

Price Policy for **Rabi 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, New Delhi

July 2020

Members of the Commission, July 2020

Prof. Vijay Paul Sharma

Chairman

Phone: 011-23385216

Email: chairman-cacp@nic.in

Shri Anupam Mitra

Member Secretary

Phone: 011-23384006

Email: ms-cacp@nic.in

Price Policy for

Rabi Crops

THE MARKETING SEASON 2021-22



Commission for Agricultural Costs and Prices
Department of Agriculture, Cooperation & Farmers Welfare
Ministry of Agriculture & Farmers Welfare
Government of India
July, 2020

Vijay Paul Sharma

Chairman

Tel : 011-23385216

Fax : 011-23383848



Commission for Agriculture Costs and Prices

Department of Agriculture, Cooperation
and Farmers Welfare

Ministry of Agriculture and Farmers Welfare

Krishi Bhawan, New Delhi-110 001

Preface and Acknowledgements

I have the honour and privilege to submit **“Price Policy for Rabi Crops: The Marketing Season 2021-22”** report. The report contains the recommendations on Minimum Support Prices (MSP) for the mandated six rabi crops, namely, **wheat, barley, gram, lentil, rapeseed-mustard and safflower**, and a set of non-price recommendations. I firmly believe that these recommendations will incentivise farmers for adoption of improved technologies and practices and desirable shifts in cropping pattern to improve farm income and competitiveness of Indian agriculture.

Summary of Recommendations is followed by an overview of Indian agriculture in Chapter 1. Chapter 2 of the report discusses demand-supply outlook and price trends in domestic and global markets, terms of trade and procurement operations. Trends in productivity and important drivers of productivity growth 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 Rabi Marketing Season 2021-22 including inter-crop price parity issue are analysed in Chapter 5. Finally, in chapter 6, major considerations are discussed leading to recommendations of the Minimum Support Prices and key non-price policy suggestions.

Many people have assisted in the preparation of this report. I would like 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, 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 is due to officers and staff of the Commission, who contributed to this report. My sincere gratitude goes to Sh. Anupam Mitra, Member Secretary for his contribution and support in preparation and timely completion of the report. The report would not have been possible without active support and contributions of Sh. K. M. M. Alimalmigothi (Adviser), Sh. D. K. Pandey (Adviser), Mr. Nikhil Kumar Agarwal, Mr. Amit Sahu, Mr. Ayush Punia, Ms. Sutapa Ghosh, Ms. Leena Kumar, Mrs. Shivani, Mr. Raj Kumar, Dr. S. K. Gupta, Mr. Sube Singh, Mrs. Shilpa Taneja, Mr. Md. Abdul Aleem, Dr. Bhavik Lukka, Mr. S. K. Srivastava, Mr. Mohd Shoeb, Dr. Surendra Singh, Mr. Md. Shoeb Malik and Mr. Chandra Kumar. I would like to thank them all for their excellent contribution and support. I express my thanks to dedicated staff members of the Commission for administrative support.

(Vijay Paul Sharma)

31st July 2020



CONTENTS

Chapter No.	Description	
	Acronyms	xviii
	Summary of Recommendations	xxii
	Price Policy Recommendations	xxii
	Non-price Policy Recommendations	xxiii
1	Overview	1
	Record Procurement and Challenge of Foodgrains Management	1
	Agricultural Trade Performance	3
	Increased Liquidity in Agriculture Sector	4
	Food Inflation	5
	Pulses	5
	Historic Reforms in Agricultural Marketing System	6
	Investment in Agriculture	7
	Fertiliser Pricing and Subsidy: Direct Benefit Transfer (DBT)	8
	Farm Labour Shortage and Rising Wages	9
	Risk Management	9
	Connecting Farmers to Market: National Agriculture Market (e-NAM)	10
	Aggregation and Collective Marketing of Farm Produce	11
	Storage and Warehousing Infrastructure	11
	Challenge of Growing Dependence on Edible Oil Imports	12
	Improved Locust Management Strategies	12
	Outlook for Indian Agriculture	13
	World Outlook	13
	Structure of the Report	14

Contents



Chapter No.	Description	
2	Supply-Demand Scenario, Price Trends and Procurement Operations	15
	World Situation and Outlook	15
	Wheat	15
	Pulses	16
	Oilseeds and Products	18
	Domestic Market Scenario	19
	Wheat	19
	Pulses	19
	Trends in Market Prices	20
	Wheat	20
	Barley	23
	Gram	24
	Lentil	26
	Rapeseed & Mustard	28
	Safflower	31
	Trends in Prices and Inflation based on WPI	32
	Trends in Terms of Trade	34
	Procurement Policy and Operations	35
	Wheat	36
	Procurement vis-à-vis Production/Marketed Surplus	39
	Pulses	40
	Oilseeds	43
	Remunerative Prices to Farmers: PM-AASHA	44
	Food Subsidy and Economic Cost of Grains	44
	Distortions in Agricultural Markets	46
	High Fees/Taxes and Charges	46
	Awareness about MSP and FAQ Standards	47
	Recapitulation	48

Chapter No.	Description	
3	Crop Productivity Trends and Drivers	49
	Productivity Growth Trends	49
	Cereals	49
	Pulses	50
	Oilseeds	50
	Country Comparisons of Crop Productivity	52
	Crop Productivity and Yield Gap Analysis in Major Producing States	53
	Wheat	53
	Barley	54
	Gram	55
	Lentil	56
	Rapeseed & Mustard	60
	Safflower	61
	District Level Productivity Trends	63
	Wheat	63
	Gram	64
	Rapeseed & Mustard	65
	Drivers of Productivity Growth	66
	Requirement and Availability of Certified/Quality Seed	66
	Fertilizer Use	68
	Irrigation	69
	Agricultural Credit	70
	Mechanization	72
	Extension Services	72
	Diseases and Pests	73
	Linking MSP with Oil Content in Rapeseed & Mustard	73
	Recapitulation	74



Chapter No.	Description	
4	Trade Performance, Competitiveness and Outlook for Indian Agriculture	75
	Trade Performance and Price Trends	79
	Cereals	79
	Wheat	79
	Barley	82
	Pulses	84
	Gram (Chickpea)	86
	Lentil (Masur)	87
	Edible Oils and Oilseeds Complex	90
	Rapeseed & Mustard (R&M) Seed	93
	Rapeseed/Mustard Oil	94
	Trade Policy	97
	India's Trade Outlook	99
	Wheat	99
	Pulses	100
	Edible Oils and Oil Seeds Complex	101
5	Costs, Returns and Inter-Crop Parity	103
	Costs and Returns of Rabi Crops during TE2018-19	104
	Movement in Agricultural Wages and Farm Input Prices	107
	Cost Projections for Rabi Marketing Season, 2021-22	109
	Inter-Crop Parity in Returns of Rabi Crops	115
	Comparison of CACP Cost Estimates with State Estimates	116
	Issue Related to Sample Size under Comprehensive Scheme	117
	Recapitulation	118

Chapter No.	Description	
6	Considerations and Recommendations for Price Policy	119
	Global Outlook	119
	Domestic Demand-Supply Scenario	120
	Non-Price Policy Recommendations	121
	Managing Grain Stocks: Review Open-Ended Procurement Policy	121
	Promoting Oilseeds Production	121
	Remunerative Prices for Oilseeds and Pulses	122
	Investment in Agricultural Research, Development and Extension	122
	Enhance Crop Productivity	123
	Historic Reforms in Agricultural Marketing System	123
	Reforms in Fertilizer Pricing and Subsidy	124
	Promote Farm Mechanization	124
	Strengthen Risk Management Measures	124
	Promotion of Farmer Producer Organizations (FPOs)	125
	Pest and Disease Management	125
	Rationalizing Mandi Fees and Other Charges	125
	Rational Agricultural Trade Policy	125
	Price Policy Recommendations	126



LIST OF CHARTS

List of Charts

Chart No.	Title	
1.1	Trends in Wheat Procurement and Beneficiary Farmers in India	2
1.2	India's Exports and Imports of Agricultural Commodities (2007-08 to 2019-20)	4
1.3	Trends and Drivers of Inflation Rate of Pulses and Products	6
1.4	Trends in Public and Private Sector Gross Capital Formation in Indian Agriculture: 2001-02 to 2018-19	8
2.1	Trends in Domestic Market Prices vis-à-vis MSP of Wheat	21
2.2	Comparison of Market Prices and MSP of Wheat in Madhya Pradesh, Uttar Pradesh and Rajasthan during RMS 2020-21	22
2.3	Trends in Domestic Market Prices vis-à-vis MSP of Barley	23
2.4	Comparison of Market Prices and MSP of Barley in Rajasthan and Uttar Pradesh during RMS 2020-21	24
2.5	Trends in Domestic Prices vis-à-vis MSP of Gram	25
2.6	Comparison of Market Prices and MSP of Gram in Karnataka, Madhya Pradesh Uttar Pradesh and Rajasthan during RMS 2020-21	26
2.7	Trends in Domestic Market Prices vis-à-vis MSP of Lentil	27
2.8	Comparison of Market Prices and MSP of Lentil in Madhya Pradesh and Uttar Pradesh during RMS 2020-21	28
2.9	Trends in Domestic Market Prices vis-à-vis MSP of R&M	29
2.10	Comparison of Market Prices and MSP of R&M in Haryana, Rajasthan and Uttar Pradesh during RMS 2020-21	30
2.11	Trends in Domestic Market Prices vis-à-vis MSP of Safflower	31
2.12	Comparison of Market Prices and MSP of Safflower in Karnataka during RMS 2020-21	32

