1	774	481	481	-37.8	406	306	-24.7
Interest on fixed capital	5750	14821	8363	157.8	-43.6	2399	2639	2639	10.0	1724	1351	-21.6
Total Cost (C₂/ha)	83481	91452	78275	9.5	-14.4	107080	105637	105637	-1.3	44864	50536	12.6
A ₁ (₹/ha)	48319	46441	47795	-3.9	2.9	62870	71165	71165	13.2	22724	28967	27.5
A ₂ +F ₁ (₹/ha)	60456	56766	57181	-6.1	0.7	75050	80330	80330	7.0	33632	37742	12.2
Yield(qt/ha)	19	16	14	-13.5	-16.9	22	21	21	-4.8	11	19	79.4
A ₁ (₹/qt)	2357	2544	3116	8.0	22.5	2764	3177	3177	15.0	2062	1552	-24.7
A ₂ +F ₁ (₹/qt)	3006	3157	3828	5.0	21.3	3299	3586	3586	8.7	3067	1912	-37.7
C ₂ (₹/qt)	4122	5054	5223	22.6	3.4	4707	4719	4719	0.3	4091	2566	-37.3

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Annex Table 5.5 (j) : Soyabean : Break-up of Cost of Cultivation

Cost Items	Chhattisgarh				Karnataka			Madhya Pradesh					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
				17				18				17	18
Operational Cost	17869	17258	27887	-3.4	61.6	23212	21868	-5.8	25774	24728	27924	-4.1	12.9
Human Labour													
Casual	2416	1975	5892	-18.2	198.3	3757	3091	-17.7	3239	3747	4372	15.7	16.7
Attached	0	91	151	-	65.8	0	0	-	93	78	55	-16.0	-29.8
Family	4202	2684	3862	-36.1	43.9	1454	2275	56.5	5228	4498	4479	-14.0	-0.4
Total	6618	4750	9905	-28.2	108.5	5211	5367	3.0	8560	8322	8906	-2.8	7.0
Bullock Labour													
Hired	454	34	0	-92.5	-	720	733	1.9	16	42	16	156.9	-60.7
Owned	0	7	1587	-	22798.3	1835	1187	-35.3	529	377	473	-28.8	25.4
Total	454	41	1587	-91.0	3797.0	2555	1920	-24.9	545	419	489	-23.2	16.8
Machine Labour													
Hired	5387	5072	4737	-5.8	-6.6	7385	6379	-13.6	5312	5473	5898	3.0	7.8
Owned	0	307	548	-	78.4	163	1356	731.2	508	437	640	-14.1	46.6
Total	5387	5379	5285	-0.2	-1.8	7548	7735	2.5	5820	5909	6538	1.5	10.6
Seed	3453	3215	5089	-6.9	58.3	2818	2874	2.0	4615	3646	4932	-21.0	35.3
Fertilisers and Manure													
Fertilisers	1150	1551	2775	34.8	79.0	2659	2045	-23.1	1928	1891	2310	-1.9	22.2
Manure	0	312	624	-	99.9	381	70	-81.6	1634	1593	1330	-2.5	-16.5
Total	1150	1863	3400	62.0	82.5	3040	2116	-30.4	3562	3483	3640	-2.2	4.5
Other Inputs													
Insecticides	393	1029	1464	162.1	42.2	1205	1136	-5.8	1748	2025	2209	15.8	9.1
Irrigation charges	0	259	0	-	-	0	1	600.0	0	16	0	-	-
Crop Insurance	-	281	409	-	45.9	0	0	-	-	287	440	-	53.2
Payment to Contractor	-	0	-	-	-	0	-	-	-	0	-	-	-
Interest on working capital	414	442	728	6.6	64.9	659	594	-10.0	623	613	710	-1.5	15.9
Miscellaneous	0	0	20	-	-	175	126	-28.1	301	7	60	-97.8	796.9
Fixed Cost	8534	6824	10227	-20.0	49.9	7171	10481	46.2	10817	10025	11502	-7.3	14.7

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (j) : Soyabean : Break-up of Cost of Cultivation

Cost Items	Chhattisgarh						Karnataka			Madhya Pradesh				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
Rental value of owned land	7930	3864	7286	-51.3	88.6		5835	8736	49.7	8723	6467	8723	-25.9	34.9
Rent paid for leased-in land	0	0	0	-	-		0	0	-	0	0	0	-	-
Land revenue, cesses & taxes	3	2	2	-31.2	4.4		7	8	23.7	3	4	3	40.0	-20.8
Depreciation on implements & Farm buildings	233	565	534	142.7	-5.4		105	150	42.5	541	788	633	45.8	-19.6
Interest on fixed capital	367	2393	2405	551.3	0.5		1224	1588	29.7	1550	2765	2142	78.4	-22.5
Total Cost (C₂/ha)	26402	24082	38115	-8.8	58.3		30383	32349	6.5	36591	34753	39427	-5.0	13.4
A ₂ (₹/ha)	13903	15141	24562	8.9	62.2		21870	19750	-9.7	21090	21023	24082	-0.3	14.6
A ₂ +FLI(₹/ha)	18105	17825	28424	-1.5	59.5		23324	22025	-5.6	26318	25521	28561	-3.0	11.9
Yield(qt/ha)	10	6	11	-40.7	84.7		9	11	16.6	14	10	13	-27.7	29.2
A ₂ (₹/qt)	1314	2407	2091	83.2	-13.1		2229	1837	-17.6	1484	2011	1775	35.6	-11.8
A ₂ +FLI(₹/qt)	1711	2833	2419	65.6	-14.6		2400	1944	-19.0	1815	2429	2117	33.8	-12.8
C ₂ (₹/qt)	2495	3828	3244	53.4	-15.3		3131	2868	-8.4	2519	3299	2917	31.0	-11.6

Annexures

Annex Table 5.5 (j) : Soyabean : Break-up of Cost of Cultivation

Cost Items	Maharashtra				Rajasthan				Telangana			
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2017-18	2018-19	2018-19	% change in 2018-19 over 2017-18
Operational Cost	38039	35941	34960	-5.5	23274	20294	23352	-12.8	15.1	34710	35556	2.4
Human Labour												
Casual	9224	7680	6819	-16.7	3249	1398	2105	-57.0	50.5	9811	8388	-14.5
Attached	571	479	193	-16.0	438	26	34	-94.1	33.3	9	55	550.2
Family	4333	3934	4593	-9.2	8116	5941	8101	-26.8	36.4	2620	1671	-36.2
Total	14128	12094	11605	-14.4	11803	7365	10240	-37.6	39.0	12440	10115	-18.7
Bullock Labour												
Hired	1388	1400	690	0.8	140	0	0	-	-	81	435	435.8
Owned	2297	3820	3130	66.3	851	416	187	-51.1	-54.9	1890	1226	-35.1
Total	3685	5220	3820	41.7	991	416	187	-58.0	-54.9	1971	1661	-15.7
Machine Labour												
Hired	5900	6005	7067	1.8	3128	4512	5146	44.2	14.1	7530	11413	51.6
Owned	754	493	537	-34.6	796	1316	895	65.3	-32.0	0	286	-
Total	6654	6498	7604	-2.3	3924	5828	6040	48.5	3.7	7530	11699	55.4
Seed	5206	4156	4114	-20.2	5057	4104	4869	-18.9	18.6	4279	3837	-10.3
Fertilisers and Manure												
Fertilisers	3051	3007	2975	-1.5	378	696	78	84.3	-88.8	4853	4369	-10.0
Manure	2002	311	1536	-84.5	0	0	0	-	-	4	0	-
Total	5054	3318	4510	-34.3	378	696	78	84.3	-88.8	4857	4369	-10.0
Other Inputs												
Insecticides	1801	1749	1804	-2.9	586	1443	1450	146.3	0.5	2466	2725	10.5
Irrigation charges	390	184	333	-52.8	76	0	0	-	-	0	8	-
Crop Insurance	-	149	139	-	-	0	0	-	-	0	0	-
Payment to Contractor	-	1500	-	-	-	0	-	-	-	64	-	-
Interest on working capital	1021	970	920	-5.0	459	435	462	-5.3	6.3	972	1027	5.6
Miscellaneous	100	104	112	3.7	0	9	26	-	201.7	130	115	-11.3

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (j) : Soyabean : Break-up of Cost of Cultivation

Cost Items	Maharashtra				Rajasthan				Telangana		
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2017-18	2018-19	% change in 2018-19 over 2017-18
Fixed Cost	18271	10214	11589	-44.1	6834	7772	8932	13.7	15711	19199	22.2
Rental value of owned land	8447	5926	7610	-29.8	4444	5625	6529	26.6	15043	17569	16.8
Rent paid for leased-in land	0	0	0	-	96	0	268	-	0	931	-
Land revenue, cesses & taxes	32	27	28	-14.8	9	7	7	-21.3	0	0	-
Depreciation on implements & Farm buildings	650	689	609	5.9	368	408	306	10.9	179	65	-63.9
Interest on fixed capital	9142	3571	3342	-60.9	1917	1733	1822	-9.6	490	635	29.7
Total Cost (C₂/ha)	56310	46154	46549	-18.0	30107	28067	32284	-6.8	50421	54756	8.6
A ₂ (₹/ha)	34388	32723	31004	-4.8	15630	14768	15833	-5.5	32268	34880	8.1
A ₂ +FL (₹/ha)	38721	36657	35598	-5.3	23746	20709	23934	-12.8	34888	36551	4.8
Yield (qt/ha)	18	13	13	-26.9	8	11	12	36.4	17	19	12.8
A ₂ (₹/qt)	1975	2508	2340	27.0	1840	1218	1234	-33.8	1945	1865	-4.1
A ₂ +FL (₹/qt)	2117	2777	2704	31.2	2672	1722	1843	-35.6	2103	1954	-7.1
C ₂ (₹/qt)	3079	3495	3534	13.5	3364	2312	2485	-31.3	3039	2927	-3.7

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare



Price Policy for KHARIF CROPS

Annex Table 5.5 (k) : Sunflower : Break-up of Cost of Cultivation

(₹/ha)

Cost Items	Karnataka					Odisha
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2018-19
Operational Cost	18009	20529	22927	14.0	11.7	33646
Human Labour						
<i>Casual</i>	5418	5461	5587	0.8	2.3	3908
<i>Attached</i>	0	0	0	-	-	9178
<i>Family</i>	3180	3580	2686	12.6	-25.0	7509
Total	8598	9041	8273	5.2	-8.5	20596
Bullock Labour						
<i>Hired</i>	828	1168	1358	41.1	16.3	0
<i>Owned</i>	899	2192	1207	143.8	-44.9	2411
Total	1727	3360	2565	94.6	-23.7	2411
Machine Labour						
<i>Hired</i>	2763	1990	3313	-28.0	66.5	0
<i>Owned</i>	0	1089	1299	-	19.3	1619
Total	2763	3079	4611	11.5	49.8	1619
Seed	2261	2081	2799	-7.9	34.5	1960
Fertilisers and Manure						
<i>Fertilisers</i>	1570	2015	2880	28.3	42.9	2197
<i>Manure</i>	0	105	545	-	420.2	0
Total	1570	2120	3425	35.0	61.5	2197
Other Inputs						
Insecticides	140	170	198	21.3	16.6	429
Irrigation charges	501	104	398	-79.2	282.3	3559
Crop Insurance	-	0	0	-	-	0
Payment to Contractor	-	-	-	-	-	-
Interest on working capital	449	514	613	14.3	19.4	792
Miscellaneous	0	60	45	-	-25.0	82
Fixed Cost	10574	7938	8089	-24.9	1.9	8206
Rental value of owned land	9547	6050	6079	-36.6	0.5	7414
Rent paid for leased-in land	0	0	0	-	-	0
Land revenue, cesses & taxes	6	6	8	3.8	20.8	10
Depreciation on implements & Farm buildings	129	166	246	28.2	48.6	201
Interest on fixed capital	892	1716	1757	92.4	2.4	580
Total Cost (C₂/ha)	28583	28467	31017	-0.4	9.0	41851
A₂(₹/ha)	14964	17120	20495	14.4	19.7	26348
A₂+FL(₹/ha)	18144	20701	23181	14.1	12.0	33858
Yield(qtl/ha)	12	8	7	-33.9	-13.2	7
A₂(₹/qtl)	1277	2069	2864	62.0	38.4	3881
A₂+FL(₹/qtl)	1538	2552	3244	65.9	27.1	5061
C₂(₹/qtl)	2423	3505	4339	44.7	23.8	6258

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Price Policy for KHARIF CROPS



Annex Table 5.5 (I) : Sesamum : Break-up of Cost of Cultivation

Cost Items	Gujarat						Karnataka			Madhya Pradesh				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
				17	18				18				17	18
Operational Cost	25729	37742	38803	46.7	2.8		17964	29515	64.3	17761	24420	20913	37.5	-14.4
Human Labour														
Casual	6707	9556	11447	42.5	19.8		4904	4473	-8.8	5058	4874	7439	-3.6	52.6
Attached	0	9	0	-	-		0	0	-	0	0	0	-	-
Family	7405	8203	6841	10.8	-16.6		1812	9717	436.1	4788	8603	5518	79.7	-35.9
Total	14112	17767	18287	25.9	2.9		6717	14190	111.3	9846	13477	12957	36.9	-3.9
Bullock Labour														
Hired	211	351	309	66.3	-11.9		2536	1169	-53.9	28	0	0	-	-
Owned	410	304	228	-25.8	-25.0		302	5999	1883.7	274	2510	0	815.9	-
Total	621	655	537	5.5	-18.0		2838	7167	152.5	302	2510	0	731.4	-
Machine Labour														
Hired	1594	3280	2413	105.8	-26.4		4843	4175	-13.8	3136	3307	4882	5.4	47.7
Owned	1412	1271	2384	-10.0	87.6		0	0	-	389	17	339	-95.7	1949.5
Total	3006	4551	4798	51.4	5.4		4843	4175	-13.8	3526	3323	5222	-5.7	57.1
Seed	881	1085	743	23.2	-31.6		514	237	-54.0	979	1491	1158	52.4	-22.3
Fertilisers and Manure														
Fertilisers	2477	3460	1885	39.7	-45.5		2483	3030	22.0	1616	1324	850	-18.0	-35.8
Manure	461	4486	7159	872.8	59.6		0	0	-	822	1522	152	85.1	-90.0
Total	2938	7945	9044	170.4	13.8		2483	3030	22.0	2437	2846	1002	16.8	-64.8
Other Inputs														
Insecticides	1303	997	1555	-23.5	56.0		0	0	-	139	224	0	60.8	-
Irrigation charges	2313	3772	2732	63.1	-27.6		0	0	-	0	0	0	-	-
Crop Insurance	-	0	0	-	-		0	0	-	-	67	88	-	31.8
Payment to Contractor	-	75	-	-	-		0	-	-	-	0	-	-	-
Interest on working capital	555	895	969	61.2	8.2		489	600	22.6	393	479	466	21.9	-2.7
Miscellaneous	1	0	139	-	-		80	117	46.1	139	2	18	-98.6	810.7

(Contd...)

Annexures

Annex Table 5.5 (I) : Sesamum : Break-up of Cost of Cultivation

Cost Items	Gujarat				Karnataka			Madhya Pradesh					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)												
Fixed Cost	13178	14459	15323	9.7	6.0	1361	5878	331.9	6665	10454	9003	56.8	-13.9
Rental value of owned land	6296	10017	12712	59.1	26.9	1256	4370	248.0	5535	7357	6436	32.9	-12.5
Rent paid for leased-in land	4750	41	29	-99.1	-31.2	0	0	-	0	0	0	-	-
Land revenue, cesses & taxes	3	4	5	72.6	17.4	16	13	-15.2	2	6	3	159.4	-48.1
Depreciation on implements & Farm buildings	78	342	210	340.2	-38.6	33	168	405.5	153	630	515	311.3	-18.2
Interest on fixed capital	2051	4054	2368	97.6	-41.6	56	1327	2250.2	974	2461	2047	152.6	-16.8
Total Cost (C₂/ha)	38907	52201	54126	34.2	3.7	19325	35393	83.1	24426	34874	29915	42.8	-14.2
A ₁ (₹/ha)	23155	29928	32206	29.2	7.6	16201	19979	23.3	13129	16454	15913	25.3	-3.3
A ₂ +FL(₹/ha)	30559	38130	39047	24.8	2.4	18013	29696	64.9	17917	25057	21431	39.8	-14.5
Yield(qt/ha)	7	8	7	16.1	-17.3	1	2	49.5	4	6	4	30.3	-37.1
A ₁ (₹/qt)	3376	3738	4815	10.7	28.8	13801	11430	-17.2	2937	2743	4222	-6.6	53.9
A ₂ +FL(₹/qt)	4354	4728	5667	8.6	24.1	15308	16989	11.0	3943	4183	5821	6.1	39.2
C ₂ (₹/qt)	5557	6480	8138	16.6	25.6	16463	20249	23.0	5377	5821	8122	8.3	39.5