Chart No.	Title	
2.13	Trends in WPI based Inflation for Important Agricultural Commodities/Groups	34
2.14	Farmers' Terms of Trade (FToT) and Agriculture Terms of Trade (AGRTToT)	35
2.15	Wheat Arrivals and Procurement in RMS 2019-20 and RMS 2020-21	37
2.16	State-wise Number of Farmers Benefitted from Procurement Operations in Wheat in the Last Five Rabi Marketing Seasons	38
2.17	Share of DCP and Non-DCP States in Total Procurement of Wheat	38
2.18	Share of Major States in Marketed Surplus (TE2019-20) and Procurement of Wheat (TE2020-21)	39
2.19	Trends in Food Subsidy Released and Annual Growth in Subsidy	45
2.20	Economic Cost of Wheat and Share of Different Components of Economic Cost	46
3.1	Average Productivity of Wheat in Major Producing States	54
3.2	Comparison of Potential Yield, Realised Yield and Average Yield in Major Wheat Growing States, TE2018-19	54
3.3	Average Productivity of Barley in Major Producing States	55
3.4	Comparison of Potential Yield, Realised Yield and Average Yield in Major Barley Growing States, TE2018-19	56
3.5	Average Productivity of Gram in Major Producing States	57
3.6	Comparison of Potential Yield, Realised Yield and Average Yield in Major Gram Growing States, TE2018-19	58
3.7	Average Productivity of Lentil in Major Producing States	58
3.8	Comparison of Potential Yield, Realised Yield and Average Yield in Major Lentil Growing States, TE2018-19	59
3.9	Average Productivity Trends in Major R&M Growing States	60
3.10	Comparison of Potential Yield, Realised Yield and Average Yield in Major R&M Growing States, TE2018-19	61
3.11	Average Productivity Trends in Major Safflower Growing States	61
3.12	Comparison of Potential Yield, Realised Yield and Average Yield in Major Safflower Growing States, TE2018-19	62
3.13	Trend in Fertilizer Consumption during Rabi Season	67



List of Charts

Chart No.	Title	
3.14	State-wise area covered under PMKSY-Per Drop More Crop (2015-16 to 2019-20)	68
3.15	Trends in Total Crop Loan and Non-Crop Loan disbursement to Agricultural Sector	71
3.16	Relative share of Commercial Banks, Regional Rural Banks (RRB) and Cooperatives in the institutional agricultural credit	71
3.17	MSP based on Oil Content of R&M	74
4.1	Value Share of India's Agricultural Exports and Imports, by Commodity/Group, 2019-20	76
4.2	Value of Top 10 Indian Agricultural Export Markets, 2018-19 and 2019-20	78
4.3	India's Exports of Wheat, 2010-11 to 2019-20	80
4.4	India's Imports of Wheat, 2010-11 to 2019-20	81
4.5	MSP, Domestic and International Prices of Wheat, 2015 (Q1) to 2020 (Q2)	82
4.6	India's Exports of Barley, 2010-11 to 2019-20	83
4.7	MSP, Domestic and International Prices of Barley, 2015 (Q1) to 2020 (Q2)	83
4.8	India's Imports of Pulses, 2009-10 to 2019-20	85
4.9	Trends in Exports of Pulses from India, 2009-10 to 2019-20	86
4.10	India's Exports of Gram (Chickpea), 2010-11 to 2019-20	87
4.11	India's Imports of Gram (Chickpea) & Yellow Peas, 2010-11 to 2019-20	87
4.12	India's Imports of Lentil, 2010-11 to 2019-20	88
4.13	MSP, Domestic and International Prices of Gram, 2015 (Q1) to 2020 (Q2)	89
4.14	MSP, Domestic and International Prices of Lentil, 2015 (Q1) to 2020 (Q2)	90
4.15	India's Imports of Edible Oils, 2009-10 to 2019-20	91
4.16	Share of Major Edible Oils in Total Imports: TE2011-12 and TE 2019-20	92
4.17	Rising Shares of Soft Oils in Total Edible Oil Imports: 2010-11to 2019-20	93

Chart No.	Title	
4.18	MSP, Domestic and International Prices R&M Seeds, 2015 (Q1) to 2020 (Q2)	94
4.19	India's Imports of R&M Oil, 2010-11 to 2019-20	95
4.20	Domestic and International Prices of R&M Oil, 2015 (Q1) to 2020 (Q2)	95
4.21	Import Tariffs vis-a-vis Imports of Crude Palm Oil and Fractions, 2004 to 2020	96
4.22	Import Tariffs vis-a-vis Imports of Refined Palm Oils and Fractions, 2004 to 2020	96
4.23	Import Tariffs vis-a-vis Imports of w/n De-Gummed SoyOil, 2004 to 2020	97
5.1	Average Gross Returns of Rabi Crops, TE2018-19	106
5.2	Average Daily Wage Rates and Growth in Wages in Selected States during Rabi Season 2019-20	108
5.3	Movement in Prices of Farm Inputs during Rabi Season in 2019-20 over 2018-19	109
5.4	Supply Curve and Projected CoP for Mandated Rabi Crops, RMS 2021-22	112
5.5	Crop-wise Relative Average Gross Returns (%) with Respect to Wheat, TE2018-19	116



LIST OF TABLES

List of Tables

Tables No.	Title	Page No.
S.1	Minimum Support Price (MSP) Recommendations for Rabi Marketing Season (RMS), 2021-22	xxii
2.1	Global Supply and Demand Outlook for Wheat	16
2.2	Pulses Demand-Supply Situation in Canada	17
2.3	World Oilcrops and Products Market Outlook	18
2.4	Domestic Supply Situation of Wheat in India	19
2.5	Domestic Supply Situation of Pulses in India	20
2.6	Market Prices vis-a-vis MSP of Wheat in Major Producing States in RMS 2020-21 (March - June 2020)	22
2.7	Market Prices vis-a-vis MSP of Barley in Major Producing States in RMS 2020-21 (March-June 2020)	24
2.8	Market Prices vis-a-vis MSP of Gram in Major Producing States in RMS 2020-21 (March- June, 2020)	26
2.9	Market Prices vis-a-vis MSP of Lentil in Major Producing States in RMS 2020-21 (March 2020- June 2020)	28
2.10	Market Prices vis-a-vis MSP of R&M in Major Producing States in RMS 2020-21 (March- June, 2020)	30
2.11	State-wise Procurement of Wheat in Major Wheat Producing States	40
2.12	State-wise Procurement of Gram and Lentil in the last three Rabi Marketing Seasons	41
2.13	Procurement of Pulses under Price Support Scheme (PSS)	42
2.14	State-wise Procurement of Mustard in the last three Rabi Marketing Seasons	43

Tables No.	Title	Page No.
2.15	State-wise Fees/Taxes/Charges levied on Wheat Procurement (2020-21)	47
3.1	Quinquennial Trends in Growth Rate of Major Rabi Crops	51
3.2	Productivity Comparisons for Major Crops (2018)	52
3.3	Estimated Additional Production of Rabi Cereals by Bridging Yield Gap	56
3.4	Estimated Additional Production of Rabi Pulses by Bridging Productivity Gap	59
3.5	Estimated Additional Production of Rabi Oilseeds by Bridging Productivity Gap	62
3.6	Mobility of Districts in Productivity Ladder: Case of Wheat	64
3.7	Mobility of Districts in Productivity Ladder: Case of Gram	65
3.8	Mobility of Districts in Productivity Ladder: Case of R&M	66
3.9	Requirement and Availability of Certified/Quality Seed (2015-16 to 2019-20)	67
3.10	SRR for Rabi Crops in Major States (2018)	67
4.1	Leading Country Sources of India's Pulses Imports, 2019-20	84
4.2	India's Trade Policy - Rabi Crops	99
5.1	Average Gross Returns of Rabi Crops, TE2018-19	106
5.2	Average Growth Rate of Daily Wage Rates of Agricultural Labour by Major States and at All-India Level during Rabi Season	107
5.3	Trends in All-India Farm Input Price Indices (Base 2011-12=100)	110
5.4	Projected Cost of Production (CoP) of Mandated Rabi Crops, RMS 2021-22	111
6.1	Minimum Support Price (MSP) Recommendations for Rabi Marketing Season (RMS), 2021-22	126



ANNEX TABLES

List of Annex Tables

Table No.	Title	Page No.
1.1	All India Estimates of Area under Principal Crops	128
1.2	All India Estimates of Production of Principal Crops	129
1.3	All India Estimates of Yield of Principal Crops	130
1.4	Share of Major Producing States in Total Production of Rabi Crops (under MSP) TE2019-20	131
1.5	Likely Situation of Wheat Stocks in Central Pool	132
1.6	Inflation Rate (y-o-y) of selected Food Articles based on Wholesale Price Index (WPI) (Base 2012=100) (in %)	133
1.7	Inflation Rate (y-o-y) of selected Food Articles based on Consumer Price Index (CPI) (Base 2012=100) (in %)	136
2.1	Annual Average Wholesale Price Index (Base 2011-12=100) of Major Agricultural Commodities	139
2.2	List of Decentralized Procurement System (DCP) States for Rice and Wheat	140
2.3	Number of farmers Benefitted during Last Three Rabi Marketing Seasons	141
2.4	Number of Mustard Farmers Benefitted during Last Three Rabi Marketing Seasons	142
2.5	Various Components of Procurement Incidentals and Distribution Cost	143
3.1	State-wise Sanctioned Strength, Working Strength and Vacancies in Extension Staff	144