Price Policy for KHARIF CROPS



Annex Table 5.5 (I) : Sesamum : Break-up of Cost of Cultivation

Cost Items	Odisha					Rajasthan				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)									
Operational Cost	17052	9496	11535	-44.3	21.5	15423	16274	18446	5.5	13.3
Human Labour										
Casual	5283	1140	1604	-78.4	40.7	1456	3547	4404	143.7	24.2
Attached	0	17	6	-	-63.1	0	0	0	-	-
Family	5328	5739	6753	7.7	17.7	10620	8977	10336	-15.5	15.1
Total	10611	6896	8363	-35.0	21.3	12076	12525	14740	3.7	17.7
Bullock Labour										
Hired	0	267	738	-	176.2	0	0	0	-	-
Owned	1506	0	325	-	-	56	0	0	-	-
Total	1506	267	1063	-82.3	298.0	56	0	0	-	-
Machine Labour										
Hired	3200	1547	891	-51.7	-42.4	2219	2561	2612	15.4	2.0
Owned	0	142	381	-	169.1	253	197	117	-22.1	-40.4
Total	3200	1688	1272	-47.2	-24.7	2472	2758	2729	11.6	-1.0
Seed	761	530	592	-30.3	11.6	457	341	395	-25.4	15.9
Fertilisers and Manure										
Fertilisers	31	0	22	-	-	205	419	282	104.9	-32.7
Manure	0	0	0	-	-	0	0	30	-	-
Total	31	0	22	-	-	205	419	313	104.9	-25.4
Other Inputs										
Insecticides	0	0	0	-	-	12	0	6	-	-
Irrigation charges	588	0	77	-	-	0	0	5	-	-
Crop Insurance	-	0	0	-	-	-	0	0	-	-
Payment to Contractor	-	0	-	-	-	-	0	-	-	-
Interest on working capital	355	114	145	-68.0	27.3	146	221	246	51.9	11.2
Miscellaneous	0	0	1	-	-	0	11	13	-	25.1
Fixed Cost	9175	3841	4840	-58.1	26.0	6745	6600	6287	-2.1	-4.8

(Contd....)

Annexures

Annex Table 5.5 (I) : Sesamum : Break-up of Cost of Cultivation

Cost Items	Odisha						Rajasthan					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	
Rental value of owned land	7119	2934	3464	-58.8	18.1		3147	2836	4862	-9.9	71.4	
Rent paid for leased-in land	389	0	179	-	-		27	0	0	-	-	
Land revenue, cesses & taxes	11	9	12	-12.2	32.6		11	5	6	-51.8	9.3	
Depreciation on implements & Farm buildings	325	314	426	-3.5	35.9		371	273	124	-26.6	-54.6	
Interest on fixed capital	1332	584	759	-56.1	29.8		3188	3486	1296	9.4	-62.8	
Total Cost (C₁/ha)	26227	13337	16375	-49.1	22.8		22168	22875	24733	3.2	8.1	
A ₁ (₹/ha)	12449	4079	5400	-67.2	32.4		5212	7575	8240	45.3	8.8	
A ₂ +F ₁ (₹/ha)	17777	9818	12152	-44.8	23.8		15832	16552	18576	4.5	12.2	
Yield(qt/ha)	6	3	3	-50.0	-7.8		3	2	3	-15.5	21.9	
A ₁ (₹/qt)	2234	1482	2216	-33.7	49.5		1765	2959	2788	67.6	-5.8	
A ₂ +F ₁ (₹/qt)	3096	3469	4656	12.0	34.2		5502	6834	6383	24.2	-6.6	
C ₁ (₹/qt)	4570	4719	6265	3.3	32.8		7704	9446	8493	22.6	-10.1	

Price Policy for KHARIF CROPS



Annex Table 5.5 (I) : Sesamum : Break-up of Cost of Cultivation

Cost Items	Tamil Nadu			Uttar Pradesh			West Bengal		
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
Operational Cost	37140	31143	-16.1	10275	11644	14590	34682	42321	36929
Human Labour									
Casual	14408	11562	-19.7	3344	1671	2104	9373	12301	12067
Attached	42	21	-50.1	0	37	0	0	0	0
Family	8942	7726	-13.6	3823	6232	8000	13187	14184	14929
Total	23391	19309	-17.5	7168	7940	10104	22560	26485	26997
Bullock Labour									
Hired	0	0	-	0	0	0	870	152	130
Owned	0	0	-	0	0	0	187	894	1754
Total	0	0	-	0	0	0	1057	1046	1884
Machine Labour									
Hired	4132	3568	-13.6	1090	2502	3417	3159	4123	3189
Owned	473	865	83.0	1532	565	334	25	22	17
Total	4604	4433	-3.7	2621	3067	3750	3184	4146	3207
Seed	857	900	5.1	277	391	435	622	591	736
Fertilisers and Manure									
Fertilisers	1640	2058	25.5	0	39	16	3368	1906	1864
Manure	2581	1435	-44.4	0	0	0	1212	0	0
Total	4221	3493	-17.2	0	39	16	4580	1906	1864
Other Inputs									
Insecticides	1330	966	-27.4	14	43	44	378	652	570
Irrigation charges	1700	1266	-25.5	0	0	42	1650	2669	1003
Crop Insurance	0	0	-	-	0	0	-	0	0
Payment to Contractor	115	-	-	-	0	-	-	3968	-
Interest on working capital	854	710	-17.0	196	164	200	651	853	667
Miscellaneous	67	67	-0.7	0	1	0	0	5	1

(Contd...)

Annexures

Annex Table 5.5 (I) : Sesamum : Break-up of Cost of Cultivation

Cost Items	Tamil Nadu			Uttar Pradesh				West Bengal				
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
Fixed Cost	17863	19033	6.6	9250	8141	6436	-12.0	10257	12430	11615	21.2	-6.6
Rental value of owned land	10360	10861	4.8	7355	6944	5574	-5.6	8252	10761	10399	30.4	-3.4
Rent paid for leased-in land	0	0	-	0	0	0	-	0	217	22	-	-90.0
Land revenue, cesses & taxes	7	5	-27.0	6	4	4	-34.7	43	7	3	-83.9	-60.8
Depreciation on implements & Farm buildings	500	574	14.6	176	250	250	42.5	494	686	481	38.9	-29.9
Interest on fixed capital	6995	7593	8.5	1713	943	609	-45.0	1468	759	710	-48.3	-6.5
Total Cost (C ₂ /ha)	55002	50176	-8.8	19525	19785	21026	1.3	44939	54751	48544	21.8	-11.3
A ₁ (₹/ha)	28705	23995	-16.4	6633	5666	6843	-14.6	22032	29047	22505	31.8	-22.5
A ₂ +FL(₹/ha)	37646	31721	-15.7	10457	11898	14843	13.8	35219	43231	37434	22.7	-13.4
Yield(qt/ha)	5	5	-7.2	3	3	2	-16.0	9	11	9	22.1	-13.3
A ₂ (₹/qt)	5218	5279	1.2	1609	2246	3495	39.6	2357	2598	2347	10.3	-9.7
A ₂ +FL(₹/qt)	6851	6242	-8.9	3001	4031	7090	34.3	3794	3872	3910	2.1	1.0
C ₂ (₹/qt)	9994	9857	-1.4	5599	6698	10009	19.6	4858	4909	5069	1.1	3.3

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Price Policy for KHARIF CROPS



Annex Table 5.5 (m) : Nigerseed : Break-up of Cost of Cultivation

(₹/ha)

Cost Items	Odisha				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
Operational Cost	15224	17276	13791	13.5	-20.2
Human Labour					
<i>Casual</i>	0	2118	1368	-	-35.4
<i>Attached</i>	0	0	0	-	-
<i>Family</i>	9210	9276	8095	0.7	-12.7
Total	9210	11394	9463	23.7	-17.0
Bullock Labour					
<i>Hired</i>	0	133	113	-	-15.5
<i>Owned</i>	5228	3341	2380	-36.1	-28.8
Total	5228	3475	2492	-33.5	-28.3
Machine Labour					
<i>Hired</i>	0	1201	878	-	-26.9
<i>Owned</i>	0	83	63	-	-24.1
Total	0	1284	941	-	-26.7
Seed	603	676	645	12.0	-4.5
Fertilisers and Manure					
<i>Fertilisers</i>	0	0	0	-	-
<i>Manure</i>	0	205	77	-	-62.6
Total	0	205	77	-	-62.6
Other Inputs					
Insecticides	0	0	0	-	-
Irrigation charges	0	0	0	-	-
Crop Insurance	-	0	0	-	-
Payment to Contractor	-	0	-	-	-
Interest on working capital	182	242	173	33.0	-28.8
Miscellaneous	0	0	0	-	-
Fixed Cost	5803	5387	4955	-7.2	-8.0
Rental value of owned land	3262	3911	3504	19.9	-10.4
Rent paid for leased-in land	0	0	0	-	-
Land revenue, cesses & taxes	10	19	15	85.0	-18.6
Depreciation on implements & Farm buildings	794	415	524	-47.7	26.2
Interest on fixed capital	1737	1042	912	-40.0	-12.5
Total Cost (C₂/ha)	21027	22663	18745	7.8	-17.3
A₂(₹/ha)	6817	8434	6234	23.7	-26.1
A₂+FL(₹/ha)	16028	17710	14329	10.5	-19.1
Yield(qtl/ha)	2	3	3	19.3	1.1
A₂(₹/qtl)	2873	3009	2189	4.7	-27.2
A₂+FL(₹/qtl)	6758	6370	5099	-5.7	-20.0
C₂(₹/qtl)	8863	8141	6679	-8.1	-18.0

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

Annex Table 5.5 (n) : Cotton : Break-up of Cost of Cultivation

Cost Items	Andhra Pradesh			Gujarat			Haryana			(%/ha)			
	2017-18	2018-19	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	2016-17	2017-18		2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	Operational Cost	63799	43164	-32.3	53168	60696	54797	14.2	45862		43853	44458	-4.4
Human Labour													
Casual	22145	14610	-34.0	15379	17038	16335	10.8	11178	9755	8325	-12.7	-14.7	
Attached	40	82	107.8	25	59	32	139.3	509	112	110	-77.9	-1.9	
Family	5652	3167	-44.0	11307	11082	9084	-2.0	15361	15834	15535	3.1	-1.9	
Total	27837	17858	-35.8	26710	28179	25452	5.5	27048	25701	23970	-5.0	-6.7	
Bullock Labour													
Hired	2117	2998	41.6	600	756	794	25.9	34	0	10	-	-	
Owned	2872	1679	-41.5	1113	2452	1374	120.2	288	199	139	-30.8	-30.3	
Total	4989	4677	-6.3	1714	3208	2168	87.2	321	199	148	-38.1	-25.4	
Machine Labour													
Hired	4028	4775	18.6	4158	4779	4563	14.9	2182	2364	2841	8.4	20.2	
Owned	645	303	-53.1	1813	1372	2532	-24.3	2502	3011	4129	20.3	37.2	
Total	4673	5078	8.7	5971	6151	7095	3.0	4684	5375	6970	14.7	29.7	
Seed	4775	5333	11.7	2766	3107	2941	12.3	4116	3868	3644	-6.0	-5.8	
Fertilisers and Manure													
Fertilisers	5671	4177	-26.4	4821	5199	4925	7.8	3304	2764	3452	-16.3	24.9	
Manure	748	15	-98.1	3246	4290	4414	32.2	0	0	0	-	-	
Total	6419	4191	-34.7	8067	9489	9339	17.6	3304	2764	3452	-16.3	24.9	
Other Inputs													
Insecticides	6453	4525	-29.9	3612	3159	2465	-12.5	2241	2233	2137	-0.4	-4.3	
Irrigation charges	46	173	273.2	3048	3743	3414	22.8	3223	2860	3244	-11.3	13.4	
Crop Insurance	0	0	-	-	0	0	-	-	0	0	-	-	
Payment to Contractor	6599	-	-	-	2153	-	-	-	3	-	-	-	
Interest on working capital	1762	1212	-31.2	1269	1503	1385	18.5	924	849	876	-8.1	3.2	
Miscellaneous	247	116	-52.8	12	3	538	-71.5	0	0	15	-	-	

(Contd...)

Annex Table 5.5 (n) : Cotton : Break-up of Cost of Cultivation

(₹/ha)

Cost Items	Karnataka					Madhya Pradesh				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
Operational Cost	43931	43367	39880	-1.3	-8.0	60707	56557	63013	-6.8	11.4
Human Labour										
Casual	15545	11470	11608	-26.2	1.2	11664	17585	18494	50.8	5.2
Attached	0	6	0	-	-	526	304	592	-42.2	94.9
Family	5613	6987	6789	24.5	-2.8	19500	11239	14506	-42.4	29.1
Total	21158	18463	18396	-12.7	-0.4	31690	29127	33592	-8.1	15.3
Bullock Labour										
Hired	1456	1544	1510	6.0	-2.2	0	854	970	-	13.6
Owined	1827	3077	3917	68.4	27.3	7537	5438	3921	-27.8	-27.9
Total	3283	4621	5427	40.7	17.4	7537	6292	4890	-16.5	-22.3
Machine Labour										
Hired	3891	3069	3528	-21.1	15.0	3359	3512	4584	4.5	30.5
Owined	710	2747	1476	287.1	-46.3	76	282	529	268.9	87.4
Total	4600	5816	5004	26.4	-14.0	3436	3794	5113	10.4	34.8
Seed	3233	3998	3341	23.7	-16.4	2186	2212	2098	1.2	-5.2
Fertilisers and Manure										
Fertilisers	4701	4352	3744	-7.4	-14.0	3206	3706	5428	15.6	46.5
Manure	1392	807	276	-42.0	-65.8	3793	2492	2335	-34.3	-6.3
Total	6094	5160	4020	-15.3	-22.1	6999	6198	7763	-11.4	25.3
Other Inputs										
Insecticides	2616	3158	1986	20.7	-37.1	4622	5342	4327	15.6	-19.0
Irrigation charges	1786	791	517	-55.7	-34.6	1576	1459	2490	-7.4	70.6
Crop Insurance	-	0	0	-	-	-	734	1190	-	62.2
Payment to Contractor	-	-	-	-	-	-	0	-	-	-
Interest on working capital	1161	1102	1003	-5.1	-9.0	1249	1373	1470	10.0	7.0
Miscellaneous	0	257	186	-	-27.9	1412	23	80	-98.3	242.7
Fixed Cost	25805	18311	18931	-29.0	3.4	22040	22103	28722	0.3	29.9

Price Policy for KHARIF CROPS



Annex Table 5.5 (n) : Cotton : Break-up of Cost of Cultivation

Cost Items	Karnataka						Madhya Pradesh					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	
	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)	(₹/ha)
Rental value of owned land	21608	14540	14724	-32.7	1.3	14114	17075	22872	21.0	33.9		
Rent paid for leased-in land	0	0	0	-	-	0	0	0	-	-		
Land revenue, cesses & taxes	8	8	9	-0.7	8.4	2	4	6	105.1	39.8		
Depreciation on implements & Farm buildings	448	427	450	-4.6	5.3	1688	917	1369	-45.7	49.4		
Interest on fixed capital	3742	3335	3747	-10.9	12.4	6236	4107	4476	-34.1	9.0		
Total Cost (C₁/ha)	69736	61679	58811	-11.6	-4.6	82747	78660	91736	-4.9	16.6		
A ₁ (₹/ha)	38774	36816	33551	-5.0	-8.9	42896	46239	49882	7.8	7.9		
A ₂ +FL(₹/ha)	44387	43803	40339	-1.3	-7.9	62396	57477	64388	-7.9	12.0		
Yield(qt/ha)	17	13	12	-18.9	-12.5	15	18	20	22.9	11.4		
A ₁ (₹/qt)	2334	2741	2815	17.4	2.7	2739	2402	2378	-12.3	-1.0		
A ₂ +FL(₹/qt)	2632	3213	3373	22.1	5.0	3984	2980	3078	-25.2	3.3		
C ₂ (₹/qt)	4134	4519	4915	9.3	8.8	5283	4077	4385	-22.8	7.6		