Table No.	Title	Page No.
3.2	Simulation-Impact of Oil Content on MSP of R&M	145
4.1	Value of top 10 Indian Export Markets for Agricultural Products in 2019-20	147
4.2	Trade Policy for Pulses and Edible Oils/Oilseeds, April 2019 to June 2020	148
5.1	Average Gross Returns over Actual Cost of Cultivation of Rabi Crops in Selected States TE2018-19	151
5.2	Monthly Average Daily Wage Rates for Agricultural Labour (Man)	153
5.3	Monthly Wholesale Price Index (Base 2011-12=100) of Major Farm Inputs	158
5.4	Projected Cost of Production (A2, A2+FL & C2) for Rabi Crop Season 2020-21 and Production Shares during TE2019-20	163
5.5	Break-up of Cost of Cultivation	165
5.6	All-India Projected Costs of Production of Rabi Crops for Crop Season 2020-21 and 2019-20	176
5.7	Comparision of State and CACP Projected Cost of Production (C2) of Rabi Crops for RMS 2021-22	177
5.8	States not-included in Cost Projections of Rabi Crops for RMS 2021-22	179
5.9	States to be included under Comprehensive Scheme for Selected Crops	180



ACRONYMS

Acronyms

A ₂	Actual paid out cost
A ₂ +FL	Actual paid out cost plus imputed value of family labour
AAY	Antyodaya Anna Yojana
ABARES	Australian Bureau of Agricultural and Resource Economics and Sciences
APMC	Agricultural Produce Market Committee
ASEAN	Association of Southeast Asian Nations
BE	Budget Estimates
C ₂	Comprehensive cost including rental value of own land (net of land revenue and interest on value of own fixed capital assets (excluding land))
CACP	Commission for Agricultural Costs and Prices
CAP	Cover and Plinth
CCE	Crop Cutting Experiments
CFPI	Consumer Food Price Index
CHC	Custom Hiring Centres
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
CS	Comprehensive Scheme
CWC	Central Warehousing Corporation
DAY-NRLM	Deendayal Antyodaya Yojana - National Rural Livelihood Mission
DBT	Direct Benefits Transfer

DCP	Decentralized Procurement
DES	Directorate of Economics and Statistics
DFPD	Department of Food & Public Distribution
DGCIS	Directorate General of Commerce Intelligence & Statistics
DIPP	Department of Industrial Policy & Promotion
DoLR	Department of Land Resources
DSR	Direct Seeding of Rice
ECA	Essential Commodities Act
EDI	Electronic Data Interchange
e-NAM	electronic-National Agriculture Market
e-NWR	Electronic Negotiable Warehousing Receipts
EOU	Export Oriented Units
FAI	Fertilizers Association of India
FAO	Food and Agriculture Organization
FAQ	Fair Average Quality
FCI	Food Corporation of India
FFPI	FAO Food Price Index
FLD	Front Line Demonstration
FPO	Farmer Producer Organizations
FTA	Free trade agreement
GCF	Gross Capital Formation
GDP	Gross Domestic Product
GST	Goods and Service Tax
GVA	Gross Value Added
GVO	Gross Value of Output
HSD	High Speed Diesel
IGC	International Grain Council
IMCECA	India-Malaysia Comprehensive Economic Cooperation Agreement
IMD	Indian Metrological Department
KMS	Kharif Marketing Season
LCO	Locust Circle Offices
LCS	Land Custom Stations
LPA	Long Period Average



Acronyms

LWO	Locust Warning Organization
MEIS	Merchandise Exports from India Scheme
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
NAFIS	NABARD All India Rural Financial Inclusion Survey
NBS	Nutrient Based Subsidy
NCDC	National Cooperative Development Corporation
NE	North East
NFSA	National Food Security Act
NMEO	National Mission on Edible Oils
OGI	Open General License
OMSS (D)	Open Market Sale Scheme (Domestic)
OWS	Other Welfare Schemes
PDMC	Per Drop More Crop
PDPS	Price Deficiency Payment Scheme
PEG	Private Entrepreneurs Guarantee
PHH	Priority Household
PIB	Press Information Bureau
PM-AASHA	Pradhan Mantri Annadata Aay Sanrakshan Abhiyan
PMFBY	Pradhan Mantri Fasal Bima Yojana
PM-GKAY	Pradhan Mantri Garib Kalyan Anna Yojana
PM-KISAN	Pradhan Mantri Kisan Samman Nidhi
PMKSY	Pradhan Mantri Krishi Sinchayee Yojana
PPP	Public-Private-Partnership
PPPS	Pilot of Private Procurement & Stockist Scheme
PSS	Price Support Scheme
QE	Quinquennial Ending
QR	Quantitative Restrictions
R&D	Research and Development
R&M	Rapeseed & Mustard

RBD	Refined, Bleached and Deodorized
RE	Revised Estimates
RMS	Rabi Marketing Season
RRB	Regional Rural Bank
SEZs	Special Economic Zones
SFAC	Small Farmers' Agri-business Consortium
SMAM	Sub-Mission on Agricultural Mechanization
SRR	Seed Replacement Rate
SRW	Soft Red Winter (Wheat variety)
SST	Smart Sampling Technique
STC	Statistics Canada
SWAC	Commission for Controlling the Desert Locust in South-West Asia
SWC	State Warehousing Corporation
TE	Triennium Ending
TPDS	Targeted Public Distribution System
URS	Under Relaxed Specifications
USDA	United States Department of Agriculture
VRR	Varietal Replacement Rate
WDRA	Warehousing Development and Regulatory Authority
WPI	Wholesale Price Index
WTO	World Trade Organization

Summary of Recommendations

Price Policy Recommendations:

S.1 The Commission, as per its mandate, has considered cost of production, supply and demand situation of various crops in domestic and global markets, domestic and world prices along with trade opportunities, terms of trade between agriculture and non-agriculture sector, optimal utilization of land, water and other production resources, likely effect of price policy on rest of the economy, and a minimum of 50 percent as the margin over the cost of production. Based on these factors, the Commission makes the following price and non-price policy recommendations. The recommended Minimum Support Prices (MSPs) of six rabi crops are given in Table S.1.

Table S.1: Minimum Support Price (MSP) Recommendations for Rabi Marketing Season (RMS), 2021-22

(₹/qtl)

Crops	Projected Cost A ₂ +FL for RMS 2021-22	MSP for RMS 2020-21	MSP Recommendation for RMS 2021-22	MSP as Percent of A ₂ +FL
Wheat	960	1925	1975 (2.6)	206
Barley	971	1525	1600 (4.9)	165
Gram	2866	4875	5100 (4.6)	178
Lentil (Masur)	2864	4800	5100 (6.3)	178
Rapeseed/Mustard	2415	4425	4650 (5.1)	193
Safflower	3551	5215	5327 (2.1)	150

Note: Figures in parentheses are percentage increase over the previous year

Non-Price Policy Recommendations

- S.2 The Central Government has recently taken historic decision and introduced far-reaching policy reforms in agricultural marketing system to improve farmers' income and welfare. The government has liberalized the regulatory systems to address long standing demands of corporate agri-business sector and farmers through promulgation of three ordinances, "The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020", "The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance, 2020" and "The Essential Commodities (Amendment) Ordinance, 2020". These ordinances will create new market opportunities for farmers, provide better access to farm inputs and services, and attract more private sector investment in value-addition, scientific storage, warehousing, and marketing infrastructure. The Commission makes the following non-price recommendations.

Liquidation of Excess Grains Stocks

- S.3 The wheat stocks in Central Pool reached a new record level of 55.8 million tonnes on May 31, 2020, which marginally declined to about 55 million tonnes on June 30, 2020, nearly two times higher than stocking norms for the quarter starting on 1st July and about 20 percent higher than the last year.
- S.4 The Government has announced policy for sale of 15 million tonnes of wheat and 5 million tonnes of rice in the open market through Open Market Sale Scheme (Domestic) [OMSS (D)] during 2020-21. However, actual liquidation during 2019-20 was much lower (5.3 million tonnes) than the target of 15 million tonnes. In first three months of 2020-21, only 35 thousand tonnes of wheat and about 4 lakh tonnes of rice have been sold under the Scheme. Additional allocation of foodgrains free of cost to all the beneficiaries of Targeted Public Distribution System (TPDS) under Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) and to migrants under Atma Nirbhar Bharat Package will help in liquidation of excess stocks. Despite these steps, wheat stocks are estimated to be much larger than the stocking norms of 13.8 million tonnes on 1st January 2021.
- S.5 The Commission reiterates its earlier recommendation that excess stocks need to be urgently liquidated, as it will help ease storage capacity constraint and save large carrying cost of excessive stocks. However, reserve price, which has not been revised for 2020-21, should not be reduced, as it would discourage procurement by private sector in future.

Review Open-Ended Procurement Policy for Rice and Wheat and Strengthen Procurement of Other Crops

- S.6 Due to increased procurement of wheat and rice in recent years, Government has emerged as the single largest buyer of foodgrains. In major wheat producing States like Madhya Pradesh, Punjab and Haryana, the Government procures more than

three-fourth of marketed surplus due to open-ended procurement policy. This policy is driving out private sector from the market and has adversely affected crop diversification.

- S.7 In contrast, wheat procurement in Uttar Pradesh, Rajasthan, and Bihar is much lower than their share in total marketed surplus and production. The Commission, therefore, recommends that efforts should be made to strengthen procurement operations in these States to ensure remunerative prices to farmers.
- S.8 As recommended in the Kharif Price Policy Report 2020-21, the Commission reiterates that the Central Government should review open-ended procurement policy for rice and wheat. However, the Commission strongly recommends that major policy changes should be introduced in pricing, procurement and use of other crops like oilseeds, pulses, maize and nutri-cereals to encourage farmers to shift to these crops, which have great potential for crop diversification. For example, oilseeds and maize have great potential to replace rice-wheat cropping system in Punjab and Haryana but farmers do not get assured remunerative prices for these crops. Since there is no assured procurement of these crops and generally, market prices remain well below the MSP, farmers have no incentive to switch to these crops. The Commission recommends that farmers need to be ensured to receive remunerative price for other crops through effective implementation of 'Price Deficiency Payment Scheme' and 'Private Procurement and Stockist Scheme'.