Annexures

Annex Table 5.5 (n) : Cotton : Break-up of Cost of Cultivation

Cost Items	Maharashtra					Odisha				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
Operational Cost	58031	63275	62409	9.0	-1.4	47772	51800	52867	8.4	2.1
Human Labour										
Casual	17053	16928	15897	-0.7	-6.1	7803	17150	17573	119.8	2.5
Attached	1079	382	616	-64.6	61.4	216	96	98	-55.5	1.9
Family	9630	12137	10497	26.0	-13.5	22987	15529	15262	-32.4	-1.7
Total	27762	29446	27010	6.1	-8.3	31006	32775	32934	5.7	0.5
Bullock Labour										
Hired	1711	2327	2662	36.0	14.4	140	456	484	226.6	6.1
Owned	4849	4862	7461	0.3	53.5	2760	902	863	-67.3	-4.3
Total	6560	7189	10123	9.6	40.8	2900	1359	1348	-53.1	-0.8
Machine Labour										
Hired	4091	4917	4896	20.2	-0.4	2977	3377	3344	13.4	-1.0
Owned	516	786	1172	52.4	49.1	0	178	223	-	25.8
Total	4606	5703	6068	23.8	6.4	2977	3555	3568	19.4	0.4
Seed	3690	3138	2927	-15.0	-6.7	2596	2620	2608	0.9	-0.5
Fertilisers and Manure										
Fertilisers	6033	8292	7056	37.5	-14.9	4686	7509	7805	60.2	3.9
Manure	2468	877	1521	-64.5	73.4	1941	1445	1666	-25.5	15.3
Total	8501	9169	8576	7.9	-6.5	6626	8954	9471	35.1	5.8
Other Inputs										
Insecticides	2399	3886	3064	62.0	-21.2	916	930	1753	1.5	88.5
Irrigation charges	2521	2742	2879	8.8	5.0	0	0	0	-	-
Crop Insurance	-	285	42	-	-85.2	-	0	0	-	-
Payment to Contractor	-	8	-	-	-	-	436	-	-	-
Interest on working capital	1467	1550	1573	5.7	1.5	751	1099	1140	46.3	3.7
Miscellaneous	525	159	146	-69.7	-8.3	0	72	45	-	-36.7
Fixed Cost	23033	19657	22334	-14.7	13.6	21315	17890	17663	-16.1	-1.3

(Contd....)

Price Policy for KHARIF CROPS



Annex Table 5.5 (n) : Cotton : Break-up of Cost of Cultivation

Cost Items	Maharashtra						Odisha			
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)
Rental value of owned land	15352	10787	14524	-29.7	34.6	18217	15534	15069	-14.7	-3.0
Rent paid for leased-in land	0	0	0	-	-	0	578	959	-	66.1
Land revenue, cesses & taxes	34	34	38	-0.6	12.5	18	12	11	-33.2	-13.4
Depreciation on implements & Farm buildings	761	1057	703	38.9	-33.5	669	743	540	11.2	-27.4
Interest on fixed capital	6886	7779	7068	13.0	-9.1	2411	1023	1085	-57.6	6.0
Total Cost (C₂/ha)	81064	82932	84743	2.3	2.2	69087	69689	70530	0.9	1.2
A ₁ (₹/ha)	49197	52229	52653	6.2	0.8	25472	37604	39114	47.6	4.0
A ₂ +FL(₹/ha)	58827	64366	63150	9.4	-1.9	48459	53133	54376	9.6	2.3
Yield(qt/ha)	18	15	16	-20.9	8.2	16	16	13	2.0	-18.8
A ₁ (₹/qt)	2651	3495	3312	31.8	-5.2	1605	2406	2979	49.9	23.8
A ₂ +FL(₹/qt)	3160	4307	3950	36.3	-8.3	3007	3310	4170	10.1	26.0
C ₂ (₹/qt)	4355	5547	5296	27.4	-4.5	4287	4343	5407	1.3	24.5

Annexures

Annex Table 5.5 (n) : Cotton : Break-up of Cost of Cultivation

Cost Items	Punjab					Rajasthan				
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18
Operational Cost	49680	49450	54028	-0.5	9.3	50412	52072	59508	3.3	14.3
Human Labour										
Casual	14867	17126	18119	15.2	5.8	5631	8792	7911	56.1	-10.0
Attached	2354	1620	1992	-31.2	23.0	395	146	354	-63.0	142.4
Family	9115	6619	7211	-27.4	8.9	23468	22145	25019	-5.6	13.0
Total	26336	25365	27322	-3.7	7.7	29494	31083	33284	5.4	7.1
Bullock Labour										
Hired	0	0	0	-	-	450	88	180	-80.5	105.0
Owned	204	136	55	-33.2	-59.6	858	318	461	-62.9	44.9
Total	204	136	55	-33.2	-59.6	1308	406	641	-68.9	57.9
Machine Labour										
Hired	1072	1104	1607	3.0	45.5	1848	2394	2682	29.6	12.0
Owned	4684	6007	6952	28.3	15.7	922	1614	3613	75.1	123.8
Total	5756	7112	8559	23.6	20.3	2770	4008	6296	44.7	57.1
Seed	5135	5175	5624	0.8	8.7	4964	4652	5270	-6.3	13.3
Fertilisers and Manure										
Fertilisers	3615	3538	3948	-2.1	11.6	2525	3655	3372	44.7	-7.7
Manure	7	0	65	-	-	5469	745	3785	-86.4	408.2
Total	3622	3538	4014	-2.3	13.5	7994	4400	7157	-45.0	62.7
Other Inputs										
Insecticides	6745	5663	6221	-16.0	9.8	1200	2515	2972	109.5	18.2
Irrigation charges	525	1152	587	119.5	-49.0	1850	4070	2792	120.0	-31.4
Crop Insurance	-	0	0	-	-	-	0	0	-	-
Payment to Contractor	-	0	-	-	-	-	0	-	-	-
Interest on working capital	1229	1298	1419	5.6	9.3	816	907	1045	11.1	15.2
Miscellaneous	127	12	228	-90.6	1811.0	16	31	50	95.9	62.1
Fixed Cost	38685	36818	44049	-4.8	19.6	21562	21842	24212	1.3	10.9

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Price Policy for KHARIF CROPS



Annex Table 5.5 (n) : Cotton : Break-up of Cost of Cultivation

Cost Items	Punjab						Rajasthan					
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18		2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	
	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)	(₹/ha)	(₹/ha)	(₹/ha)	(₹/ha)	(%)	(%)	(₹/ha)
Rental value of owned land	30129	26502	34124	-12.0	28.8	17108	14573	18226	-14.8	25.1		
Rent paid for leased-in land	5205	6760	7556	29.9	11.8	0	84	478	-	470.7		
Land revenue, cesses & taxes	0	0	0	-	-	12	7	7	-40.9	2.8		
Depreciation on implements & Farm buildings	327	580	422	77.2	-27.3	399	834	588	108.9	-29.5		
Interest on fixed capital	3023	2976	1947	-1.6	-34.6	4043	6344	4912	56.9	-22.6		
Total Cost (C₁/ha)	88365	86268	98076	-2.4	13.7	71974	73913	83720	2.7	13.3		
A ₁ (₹/ha)	46098	50171	54795	8.8	9.2	27355	30852	35561	12.8	15.3		
A ₂ +FL(₹/ha)	55213	56790	62006	2.9	9.2	50823	52997	60581	4.3	14.3		
Yield(qt/ha)	21	20	24	-3.9	20.0	15	17	17	19.3	-1.9		
A ₁ (₹/qt)	2081	2374	2176	14.1	-8.3	1855	1716	1815	-7.5	5.8		
A ₂ +FL(₹/qt)	2492	2687	2463	7.8	-8.4	3169	2845	3350	-10.2	17.8		
C ₂ (₹/qt)	3988	4082	3895	2.4	-4.6	4570	3989	4657	-12.7	16.8		

Annexures

Annex Table 5.5 (n) : Cotton : Break-up of Cost of Cultivation

Cost Items	Tamil Nadu				Telangana			₹/ha
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2017-18	2018-19	
Operational Cost	70827	94083	89987	32.8	-4.4	64719	57132	-11.7
Human Labour								
Casual	24696	30933	35550	25.3	14.9	15667	17542	12.0
Attached	15	0	0	-	-	185	74	-60.1
Family	20133	30984	23255	53.9	-24.9	9097	9119	0.2
Total	44844	61917	58805	38.1	-5.0	24949	26734	7.2
Bullock Labour								
Hired	0	24	0	-	-	3386	2230	-34.2
Owned	977	0	0	-	-	2972	4228	42.3
Total	977	24	0	-97.6	-	6359	6458	1.6
Machine Labour								
Hired	4529	6424	7717	41.8	20.1	3874	6016	55.3
Owned	258	125	1606	-51.7	1188.5	630	542	-13.9
Total	4787	6549	9323	36.8	42.4	4504	6558	45.6
Seed	3469	3572	3632	3.0	1.7	4821	4720	-2.1
Fertilisers and Manure								
Fertilisers	7525	6952	6466	-7.6	-7.0	8206	7481	-8.8
Manure	3501	7215	3948	106.1	-45.3	224	192	-14.4
Total	11026	14167	10413	28.5	-26.5	8430	7673	-9.0
Other Inputs								
Insecticides	2481	2809	1714	13.2	-39.0	4839	3219	-33.5
Irrigation charges	1638	2733	3926	66.8	43.7	124	219	76.6
Crop Insurance	-	0	0	-	-	0	0	-
Payment to Contractor	-	184	-	-	-	8848	-	-
Interest on working capital	1536	1912	2022	24.5	5.8	1685	1455	-13.7
Miscellaneous	69	217	151	214.8	-30.5	159	97	-39.3
Fixed Cost	27849	29927	23347	7.5	-22.0	25764	30325	17.7

(Contd...)

Price Policy for KHARIF CROPS



Annex Table 5.5 (n) : Cotton : Break-up of Cost of Cultivation

Cost Items	Tamil Nadu					Telangana			(%/ha)
	2016-17	2017-18	2018-19	% change in 2017-18 over 2016-17	% change in 2018-19 over 2017-18	2017-18	2018-19	% change in 2018-19 over 2017-18	
	Rental value of owned land	18257	18002	14819	-1.4	-17.7	20611	23282	
Rent paid for leased-in land	22	0	0	-	-	1801	3815	111.9	
Land revenue, cesses & taxes	7	11	10	57.0	-13.6	0	0	-	
Depreciation on implements & Farm buildings	988	1063	882	7.5	-17.0	331	179	-45.9	
Interest on fixed capital	8575	10851	7637	26.5	-29.6	3021	3048	0.9	
Total Cost (C₂/ha)	98676	124010	113334	25.7	-8.6	90483	87457	-3.3	
A ₁ (₹/ha)	51711	64173	67624	24.1	5.4	57753	52008	-9.9	
A ₂ +F ₁ (₹/ha)	71844	95157	90879	32.4	-4.5	66851	61127	-8.6	
Yield(qt/ha)	15	18	18	24.7	-2.7	16	15	-3.1	
A ₁ (₹/qt)	3485	3489	3650	0.1	4.6	3676	3450	-6.1	
A ₂ +F ₁ (₹/qt)	4886	5184	5084	6.1	-1.9	4287	4044	-5.7	
C ₂ (₹/qt)	6708	6752	6341	0.7	-6.1	5803	5786	-0.3	

Note: Total cost may not match due to rounding off the figures.

Source: Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare



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Annex Table 5.6: All-India Projected Costs of Production
of Kharif Crops for KMS 2021-22 and KMS 2020-21

Crops	Cost of Production (₹/qtl)						% Change in Projected Cost (2021-22 over 2020-21)		
	2020-21			2021-22			A ₂	A ₂ +FL	C ₂
	A ₂	A ₂ +FL	C ₂	A ₂	A ₂ +FL	C ₂			
Paddy	930	1,245	1,667	980	1,293	1,727	5.4	3.9	3.6
Jowar	1,287	1,746	2,393	1,351	1,825	2,478	5.0	4.5	3.6
Bajra	663	1,175	1,555	697	1,213	1,579	5.1	3.2	1.5
Maize	892	1,213	1,606	938	1,246	1,654	5.2	2.7	3.0
Ragi	1,663	2,194	2,763	1,690	2,251	3,004	1.6	2.6	8.7
Arhar (Tur)	2,824	3,796	5,464	2,986	3,886	5,291	5.7	2.4	-3.2
Moong	2,972	4,797	6,289	3,110	4,850	6,110	4.6	1.1	-2.8
Urad	2,787	3,660	5,570	2,918	3,816	5,133	4.7	4.3	-7.8
Groundnut	2,868	3,515	4,512	3,025	3,699	4,732	5.5	5.2	4.9
Soybean	2,138	2,587	3,513	2,215	2,633	3,439	3.6	1.8	-2.1
Sunflower	3,211	3,921	5,079	3,373	4,010	5,027	5.0	2.3	-1.0
Sesamum	2,941	4,570	6,215	3,077	4,871	6,653	4.6	6.6	7.0
Nigerseed	1,988	4,462	6,525	2,062	4,620	6,441	3.7	3.5	-1.3
Cotton	2,920	3,676	4,935	3,054	3,817	5,169	4.6	3.8	4.7

Source: CACP Calculations

Price Policy for KHARIF CROPS



Annex Table 5.7: Comparison of State and CACP Projected Cost of Production (C₂) of Kharif Crops for KMS 2021-22

Crop/ State/Union Territory	State Projections		CACP Projections on the basis of CS data	
	Yield (qtl/ha)	Cost of Production (₹/qtl)	Yield (qtl/ha)	Cost of Production (₹/qtl)
Paddy				
Andhra Pradesh	55.00	2114	64.38	1459
Andaman and Nicobar Islands	31.50	2000	Union Territory is not under CS	
Assam	Cost estimates are not provided		33.55	1798
Bihar	38.00	1387	30.52	1533
Chattisgarh	27.40	1861	36.38	1490
Gujarat	44.18	1458	42.26	1463
Haryana	Cost estimates are not provided		51.88	1867
Himachal Pradesh	Cost estimates are not provided		25.81	1736
Jharkhand	Cost estimates are not provided		28.49	1863
Karnataka	42.13	2733	51.42	1635
Kerala	30.73	2852	42.67	2044
Madhya Pradesh	Cost estimates are not provided		29.80	1837
Maharashtra	Cost estimates are not provided		27.81	2971
Odisha	Cost estimates are not provided		39.79	1897
Punjab	62.71	1995	70.69	1272
Tamil Nadu	48.00	1831	46.59	1778
Telangana	51.00	2738	51.23	1839
Uttar Pradesh	35.63	1655	36.72	1735
UttaraKhand	Cost estimates are not provided		46.25	1477
West Bengal	42.31	1837	44.56	1935
Jowar				
Andhra Pradesh	16.00	2206	25.22	1764
Gujarat	12.75	3015	CS data are not available	
Karnataka	12.00	4256	9.81	2888
Madhya Pradesh	Cost estimates are not provided		19.80	1805
Maharashtra	Cost estimates are not provided		11.40	2482
Rajasthan	Cost estimates are not provided		7.86	1946
Tamil Nadu	14.00	2576	11.23	2735
Telangana	9.00	3924	11.73	3904
Uttar Pradesh	15.40	1418	25.79	1265
Maize				
Andhra Pradesh	49.00	1790	48.24	1449
Bihar	32.00	1462	38.79	1291
Chattisgarh	23.50	1550	Not Projected	
Gujarat	19.28	2504	18.25	2406

(contd.)



Price Policy for **KHARIF CROPS**

Annex Table 5.7: Comparison of State and CACP Projected Cost of Production (C₂) of Kharif Crops for KMS 2021-22

Crop/ State/Union Territory	State Projections		CACP Projections on the basis of CS data	
	Yield (qtl/ha)	Cost of Production (₹/qtl)	Yield (qtl/ha)	Cost of Production (₹/qtl)
Himachal Pradesh	Cost estimates are not provided		18.52	2188
Jharkhand	Cost estimates are not provided		35.53	1392
Karnataka	19.94	1966	30.91	1494
Madhya Pradesh	Cost estimates are not provided		28.26	1497
Maharashtra	Cost estimates are not provided		48.92	1703
Punjab	Cost estimates are not provided		37.54	1643
Rajasthan	20.29	1978	20.92	2214
Tamil Nadu	47.00	1923	54.67	1870
Telangana	36.00	2296	53.13	1552
Uttar Pradesh	20.15	1390	25.57	1892
Ragi				
Andhra Pradesh	12.00	2621	CS data are not available	
Karnataka	21.00	4082	16.15	3069
Maharashtra	Cost estimates are not provided		18.65	3778
Odisha	Cost estimates are not provided		7.00	3805
Tamil Nadu	Cost estimates are not provided		30.42	2658
Telangana	12.00	2893	CS data are not available	
Uttarakhand	13.27	2582	16.09	2502
Tur (Arhar)				
Andhra Pradesh	6.00	6358	8.27	6060
Bihar	Cost estimates are not provided		11.59	3805
Chattisgarh	5.79	6000	Not Projected	
Gujarat	13.53	3804	10.01	5095
Karnataka	10.13	6399	9.36	4961
Madhya Pradesh	Cost estimates are not provided		8.95	4515
Maharashtra	Cost estimates are not provided		18.85	5462
Odisha	Cost estimates are not provided		4.55	6973
Tamil Nadu	Cost estimates are not provided		10.16	6631
Telangana	5.50	8466	6.89	5960
Uttar Pradesh	9.40	3593	9.21	5387
Moong				
Andhra Pradesh	6.00	6244	6.39	4698
Bihar	Cost estimates are not provided		5.91	5597
Gujarat	7.16	4853	5.43	6375
Karnataka	4.94	9456	6.02	6173

(contd.)