Reserve Price for Open Market Sale of Pulses and Oilseeds

- S.9 Stocks of pulses and oilseeds procured under Price Support Scheme (PSS) have continued to pose problem of disposal for NAFED as stocks are sold at discounted price, well below the MSP. As a result, it depresses market prices and discourages private sector to procure directly from farmers. The Commission strongly feels that government should not sell these stocks in open market below the MSP, particularly during the procurement season and fix a reserve price linked to MSP for disposal of stocks as is being done for wheat and rice under OMSS (D).

Review Fertilizer Pricing and Subsidy: Direct Benefit Transfer (DBT)

- S.10 After introduction of Nutrient Based Subsidy (NBS) policy, retail prices of Phosphatic and Potassic (P&K) fertilizers have risen sharply while the price of urea (N) has remained static. This has led to reduction in consumption of P and K fertilizers resulting in large imbalance of major plant nutrients and deficiency of various micro-nutrients.
- S.11 Since, fertilizers will be increasingly important to improve crop yields and majority of Indian farmers are small and marginal, there is a need to continue subsidizing fertilizers. However, there is a need to shift to DBT of fertiliser subsidy so that farmers can make choices about use of different nutrients based on soil nutrient status. This would allow industry to introduce more efficient products such as water-soluble fertilisers, slow-release fertilisers and customised fertilisers, which

will not only improve crop productivity but also check soil degradation. The Commission recommends that subsidy of about ₹5,000 per year (average farm size of 1.08 ha x average subsidy of ₹4,585/ha) should be transferred to all farmers in two instalments of ₹2,500/- each at the beginning of kharif and rabi season.

Emphasis on Improving Productivity

- S.12 Improving productivity is key to solve the rising cost of production problem and increase farmers' income. However, India's yield levels are significantly lower than global average and other major producing countries in the world. There are large inter-state differences in crop yields and yield gaps in most crops remain large enough to suggest considerable scope for increasing current yields and production on existing cropped area using currently available varieties and improved farming practices. Significant long-term private investment and public spending, effective extension services on crop management strategies and availability of quality inputs and services will help in reducing yield gaps. Therefore, there is a need to devise appropriate strategies for reducing yield gaps and leapfrogging to higher level of productivity in the country.

Investment in Agriculture

- S.13 Both public and private investments are essential for improving economic efficiency and productivity in agriculture. Despite the importance of the agricultural R&D, spending on research remains far below the desired levels. The private sector has to play a larger role in developing new technologies and creating infrastructure but private R&D and infrastructure spending is very low, and less than 3 percent of the total investment in agriculture comes from the corporate private sector. The increasing importance of private sector investment, however, does not imply a reduced role of the public sector, as there are complementarities between public and private investment in agriculture. Therefore, there is a need to scale up both public and private investment in agriculture. The Commission firmly believes that recent landmark reforms will attract more private corporate investment in agriculture and help accelerate growth in agriculture and farm incomes.

Reduce Edible Oil Import Dependency

- S.14 The demand for edible oils in the country has been consistently rising faster than production, resulting in about US\$10 billion of import bill every year. Vegetable oils accounted for more than 40 percent of total agricultural imports in the country in 2019-20. The Commission suggests reducing dependence on edible oil imports by supporting various interventions intended to promote and stimulate domestic production of oilseeds. India has diverse agro-ecological regions that are suitable for cultivation of various edible oilseed crops.
- S.15 Palm oil accounts for more than 60 percent of the country's total vegetable oil imports and promoting oil palm cultivation on about 1.9 million hectares suitable for its cultivation in the country can be a game changer as about 6 million tonnes



of Crude Palm Oil (CPO) can be produced annually. Additional 5-6 million tonnes of edible oils can be produced by bridging the existing yield gaps. Therefore, the Commission recommends that National Mission on Edible Oils should be launched to boost domestic production as Technology Mission on Oilseeds had helped in achieving self-sufficiency in edible oils. The Commission also recommends that oilseed farmers should be ensured remunerative price and assured market through effective implementation of Price Deficiency Payment Scheme (PDPS) and Pilot of Private Procurement & Stockist Scheme (PPPS). There is also a need for close monitoring of vegetable oil imports and impose restrictions, if needed.

Connecting Farmers to Market: Farmer Producer Organizations (FPOs)

- S.16 Market access coupled with market development will contribute significantly toward enduring profitability of agriculture. Government of India has introduced historic policy reforms in agricultural markets and marketing policies, which will transform agricultural marketing system in the country. The electronic National Agricultural Market (e-NAM) will create new opportunities for farmers to engage in direct sales to consumers, processors, exporters, organized retailers and other bulk buyers. However, there is a need to develop proper assaying and grading facilities, ensure participation of major logistics and supply chain players for transport of produce, promote integration with negotiable warehousing receipts financing and set up an effective dispute settlement mechanism for developing national agricultural market. The Commission firmly believes that Central Sector Scheme of Financing Facility under 'Agriculture Infrastructure Fund', "Formation and Promotion of 10,000 Farmer Producer Organizations (FPOs)" and other reforms will help in strengthening such infrastructure at farm-gate, aggregation points and markets.

Promote Crop Insurance among Farmers

- S.17 Agricultural production faces various risks and uncertainties, both from natural disasters and extreme weather events or domestic and international market volatility risks. With strong support from the Government, Pradhan Mantri Fasal Bima Yojna (PMFBY) has made good progress but still faces several challenges. To address some of these challenges, Government revamped the Scheme to make it voluntary for all farmers and introduced several other modifications like use of Smart Sampling Technique (SST) and optimization of number of Crop Cutting Experiments (CCEs), flexibility to States/UTs to select additional risk covers/features, higher Central share in premium subsidy for North Eastern region, etc. The Commission suggests that concerted efforts should be made to create awareness among farmers about benefits of the Scheme and promote use of technology for crop loss assessment and for timely settlement of claims.

Promote Farm Mechanization

- S.18 To address labour shortage and rising agricultural wages, it is important to promote farm mechanization. The Government has launched a multi-lingual mobile app-based aggregator platform 'CHC Farm Machinery' to facilitate easy access to farm machinery to farmers at their doorstep. The Commission is of the view that the public and private sector can complement each other in promoting farm mechanization at field level through collaboration.

Pest and Disease Management

- S.19 Besides common pests and diseases, India experienced serious desert locust outbreak after more than two decades. The Commission suggests that systematic research on desert locust and its control in the country should be revived and appropriate preventive measures for management of desert locust should be implemented in a coordinated manner by the affected States. International collaboration in research, control and information dissemination is required for effective management and control of locust at the regional and global level.

Rational Agricultural Trade Policy

- S.20 To harness export potential of Indian agriculture, it is important to integrate farmers into the global markets. However, the trade policy with respect to imports and exports need to be stable and predictable while safeguarding the interests of farmers. In particular, the Commission, therefore, recommends that decisions of allowing imports and/or reduction in import duties should not coincide with procurement season of crops as it can lead to adverse impact on prices received by farmers.
- S.21 India is highly dependent on imports to meet its edible oil requirements and imports have increased significantly. On the other hand, domestic market prices of oilseeds have generally remained below the MSP during the last few years. The Commission, therefore, recommends that to promote domestic production, farmers need to be protected against uncontrolled imports through dynamic tariff structure linked to world prices, demand-supply situation and domestic prices linked to MSP of oilseeds. Since, imports of refined edible oils have increased in recent years and adversely affected domestic refining industry, duty differential between crude and refined oils should be about 10-15 percent to discourage import of refined oils.

Strengthen Market Intelligence and Outlook System

- S.22 Market information primarily on prices, but also on demand-supply situation, is an important instrument in obtaining early signals of price situation and managing risks relating to price. The Commission in its earlier reports had recommended setting up of market information and intelligence mechanism with the primary objective of forecasting market prices and dissemination. Use of latest technological solutions

like Artificial Intelligence (AI), Big Data, Machine Learning (ML) etc. has the potential to improve market intelligence and outlook systems.

- S.23 The Commission recommends that robust market intelligence and crop 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.

Awareness about MSP and Quality Specifications (FAQ)

- S.24 There is a lack of awareness among farmers about the MSP and quality specifications of grains. The Commission reiterates its earlier recommendation that Central and State Governments should make sincere efforts to create awareness among farmers about MSP, quality specifications, details of procurement centers, procurement period, registration/documents requirements, and information about procurement agencies. The information should be timely disseminated through different media like TV, radio, newspapers, progressive farmers, agricultural extension services including modern information and communication technology (ICT) like mobile phones as it would also help in improving bargaining power of the farmers.

Review of Number of Crops under Commission's Mandate and Sample Size

- S.25 The Commission recommends that some crops should be excluded from the mandate of MSP. For example, safflower production has declined from over 5 lakh tonnes in early-1980s to about 27 thousand tonnes in 2019-20, sunflower production from about 1.2 million tonnes in mid-1990s to about 2.5 lakh tonnes in 2019-20 and nigerseed from about 1.9 lakh tonnes in mid-eighties to about 70 thousand tonnes in recent years. Apart from this, in some crops and States, sample size under the Comprehensive Scheme is insufficient, which can undermine the reliability of cost estimates. Therefore, the Commission recommends that the number of crops under the MSP regime should be reviewed and issue of inadequate sample size need to be addressed urgently by the Directorate of Economics & Statistics.