Price Policy for KHARIF CROPS



Annex Table 5.7: Comparison of State and CACP Projected Cost of Production (C₂) of Kharif Crops for KMS 2021-22

Crop/ State/Union Territory	State Projections		CACP Projections on the basis of CS data	
	Yield (qtl/ha)	Cost of Production (₹/qtl)	Yield (qtl/ha)	Cost of Production (₹/qtl)
Madhya Pradesh	Cost estimates are not provided		4.81	5246
Maharashtra	Cost estimates are not provided		6.31	7920
Odisha	Cost estimates are not provided		3.24	6923
Rajasthan	5.55	5534	4.50	6050
Tamil Nadu	Cost estimates are not provided		5.35	6627
Telangana	6.00	6926	6.14	7288
Uttar Pradesh	5.82	3914	4.76	5981
West Bengal	Cost estimates are not provided		6.18	5498
Urad				
Andhra Pradesh	7.00	5417	8.98	4059
Chhattisgarh	3.44	5304	6.57	5736
Gujarat	6.58	5164	5.98	5534
Karnataka	9.11	7145	CS data are not available	
Madhya Pradesh	Cost estimates are not provided		6.66	4419
Maharashtra	Cost estimates are not provided		6.35	7716
Odisha	Cost estimates are not provided		3.61	7114
Rajasthan	5.77	2796	6.07	4635
Tamil Nadu	8.00	6488	7.08	6893
Telangana	7.00	6303	8.56	5825
Uttar Pradesh	6.01	3804	4.26	6131
Uttarakhand	8.93	4809	CS data are not available	
Groundnut				
Andhra Pradesh	10.00	5718	8.44	5991
Chhattisgarh	12.00	5300	CS data are not available	
Gujarat	20.99	4016	18.24	4461
Karnataka	11.41	6998	8.93	6614
Madhya Pradesh	Cost estimates are not provided		14.60	4302
Maharashtra	Cost estimates are not provided		11.16	7476
Odisha	Cost estimates are not provided		9.34	6044
Rajasthan	Cost estimates are not provided		22.49	2663
Tamil Nadu	17.00	5375	16.40	6060
Telangana	12.00	5957	21.44	4810
Uttar Pradesh	10.80	3310	14.88	3425
Soybean				
Andhra Pradesh	19.00	3090	CS data are not available	
Chhattisgarh	7.69	3805	8.95	3846
Karnataka	18.99	4000	10.04	3237

(contd.)



Price Policy for Kharif Crops

Annex Table 5.7: Comparison of State and CACP Projected Cost of Production (C₂) of Kharif Crops for KMS 2021-22

Crop/ State/Union Territory	State Projections		CACP Projections on the basis of CS data	
	Yield (qtl/ha)	Cost of Production (₹/qtl)	Yield (qtl/ha)	Cost of Production (₹/qtl)
Madhya Pradesh	Cost estimates are not provided		12.13	3120
Maharashtra	Cost estimates are not provided		14.51	3844
Rajasthan	10.45	2749	10.43	3425
Telangana	12.00	4908	17.65	3872
Uttarakhand	12.74	2971	CS data are not available	
Sunflower				
Andhra Pradesh	7.50	5749	CS data are not available	
Karnataka	9.83	6226	7.74	5093
Odisha	Cost estimates are not provided		11.75	4680
Telangana	7.50	6917	Not Projected	
Sesamum				
Andhra Pradesh	4.50	6506	Not Projected	
Gujarat	5.15	6921	7.12	7698
Karnataka	Cost estimates are not provided		5.90	6576
Madhya Pradesh	Cost estimates are not provided		4.53	6351
Odisha	Cost estimates are not provided		4.07	6126
Rajasthan	4.15	8112	2.66	8932
Tamil Nadu	7.00	7822	5.26	9980
Telangana	2.00	13202	Not Projected	
Uttar Pradesh	4.33	4073	2.94	7874
West Bengal	Cost estimates are not provided		9.75	4934
Nigerseed				
Odisha	Cost estimates are not provided		3.69	6441
Cotton				
Andhra Pradesh	20.00	5413	16.65	5260
Gujarat	18.93	4726	18.72	4386
Haryana	Cost estimates are not provided		14.54	5255
Karnataka	22.43	5657	13.86	5006
Madhya Pradesh	Cost estimates are not provided		17.53	5539
Maharashtra	Cost estimates are not provided		16.26	5585
Odisha	Cost estimates are not provided		14.94	5747
Punjab	23.07	5039	21.84	5047
Rajasthan	5.96	4270	16.51	4479
Tamil Nadu	24.00	5285	19.84	6466
Telangana	13.00	10275	15.35	5915

Note: Main Product Ratios under CS were used for calculating CoPs from CoCs for some States
Source: State Governments and CACP calculations

Price Policy for KHARIF CROPS



Annex Table 5.8: Crop-wise States having small/thin Sample Sizes and Non-Projection of Cost of Production of Kharif Crops for KMS 2021-22

Crop	State	Reasons for inclusion/not-inclusion in Projection	Action Taken	Suggestion
Paddy	Uttarakhand	Although area and production shares at national level are only 0.57% and 0.55%, respectively, yet area and production shares in Kharif cereals at State level are reasonably adequate. Sample size under CS during TE2018-19 is 0.53% of all-India sample size, which is very small sample.	Projected	Sample size under Comprehensive Scheme should be increased.
Maize	Chattisgarh	Although area and production shares in Kharif cereals are low, yet area and production shares at national level are 1.34% and 1.05%, respectively. However, sample size under CS during TE2018-19 is only 0.43% of all-India sample size, which is thin sample.	Not Projected.	Sample size under Comprehensive Scheme should be increased.
	Jharkhand	Area and production shares at national level are 2.86% and 1.83%, respectively, and area and production shares in Kharif cereals at State level are adequate. Sample size under CS during TE2018-19 is 0.59% of all-India sample size, which is small sample.	Projected	Sample size under Comprehensive Scheme should be increased.
	Odisha	Area and production shares at national level are 0.59% and 0.50%, respectively, and area and production shares in Kharif cereals at State level are only 1.43% and 1.87%, respectively, which are negligible shares.	Not Projected.	Crop of the State may be dropped from Comprehensive Scheme.
Tur	Chattisgarh	Area and production shares at national level are 1.38% and 0.89%, respectively, and area and production shares in Kharif pulses at State level are reasonably adequate. However, sample size under CS during TE2018-19 is only 0.39% of all-India sample size, which is thin sample.	Not Projected.	Sample size under Comprehensive Scheme should be increased.
	Tamil Nadu	Area and production shares at national level are 1.04% and 1.39%, respectively, and area and production shares in Kharif pulses at State level are adequate. Sample size under CS during TE2018-19 is 0.78% of all-India sample size, which is small sample.	Projected	Sample size under Comprehensive Scheme should be increased.
Moong	Bihar	Area and production shares at national level are 3.84% and 5.25%, respectively, and area and production shares in Kharif pulses at State level are reasonably adequate. Sample size under CS during TE2018-19 is 0.68% of all-India sample size, which is small sample.	Projected	Sample size under Comprehensive Scheme should be increased.

(contd.)