Overview

- 1.1 Indian agriculture witnessed a remarkable performance with a record production of over 285 million tonnes of foodgrains for two consecutive years. It is estimated that foodgrains production would achieve a new record of 295.7 million tonnes in 2019-20, about 3.7 percent higher than previous year, due to the increase in production of wheat and nutri-cereals. Wheat production is expected to increase by 3.5 percent to 107.2 million tonnes in 2019-20 as compared to 103.6 million tonnes in 2018-19. The production of total nine oilseeds in 2019-20 is estimated to be higher than last year by 6.3 percent at 33.5 million tonnes. Total pulses production is estimated to increase by 4.2 percent at about 23 million tonnes in 2019-20 but lower than 2017-18 level and the target for 2019-20. All-India estimates of area, production and yield of principal crops from 2008-09 to 2019-20 and share of major states in total production of mandated rabi crops are given in Annex Tables 1.1-1.4. The target of foodgrains production for the year 2020-21 has been set at 298 million tonnes, 2.4 percent higher than previous year. In 2019-20, as per Provisional Estimates of GVA at Basic Price by Economic Activity (at 2011-12 prices), Agriculture, Forestry & Fishing sector is expected to grow at 4 percent as compared to 2.4 percent last year.
- 1.2 Normal and well-distributed monsoon rainfall has resulted in bumper harvest for three successive years. Rainfall over the country as a whole for the 2020 Southwest monsoon season is most likely to be normal (96-104% of long period average). As per Central Water Commission Bulletin (July 16, 2020), live storage available in 123 important reservoirs was 150 percent of the live storage capacity of corresponding period of last year and 133 percent of storage of average of last ten years.

Record Procurement and Challenge of Foodgrains Management

- 1.3 Despite global COVID-19 pandemic and consequent nationwide lockdown measures implemented in March 2020, an all-time record procurement of wheat at about 39 million tonnes was achieved during Rabi Marketing Season (RMS) 2020-21. The



number of farmers benefitted from wheat procurement operations also reached at an all-time high of over 43.3 lakh, which has more than doubled since RMS 2016-17 (Chart 1.1).

- 1.4 Despite significant challenge posed by of COVID-19 pandemic, number of beneficiary farmers under procurement operations increased by about 20 percent at all-India level during RMS 2020-21 over the last year. Madhya Pradesh, Punjab and Rajasthan witnessed a significant increase in coverage of farmers. In Madhya Pradesh, number of beneficiary farmers increased from about 9.6 lakh in RMS 2019-20 to over 15.9 lakh in RMS 2020-21, while in Punjab, it increased from about 8.3 lakh to 10.5 lakh and Rajasthan from one lakh to 2.2 lakh during the period. However, Haryana and Uttar Pradesh recorded a decline in coverage of farmers under procurement operations.

Chart 1.1: Trends in Wheat Procurement and Beneficiary Farmers in India



Source: Food Corporation of India

- 1.5 Managing excess foodgrains stocks, however, has been and will remain a major challenge facing the Indian food sector, especially in the context of open-ended procurement policy. The country had a record production of wheat and rice in 2018-19 and all set to rise to new records in 2019-20. As against the foodgrains stocking norms of 41.1 million tonnes of rice and wheat (as on 1st July of each year), total Central Pool stocks were more than double at 82.4 million tonnes (27.2 million tonnes of rice and about 55 million tonnes of wheat) on 30th June 2020.
- 1.6 The country has been holding excessively large foodgrains stocks for the last few years and has driven out private trade. These excess stocks have also cost implications in carrying and storage of grains. As part of the Economic Measures (Atmanirbhar Bharat Abhiyan), an allocation of 5 kg foodgrains per person per month for two months free of cost to the migrants, who are not covered under National Food Security Act (NFSA) or State Scheme PDS Cards, was made to about 8 crore migrants during COVID-19. The Pradhan Mantri Garib Kalyan Anna Yojna (PMGKAY) for providing additional foodgrains @ 5 kg/person/month free of cost to all Antyodaya Anna Yojana (AAY), Priority Household (PHH) and Direct Benefits Transfer (DBT) beneficiaries under Targeted Public Distribution System (TPDS) has been extended for a period of five months from July to November 2020. About 20.1

million tonnes of foodgrains (9.1 million tonnes wheat and 11 million tonnes rice) will be required for allocation under the Scheme for five months. The additional allocation will help in ensuring food security to over 80 crore people and liquidating excess stocks to release storage space for procurement during coming kharif season and reduce storage and other costs. However, stocks will remain much higher than stocking norms. Wheat stocks are estimated to be at about 33.2 million tonnes as against stocking norms of 13.8 million tonnes on 1st January 2021 (Annex Table 1.5).

- 1.7 The offtake of rice and wheat under Open Market Sale Scheme (Domestic) [OMSS (D)] during 2019-20 was much lower at about 5.3 million tonnes against a target of 15 million tonnes. The Government has announced policy for sale of wheat and rice through OMSS (D) for the year 2020-21. For wheat, quantity for sale has been fixed at 15 million tonnes at a reserve price ₹2,135/- per quintal for Fair Average Quality (FAQ) and ₹2,080/- per quintal for Under Relaxed Specifications (URS) for Madhya Pradesh, Punjab and Haryana, while, for rice, quantum for sale is fixed at 5 million tonnes at uniform reserve price of ₹2,250/- per quintal. However, the Department of Food & Public Distribution (DFPD) may review quantum, if offtake is more. The reserve price of wheat and rice has been kept at the same level for 2020-21 as in fourth quarter of 2019-20. The reserve price was reduced from ₹2,245 to ₹2,135 per quintal for wheat on January 17, 2020 and from ₹2,785 to ₹2,250 per quintal for rice from December 31, 2019. The reasonably low reserve prices are expected to increase offtake of foodgrains under the Scheme.
- 1.8 Global production of wheat is projected to increase in 2020-21 and the stocks to-use ratio is estimated to reach historically high levels. Abundant world wheat supplies combined with low maize and coarse cereal prices are expected to keep global wheat prices low, thereby limiting scope for Indian exports. The Commission, in its Kharif Price Policy Report 2020-21, has already recommended urgent liquidation of stocks. In view of consistently high stocks and limited scope for exports, there is a need for an effective policy to liquidate 'excessive' stocks and a thorough review of the open-ended procurement policy for rice and wheat.

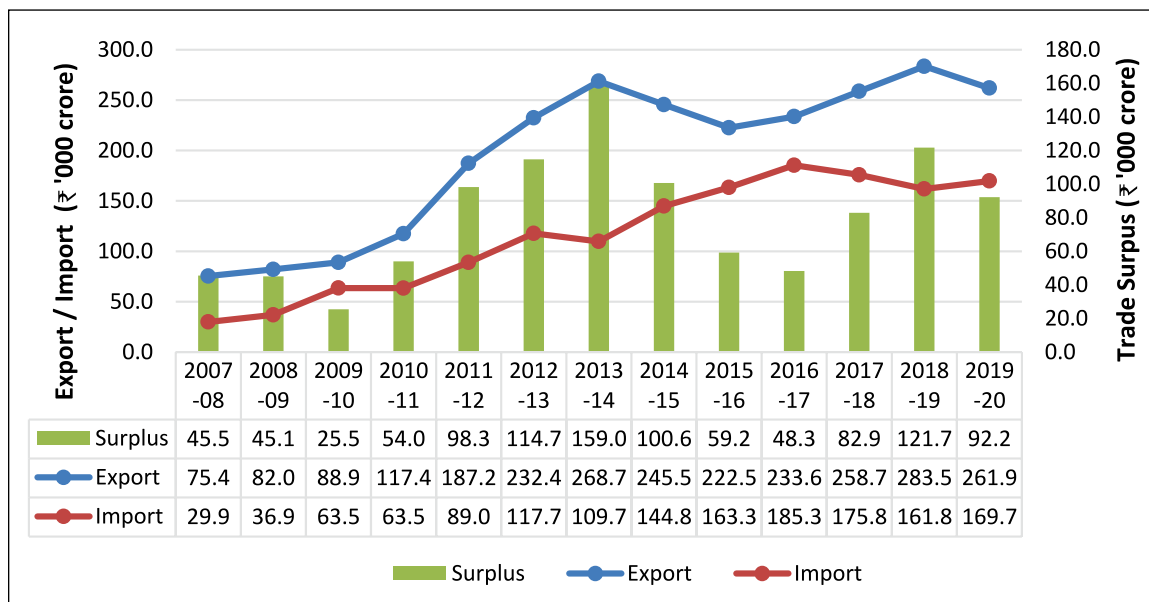
Agricultural Trade Performance

- 1.9 After recording relatively strong growth during the last three years, India's agricultural exports fell by 7.6 percent in 2019-20 compared with the previous year (Chart 1.2). The value of agricultural exports declined from ₹283.5 thousand crore in 2018-19 to ₹261.9 thousand crore in 2019-20. This export reduction was driven in particular by fall in exports of non-basmati rice (-24.6%), basmati rice (-6.5%), buffalo meat (-9.7%), cotton (-48.4%), oil meals (-44.5%), fresh vegetables (-18.7%) and cashew (-12.3%). On the other hand, agricultural imports increased by 4.9 percent in 2019-20, from ₹161.8 thousand crore in 2018-19 to ₹169.7 thousand crore in 2019-20 and were mainly driven by increased imports of cotton (113.8%), spices (28.4%) and pulses (27.2%). India's agricultural trade generated a trade surplus of ₹92.2 thousand crore in the year 2019-20 but trade surplus fell by 24.2 percent compared with the previous year. According to the WTO's annual trade forecast in April, in light of uncertainty around the COVID-19 pandemic's severity



and economic impact, the volume of world merchandise trade in 2020 would contract by 13 percent under relatively optimistic scenario and 32 percent under a pessimistic scenario, which would have impact on Indian exports.

Chart 1.2: India's Exports and Imports of Agricultural Commodities (2007-08 to 2019-20)



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

Overview

Increased Liquidity in Agriculture Sector

- 1.10 Under the Pradhan Mantri Kisan Samman Nidhi (PM-KISAN) Scheme, direct benefit transfer worth about ₹19,351 crore has been made to about 9.7 crore farmers towards first instalment during the lockdown period.
- 1.11 With record procurement of wheat during RMS 2020-21, the Food Corporation of India (FCI) and State Government agencies purchased wheat worth ₹74,948.5 crore out of which ₹72,809.9 crore has been paid to farmers as on 16th July 2020. The National Agricultural Cooperative Marketing Federation of India (NAFED) has procured 21.3 lakh tonnes of gram (worth ₹10,402 crore) and 8 lakh tonnes of rapeseed & mustard worth ₹3,555.7 crore (as on 16th July 2020). In addition, 7.3 lakh tonnes of tur (arhar) with estimated value of ₹5,916 crore and other crops such as lentil, moong, groundnut and sunflower seed worth over ₹75 crore have been procured under PSS during RMS 2020-21. The Government has transferred more than ₹1.2 lakh crore directly into farmers' account during the COVID-19 period.
- 1.12 The financing facility of ₹one lakh crore under Atmanirbhar Bharat Abhiyan has been provided for funding agriculture infrastructure projects at farm-gate and aggregation points such as Primary Agricultural Cooperative Societies, Farmer Producer Organizations (FPOs), agriculture entrepreneurs, Start-ups, etc. with a view to give impetus for development of post-harvest management infrastructure

at farm-gate.

- 1.13 There has also been a quantum jump in the budgetary support for agriculture. The allocation to Department of Agriculture, Cooperation & Farmers Welfare has increased from ₹46,076 crore in 2018-19 to ₹1,01,904 crore in 2019-20 (RE) and allocation for 2020-21 is ₹1,34,399.8 crore, about three-fold increase over 2018-19. The budgetary allocation for Department of Agricultural Research and Education has increased from ₹7,544.3 crore in 2018-19 to ₹7,846.2 crore in 2019-20 and ₹8,362.6 crore in 2020-21. There is a need to further step up public funding for agricultural research and development for improving long-term productivity growth and competitiveness of the sector.

Food Inflation

- 1.14 The annual rate of inflation of food articles, based on monthly Wholesale Price Index (Base: 2011-12=100), showed a declining trend during December 2019 to May 2020 and stood at 1.13 percent in May 2020 but marginally increased to 2.04 percent in June 2020. The inflation rate for vegetable and animal oils and fats remained significantly higher (12.71% during January-June 2020) and was 13.88 percent in June 2020. In contrast, inflation rate for oilseeds was significantly lower at 4.17 percent during January-June 2020 and stood at 3.20 percent in June 2020. Despite having bumper harvest of wheat as well as high stocks, inflation rate for wheat remained relatively high (6.44%) during last six months and was 5.17 percent in June 2020. Other food articles, which recorded high inflation rate during the last six months, were potato (62.55%), onion (105.42%) and pulses (11.74%).
- 1.15 The Consumer Food Price Index (CFPI) inflation, which remained subdued during the last three years, rose sharply in 2020 and was 10.14 percent during January-June mainly driven by vegetables (21.84%), pulses and products (18.28%), meat and fish (12.43%) and oils and fats (9.49%). The inflation rate, based on Consumer Price Index (CPI) (Base: 2012=100) was marginally higher in rural sector compared with urban sector. The inflation rate of CFPI for all-India in June 2020 (Provisional) for combined sector (rural+urban) stood at 7.87 percent, down from 9.28 percent in May 2020, due to fall in inflation rate of vegetables, fruits, pulses, eggs and milk. The all-India rate of inflation, based on monthly WPI and CPI for major food commodities/groups during 2018 to 2020 is given in Annex Tables 1.6 and 1.7.

Pulses

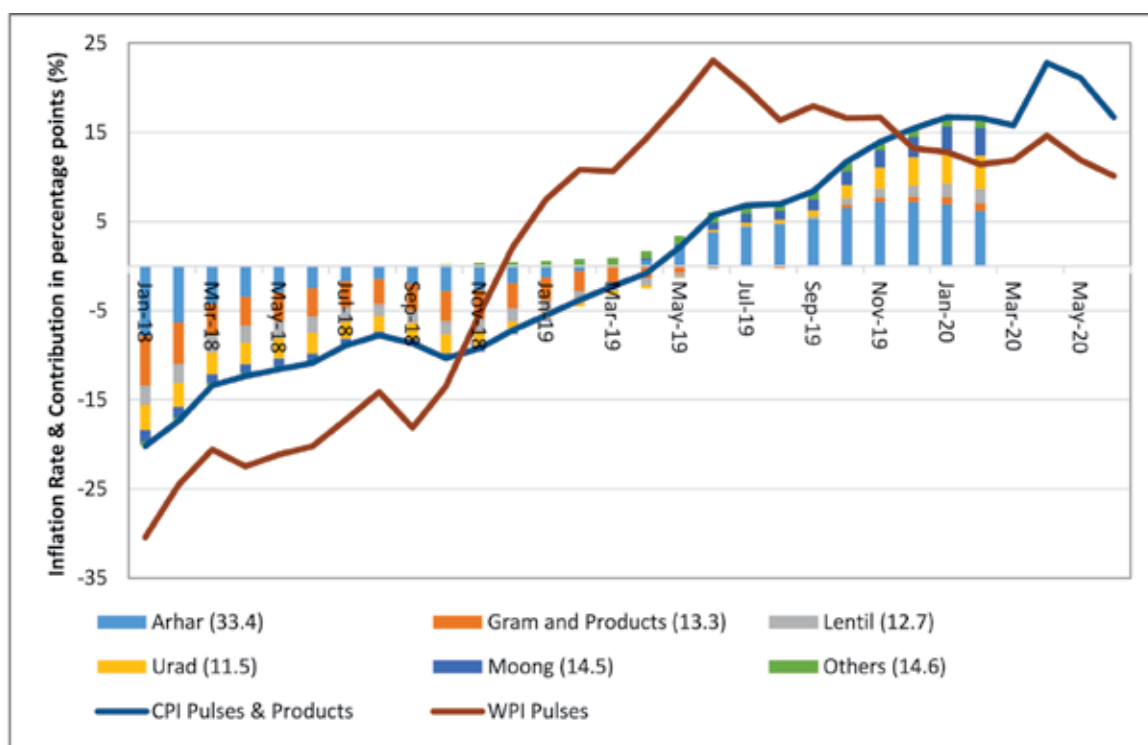
- 1.16 Prices of pulses, which have a weight of 2.95 percent in the CPI and 6.24 percent in the CFPI, witnessed a significant increase and were important source of inflationary pressure. Inflation for pulses and products based on CPI increased from (-) 5.5 percent in January 2019 to 22.78 percent in April 2020 but declined in May and June. However, WPI based inflation for pulses, which was quite high during the 2nd half of 2019, moderated during 2020 and was 10.1 percent in June 2020. The high inflation for pulses is primarily due to lower production of tur, urad, moong and



lentil during last two years due to unfavourable weather conditions. However, it is important to keep in mind the farmers perspective as mean inflation rate for pulses during 2017 and 2018 was in negative zone and market prices have remained well below the MSP of pulses, thereby, hurting farmers' interest.

- 1.17 In order to study drivers of pulses inflation, a decomposition analysis has been done. For this purpose, change in CPI index of the specific pulse crop relative to change in CPI index of all pulses taken together has been computed and weighed by the proportional weight of the specific pulse in pulses index. The results are summarised in Chart 1.3. It is seen that arhar was the key driver of inflation in pulses, followed by gram and its products and subsequently urad and lentil.

Chart 1.3 Trends and Drivers of Inflation Rate of Pulses and Products



Note: Figures in parentheses indicate weights in CPI-Pulses and Products

Source: 1. Ministry of Statistics and Programme Implementation for CPI data

2. Office of Economic Adviser, Dept. for Promotion of Industry and Internal Trade (DPIIT) for WPI data

Historic Reforms in Agricultural Marketing System

- 1.18 Farmers' income and welfare has taken centre stage of agricultural policy planning in the country and government has taken various policy reforms and initiatives to achieve its policy objectives. The Central Government has recently introduced far-reaching reforms in agricultural marketing system, which will help in attracting private investment in building post-harvest infrastructure and efficient value chains and ensuring higher returns to farmers. In order to provide alternative channels for

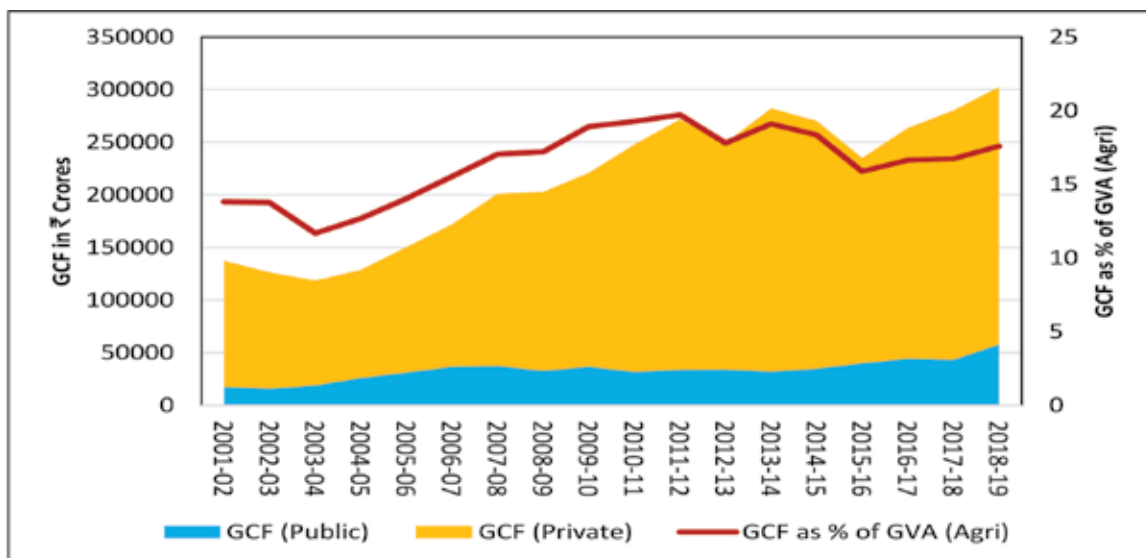
farmers to sell their produce outside traditional APMC mandi system and increase competition in agricultural markets to create national market, Government has liberalized the regulatory systems to address long standing demands of corporate agribusiness sector and farmers. The Farmers' Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020 and The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance, 2020 will create new opportunities for farmers to sell their produce at remunerative prices and better access to farm inputs and services. The Essential Commodities (Amendment) Ordinance, 2020 will help in building efficient agri-food supply chains and attract more private sector investment in value-addition, scientific storage, warehousing and marketing infrastructure to help both farmers and consumers by reducing price instability and wastages.