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Annex Table 5.8: Crop-wise States having small/thin Sample Sizes and Non-Projection of Cost of Production of Kharif Crops for KMS 2021-22

Crop	State	Reasons for inclusion/not-inclusion in Projection	Action Taken	Suggestion
Urad	Telangana	Area and production shares at national level are 0.60% and 1.01%, respectively, and area and production shares in Kharif pulses at State level are adequate. Sample size under CS during TE2018-19 is 0.66% of all-India sample size, which is small sample.	Projected	Sample size under Comprehensive Scheme should be increased.
Groundnut	Madhya Pradesh	Although area and production shares in Kharif oilseeds at State level are low, yet area and production shares at national level are 4.60% and 4.26%, respectively, which are reasonably adequate. Sample size under CS during TE2018-19 is 0.71% of all-India sample size, which is small sample.	Projected	Sample size under Comprehensive Scheme should be increased.
Sunflower	Telangana	Although area and production shares in Kharif oilseeds at State level are low, yet area and production shares at national level are 1.27% and 2.94%, respectively, which are reasonably adequate. Cost data are based on only one Sample holding during TE2018-19, which is not representative sample.	Not Projected.	Sample size under Comprehensive Scheme should be increased.
Sesamum	Andhra Pradesh	Although area and production shares in Kharif oilseeds at State level are small, yet area and production shares at national level are 2.75% and 1.68%, respectively. However, CS data are available only for one year.	Not Projected.	CS Data may be collected continuously for smoothing CoP.
	Karnataka	Although area and production shares in Kharif oilseeds at State level are small, yet area and production shares at national level are 1.92% and 2.87%, respectively. Sample size under CS during TE2018-19 is 0.87% of all-India sample size, which is small sample.	Projected.	Sample size under Comprehensive Scheme should be increased.
	Telangana	Although area and production shares in Kharif oilseeds at State level are small, yet area and production shares at national level are 1.19% and 1.46%, respectively. But, CS data are available only for one year, and sample size during 2018-19 is only 0.32% of all-India sample size, which is a thin sample size.	Not Projected.	Sample size under Comprehensive Scheme should be increased.
Nigerseed	Madhya Pradesh	Although area and production shares in Kharif oilseeds at State level are low, yet area and production shares at national level are 16.62% and 18.06%, respectively. However, CS data are available only for one year.	Not Projected.	CS Data may be collected continuously for smoothing CoP.

Source: (1) Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare
(2) CACP Calculations

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Annex Table 5.9: Crop-wise Inclusion of States under Comprehensive Scheme

Crop	State	Reasons for inclusion/not-inclusion in Projection	Suggestion
Paddy	Jammu & Kashmir	Area and production shares at national level are 0.61% and 0.49%, respectively, and area and production shares in Kharif cereals at State level are reasonably adequate. But, there is no implementation of Comprehensive Scheme within the State.	Comprehensive Scheme should be implemented within the State.
	Tripura	Area and production shares at national level are 0.62% and 0.69%, respectively, and area and production shares in Kharif cereals at State level are reasonably adequate. But, there is no implementation of Comprehensive Scheme within the State.	Comprehensive Scheme should be implemented within the State.
Jowar	Gujarat	Although area and production shares in Kharif cereals at State level are low, yet area and production shares at national level are 1.57% and 2.22%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Uttar Pradesh	Although area and production shares in Kharif cereals at State level are low, yet area and production shares at national level are 3.51% and 4.80%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Karnataka	Although area and production shares in Kharif cereals at State level are low, yet area and production shares at national level are 2.97% and 2.65%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
Bajra	Madhya Pradesh	Although area and production shares in Kharif cereals at State level are small, yet area and production shares at national level are 4.16% and 7.13%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Tamil Nadu	Although area and production shares in State Kharif cereals are on lower side, yet State area and production shares of Bajra in all-India are 0.80% and 1.62%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Karnataka	Although area and production shares in Kharif cereals at State level are low, yet area and production shares at national level are 2.97% and 2.65%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
Bajra	Madhya Pradesh	Although area and production shares in Kharif cereals at State level are small, yet area and production shares at national level are 4.16% and 7.13%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Tamil Nadu	Although area and production shares in State Kharif cereals are on lower side, yet State area and production shares of Bajra in all-India are 0.80% and 1.62%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.

(contd.)

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Annex Table 5.9: Crop-wise Inclusion of States under Comprehensive Scheme

Crop	State	Reasons for inclusion/not-inclusion in Projection	Suggestion
Maize	Jammu & Kashmir	Area and production shares at national level are 2.98% and 1.96%, respectively, and area and production shares in Kharif cereals at State level are reasonably adequate. But, there is no implementation of Comprehensive Scheme within the State.	Comprehensive Scheme should be implemented within the State.
	West Bengal	Although area and production shares in State Kharif cereals at State level are small, yet area and production shares at national level are 2.82% and 5.27%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
Ragi	Andhra Pradesh	Although area and production shares in Kharif cereals at State level are low, yet area and production shares at national level are 3.32% and 2.68%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
Tur	Jharkhand	Area and production shares at national level are 5.15% and 6.28%, respectively, and area and production shares in Kharif pulses at State level are reasonably adequate. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
Moong	Jharkhand	Area and production share in State Kharif pulse at State level are 7.21% and 5.86% respectively, yet area and production shares at national level are 0.61% and 0.94%, respectively. But, there is no CS data.	Cost data should be collected under Comprehensive Scheme for the State.
	Punjab	Although area and production shares at national level are 0.48% and 0.81%, respectively, yet area and production shares in Kharif pulses at State level are reasonably adequate. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
Urad	Assam	Area and production shares at national level are 1.22% and 1.44%, respectively, and area and production shares in Kharif pulses at State level are reasonably adequate. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Jharkhand	Area and production shares at national level are 2.63% and 4.07%, respectively, and area and production shares in Kharif pulses at State level are reasonably adequate. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Karnataka	Although area and production shares in Kharif pulses at State level are small, yet area and production shares at national level are 1.89% and 1.67%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	West Bengal	Area and production shares at national level are 1.49% and 1.95%, respectively, and area and production shares in Kharif pulses at State level are reasonably adequate. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
Groundnut	West Bengal	Area and production shares at national level are 1.44% and 1.96%, respectively, and area and production shares in Kharif oilseeds at State level are adequate. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.

(contd.)

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Annex Table 5.9: Crop-wise Inclusion of States under Comprehensive Scheme

Crop	State	Reasons for inclusion/not-inclusion in Projection	Suggestion
Soybean	Gujarat	Although State area and production shares in State Kharif oilseeds are small, yet State area and production shares in all-India are 1.14% and 1.19% respectively. But there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Andhra Pradesh	Although State area and production shares in State Kharif oilseeds are low, yet State area and production shares in all-India are 3.93% and 4.41% respectively. But there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
Sunflower	Bihar	Area and production shares at national level are 3.23% and 5.56%, respectively, and area and production shares in Kharif oilseeds at State level are reasonably adequate. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Haryana	Area and production shares at national level are 2.56% and 5.72%, respectively, and area and production shares in Kharif oilseeds at State level are reasonably adequate. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Maharashtra	Although area and production shares in Kharif oilseeds at State level are low, yet area and production shares at national level are 12.51% and 5.41%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Punjab	Area and production shares at national level are 1.86% and 4.27%, respectively, and area and production shares in Kharif oilseeds at State level are reasonably adequate. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Tamil Nadu	Although area and production shares in Kharif oilseeds at State level are low, yet area and production shares at national level are 2.08% and 2.24%, respectively. But there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	West Bengal	Although area and production shares in Kharif oilseeds at State level are low, yet, area and production shares at national level are 3.02% and 4.30%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
Sesamum	Assam	Area and production shares at national level are 0.78% and 1.14%, respectively, yet area and production shares in Kharif oilseeds at State level are reasonably adequate. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Chattisgarh	Although area and production shares in Kharif oilseeds at State level are on lower side, yet area and production shares at national level are 1.32% and 1.02%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.

(contd.)

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Annex Table 5.9: Crop-wise Inclusion of States under Comprehensive Scheme

Crop	State	Reasons for inclusion/not-inclusion in Projection	Suggestion
Nigerseed	Andhra Pradesh	Although area and production shares in Kharif oilseeds at State level are low, yet area and production shares at national level are 3.13% and 3.76%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Assam	Area and production shares at national level are 3.45% and 6.25%, respectively, and area and production shares in Kharif oilseeds at State level are adequate. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Chattisgarh	Area and production shares in Kharif oilseeds at State level are adequate, and area and production shares at national level are 31.75% and 19.63%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Gujarat	Although area and production shares in Kharif oilseeds at State level are low, yet area and production shares at national level are 1.37% and 2.14%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Jharkhand	Although area and production shares in Kharif oilseeds at State level are small, yet area and production shares at national level are 2.50% and 4.39%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	Maharashtra	Although area and production shares in Kharif oilseeds at State level are low, yet area and production shares at national level are 6.31% and 3.15%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.
	West Bengal	Although area and production shares in Kharif oilseeds at State level are low, yet area and production shares at national level are 1.31% and 2.71%, respectively. But, there is no CS data for the State.	Cost data should be collected under Comprehensive Scheme for the State.

Note: Union Territory of Jammu and Kashmir also Includes Union Territory of Ladakh

Source: (1) Directorate of Economics and Statistics, Department of Agriculture Cooperation & Farmers Welfare

(2) CACP Calculations

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