Investment in Agriculture

- 1.19 Growth in agriculture depends on investments in the agricultural sector and profitability of farms. Various studies have shown that economic rates of return to agricultural investment particularly in research and development are very high. However, ratio of gross capital formation (GCF) in agriculture relative to GVA from agriculture excluding forestry and logging showed a declining trend during 2011-12 to 2015-16, when it plummeted to 15.9 percent and has been gradually rising since then, reaching 17.6 percent in 2018-19. The share of public investment has increased during last six years from 11.3 percent in 2013-14 to 19.1 percent in 2018-19, whereas, share of private sector particularly household sector has declined from 88.7 percent to 80.9 percent during the corresponding period. The private sector spending is essential for improving economic efficiency and productivity in agriculture but less than 3 percent of the total investment in agriculture comes from the private corporate sector. Despite the importance of the agricultural R&D, expenditure on research as percentage of agriculture gross domestic product is less than 0.5 percent and has remained at the same level for last two decades. The private sector should play an increasingly important role in agricultural R&D and infrastructure development. The Commission firmly believes that recent landmark reforms will propel private corporate investment in agriculture and help accelerate growth in agriculture and farm incomes.



**Chart 1.4: Trends in Public and Private Sector Gross Capital Formation in Indian Agriculture:
2001-02 to 2018-19**



Source: National Account Statistics, Ministry of Statistics and Programme Implementation (MOSPI)

Overview

Fertiliser Pricing and Subsidy: Direct Benefit Transfer (DBT)

1.20 Partial decontrol of fertiliser sector has led to imbalance in use of primary nutrients N, P and K. The consumption of N grew by 1.7 percent per year (y-o-y) in post-Nutrient Based Subsidy (NBS) period, whereas, consumption of P_2O_5 and K_2O declined by (-)0.02 percent and (-)2.3 percent per year, respectively, during the period. After stagnation from 2010-11 to 2018-19, fertiliser consumption in the country witnessed a significant increase during 2019-20. Consumption of N recorded an increase of 8.5 percent in 2019-20 over the last year, while P_2O_5 consumption grew by 11 percent. In contrast, consumption of K_2O declined by 2.6 percent, which caused further distortion in the NPK use ratio from 6.6:2.6:1 in 2018-19 to 7.3:2.9:1 in 2019-20. Existing pricing policy has resulting in imbalanced use of primary nutrients and does not address the issue of deficiency of secondary and micronutrients. The fertiliser subsidy has increased from ₹65,837 crore in 2010-11 to ₹70,086 crore in 2018-19(RE) and is estimated at ₹79,996 crore in 2019-20 (BE). The budgetary allocation for 2020-21(BE) is ₹71,309 crore, about 10.9 percent lower than 2019-20 (RE). The rising arrears of fertilizer subsidy put severe constraint of working capital on the industry.

1.21 Since, fertiliser is one of the most important inputs for increasing agricultural productivity and production and majority of Indian farmers are small and marginal, there is a need to continue subsidizing fertilizers. However, there is a need to shift to DBT of fertiliser subsidy so that farmers can make choices about use of different nutrients based on soil nutrient status. Based on database generated under PM-KISAN, DBT of fertiliser subsidy can be made to farmer's account and fertilizer manufacturers should be free to manufacture and supply fertilizers at

competitive market prices. It would also help in introduction of new value-added and customised products, which can improve nutrient use efficiency and give better returns to farmers. Given the total operated area of 157.8 million hectare, as per Agriculture Census 2015-16, and annual fertiliser subsidy of about ₹72,357 crore in TE2018-19, average per hectare subsidy works out to ₹4,585 per year. The Commission recommends that subsidy of about ₹5,000 per year (average farm size of 1.08 ha x average subsidy of ₹4,585/ha) should be transferred to all farmers in two instalments of ₹2,500/- each at the beginning of kharif and rabi season. However, the DBT of subsidy should be linked to actual purchase of fertilisers by the beneficiary farmers.

Farm Labour Shortage and Rising Wages

- 1.22 Indian agriculture faces unique workforce challenges due to migration and seasonal nature of farm operations. Farmers continue to face critical labour shortages, rising labour costs, and a major constraint on both farm profitability and global competitiveness. In the midst of COVID-19 crisis, agriculture sector faced serious labour shortages due to non-availability of migrant labourers. To address the problem of labour scarcity, State governments promoted Direct Seeding of Rice (DSR), e.g. Government of Punjab targeted to bring about 25 percent of total area under paddy sowing under DSR.
- 1.23 However, there is a need to develop sustainable agricultural mechanization strategies and supportive policies that can promote agricultural mechanization practices and technologies among farmers. Since majority of Indian farms are small and fragmented, investment in large machinery is not a viable option. Hence, there is a need to promote farm mechanization through Custom Hiring Centres (CHCs) established through Public-Private-Partnership (PPP), private entrepreneurs, co-operative basis, farmer's organizations and charitable trusts, which will enable small and marginal farmers to access the benefits of machinery without making investments. The Government has launched a multi-lingual mobile app-based aggregator platform 'CHC Farm Machinery' to facilitate easy access to farm machinery to farmers at their doorstep. So far 51,473 CHCs have been registered on the Mobile App to provide around 1.5 lakh agricultural machines on rental basis to farmers and about 1.5 lakh farmers have registered on this platform. 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.

Risk Management

- 1.24 Farming is structurally exposed to various production risks due to weather, disease, pests, and other factors, market/price risk and Institutional risk. Government programmes addressing agricultural risk management have played a larger role in India's farm policy. The Minimum Support Price and procurement programme that aim to offer insurance against price/market risk have played an important role in



ensuring remunerative prices to farmers. The first crop insurance programme on cotton was started in early-1970s and various other Schemes were introduced after that but had limited success and coverage of farmers was very low. In February 2016, Government of India launched Pradhan Mantri Fasal Bima Yojana (PMFBY) to provide insurance coverage and financial support to farmers in the event of failure of crop due to natural calamities, pests and diseases. The Scheme has made good progress as number of farmers and area insured under the Scheme has increased. However, there have been many challenges like timely crop loss assessment, delay in settlement of claims, delay in payment of State share of premium, compulsory enrolment of loanee farmers, etc.

- 1.25 To address these issues, Government of India revamped the Scheme in February 2020 and made several changes such as enrolment under the Scheme made voluntary for farmers, adoption of technology solution like Smart Sampling Technique (SST) and optimization of number of Crop Cutting Experiments (CCEs), flexibility to States/UTs to select any or many of additional risk covers/features, increased Central share in premium subsidy for North Eastern States, etc.

Connecting Farmers to Market: National Agriculture Market (e-NAM)

- 1.26 To bring farm sector on digital platform and create a unified national market for agricultural commodities, electronic-National Agriculture Market (e-NAM) was launched on April 14, 2016. The e-NAM has made significant progress as 962 mandis have been linked to the platform and about 1.7 crore farmers, 1.3 lakh traders and 70,934 Commission Agents were registered on e-NAM (as on 31st March 2020), which facilitated trade worth ₹99.5 thousand crore since its inception. The volume of trade has increased from about 5.4 million tonnes in 2016-17 to 10.5 million tonnes in 2019-20 while trade value has increased from ₹13 thousand crore to ₹34.9 thousand crore during this period.
- 1.27 The platform has the potential to create a competitive national agricultural market but issues related to proper assaying and grading, dispute settlement mechanism, aggregation of produce at farm level through farmer groups, participation of major logistics and supply chain players for transport of produce, integration with negotiable warehousing receipts financing, etc. need to be addressed. Government has already taken some initiatives in this direction. For example, Kisan Rath mobile app was launched in April 2020 to facilitate logistics and transportation for farmers, FPOs and traders for transporting the produce and more than 11.4 lakhs trucks and 2.3 lakh transporters have been linked to the e-NAM portal. Integration of negotiable warehousing receipts (e-NWR) and National Agriculture Market (e-NAM) was announced in the budget 2020-21, which will help farmers to participate in trading by storing quality produce in registered warehouses of WDRA resulting in lower logistics costs and better income. Recently approved Central Sector Scheme of Financing Facility under 'Agriculture Infrastructure Fund' will help in development of affordable and financially viable post-harvest management infrastructure at farmgate and aggregation point through interest subvention and financial support.

Aggregation and Collective Marketing of Farm Produce

- 1.28 In order to ensure better prices to farmers, it is necessary to improve their bargaining power and access to commodity markets. Government of India, thus approved a Central Sector Scheme “Formation and Promotion of Farmer Producer Organizations (FPOs)” in February 2020 to form and promote 10,000 new FPOs with a total budgetary provision of ₹4,496 crore during 2019-20 to 2023-24 and a further commitment of ₹2,369 crore for 2024-25 to 2027-28 period for handholding of FPOs for five years. A dedicated Credit Guarantee Fund of ₹1,000 crore with National Bank for Agriculture and Rural Development (NABARD) and ₹500 crore with National Cooperative Development Corporation (NCDC) has been created to provide credit guarantee facility to the States. To promote specialization and better processing, marketing, branding and export, new FPOs will be formed on production cluster basis and encouraging the concept of “One District One Product”.
- 1.29 NABARD has promoted/supported over 3,000 FPOs, while Small Farmers’ Agri-business Consortium (SFAC) has registered/under the process of registration 910 FPOs as on May 31, 2020. Ministry of Rural Development, Government of India, is also promoting FPOs by mobilizing farmers under Deendayal Antyodaya Yojana - National Rural Livelihood Mission (DAY-NRLM). In addition, various NGOs and development organizations are also promoting FPOs. However, there is a need to create convergence of FPOs promoted by various agencies and provide support to these FPOs as most of these are at nascent stage and do not have requisite human resources, capital and infrastructure facilities.

Storage and Warehousing Infrastructure

- 1.30 The total storage capacity available with FCI and State agencies for storage of central pool stocks as on March 31, 2020 was 755.9 lakh tonnes against the total stocks of 585 lakh tonnes. About 82.5 percent of storage was covered and remaining 17.5 percent was Cover and Plinth (CAP).
- 1.31 Government has launched various schemes for strengthening warehousing sector in the country by improving quality of storage infrastructure including specialized warehouses across the country. A storage capacity of 143.6 lakh tonnes has been created under Private Entrepreneurs Guarantee (PEG) Scheme, under which FCI pays guaranteed hiring charges for the storage capacity for 10 years in case of private investors and 9 years in case of CWC, SWC and other State Agencies. In order to strengthen storage infrastructure in North Eastern States, a Plan Scheme (now Central Sector Scheme) was implemented during the 12th Five Year Plan, which has been extended up to 31st March 2022. About 1.7 lakh tonnes (1.1 lakh tonnes in NE and 59,560 in other States) capacity will be created with a financial outlay of ₹244.2 crore, out of which only 45,870 tonnes has been completed till 31st March 2020. There is a need to accelerate the pace of development of storage capacity in NE States to increase procurement. For creating modern storage capacity, Government of India has approved an action plan for construction of silos for foodgrains in Public Private Partnership (PPP) mode for a capacity of 10 million tonnes. However, pace



of construction of silos is slow and only 7.8 lakh tonnes capacity has been created so far.

- 1.32 The Commission is of the view that amendment to the Essential Commodities Act and other two Ordinances will attract private investment in large-scale modern storage and marketing infrastructure including in the areas of contract farming and direct marketing. The Agriculture Infrastructure Fund for development of farm-gate infrastructure under Atmanirbhar Bharat Abhiyan will help in creation of post harvest infrastructure at farm-gate and aggregation points.

Challenge of Growing Dependence on Edible Oil Imports

- 1.33 Currently, oilseeds sector presents a great challenge before the country. India is highly dependent on imports of vegetable and edible oils and around 60 percent of domestic demand is met through imports. Vegetable oils accounted for about 40.4 percent of total agricultural imports in the country in 2019-20. The import of edible vegetable oils was about 13.9 million tonnes amounting to ₹68,622 crore in 2019-20. The major oils imported (in volume terms) during 2019-20 were palm oil (61.5%), soybean oil (21.7%) and sunflower oil (16%).
- 1.34 Edible oil consumption in the country has been consistently rising faster than production due to growth in population, increasing income levels and the emerging dietary changes are driving increasing use of edible oils. A major problem in oilseeds sector in the country is low productivity of oilseed crops as oilseeds are cultivated on marginal land and largely dependent on rainfall. In this context, the most appropriate option is to promote cultivation of high-oil content crops like oil palm having diverse uses for both food and non-food products and improve productivity of oilseeds. It is estimated that around 6 million tonnes of Crude Palm Oil (CPO) can be produced annually in the country from about 1.9 million hectare potential area for oil palm cultivation. Additional 5-6 million tonnes of edible oils can be produced by bridging the existing yield gaps. There is a need to launch National Mission on Edible Oils to boost the domestic production of oilseeds as the Technology Mission on Oilseeds launched in 1986 had helped in achieving self-sufficiency in edible oils.

Improved Locust Management Strategies

- 1.35 Desert locust is the world's most destructive migratory pest and threat to food security and livelihood of millions of rural households. The Food and Agriculture Organization (FAO) of the United Nations had established three regional Desert Locust Commissions in the mid-1960s to strengthen national capacities and promote national action in the control of the pest. The Commission for Controlling the Desert Locust in South-West Asia (SWAC) consisting of four member countries: Afghanistan, India, Iran and Pakistan established on 15th December 1964 was the first of these Commissions.
- 1.36 There has not been any major locust swarm incursion during the last two decades, therefore, locus control programmes around the world dwindled as funding for

various activities of research, technical guidance, locust surveillance and control measures dried up. However, a major locust upsurge developed in the country in 2019, when 1500 swarm attacks were recorded and control operations were undertaken in about 3.3 lakh ha area. During 2020, swarms were observed in Rajasthan, Gujarat, Madhya Pradesh, Maharashtra, Punjab and Uttar Pradesh and control operations were undertaken covering 89,905 ha area up to 15th June.

- 1.37 Government of India has Locust Warning Organization (LWO) and ten Locust Circle Offices (LCOs) in Rajasthan and Gujarat for monitoring, survey and control of desert locust in coordination with the State Governments. Government has taken several initiatives such as deployment of helicopter for aerial spray, use of drones, provision of assistance for purchase of tractors mounted spray equipments under Sub-mission on Agriculture Mechanization, import of spray equipments, etc. for locus control. However, there is need to undertake systematic research on desert locust and its control in the country and adopt appropriate preventive control strategies for the management of desert locust. International collaboration in research, control and information dissemination is required for effective management and control of locust.

Outlook for Indian Agriculture

- 1.38 In June 2020, Indian Metrological Department (IMD) had predicted Southwest monsoon seasonal (June to September) rainfall over the country as a whole likely to be normal (96-104% of long period average (LPA)) of 88 cm for the period 1961-2010). The Southwest monsoon covered the entire country in 2020 ahead of schedule and by mid-July, 72 percent of districts had received either normal or excess rainfall. According to the IMD, cumulative rainfall received during Southwest monsoon from 1st June 2020 up to 15th July 2020 was 328.9 mm compared with cumulative normal of 298.3 mm. This has resulted in significant increase in kharif sowing and as on 17th July 2020 area under kharif crops was 21.2 percent higher compared to corresponding period of the last year. Oilseeds recorded the highest increase (40.7%), followed by pulses (32.3%), rice (18.6%) and cotton (17.3%). A comfortable level of water in reservoirs should also lead to a better rabi output.

World Outlook

- 1.39 According to the latest Food Outlook report of the FAO, cereal supply and demand situation is likely to remain comfortable in 2020-21 season. Global food markets will face uncertainty related to the COVID-19 pandemic but are likely to display more resilience than other sectors. FAO's latest forecast for world cereal production in 2020 stands at around 2790 million tonnes and set to surpass the record high reached in 2019. Global wheat production is forecast to reach a record high leading to high stocks and abundant world supplies are expected to keep global prices low. As per CME Group, futures prices for wheat declined modestly due to adverse effects of COVID-19. Price of Chicago Soft Red Winter (SRW) wheat averaged USD 188.3 per tonne in May 2020 for the September 2020 delivery, over 10 percent



lower than the start of the year, but 10 percent above the corresponding period last year. According to the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES), world wheat indicator price is forecast to remain low at an average of US\$222 per tonne in 2020-21.

- 1.40 FAO's Food Outlook June 2020 points towards tightening supply-demand situation for oilseeds and derived products in 2019-20 due to lower production of soybean and rapeseed. Tentative forecasts for 2020-21 indicate that supplies could remain tight relative to demand. Global oils/fats production is also expected to fall short of utilization leading to lower inventories in 2019-20. However, early crop forecasts for 2020-21 point to a recovery in global meal and oil production. According to the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) and United States Department of Agriculture (USDA), world oilseed production is forecast to increase in 2020-21 largely due to higher production of soybean in USA and Brazil and canola in Australia and Ukraine. World production of vegetable oils is also expected to increase in 2020-21 due to increases in palm oil production in Indonesia and Malaysia driven by increase in area and favourable growing conditions.
- 1.41 The FAO Food Price Index (FFPI) with base period 2014-16=100 was on a downward trend for four consecutive months (February-May 2020) due to negative economic effects of COVID-19 and averaged 91.1 points in May 2020, down 1.5 percent from April and reaching the lowest monthly average since December 2018. However, FFPI increased to 93.2 points in June 2020, 2.4 percent higher than in May, the first month-on-month increase since the beginning of the year. The Cereal Price Index in June 2020 was 0.6 percent down from May, while vegetable oil price index averaged 77.8 points in May 2020, reaching a 10-month low but increased by 11.3 percent in June and was 86.6 points. The price index for oilseeds recovered moderately, while the oil meals index continued declining trend in June 2020.

Structure of the Report

- 1.42 The report is organized as follows. Chapter 2 presents the demand-supply outlook and procurement operations of mandated crops. Trends in crop productivity, yield gap analysis and major drivers of productivity are discussed in Chapter 3. Chapter 4 provides an overview of trade patterns and performance, trends in domestic and world prices, trade policy changes and trade outlook. Chapter 5 analyses the cost, returns and costs projections of the mandated crops. Finally, Chapter 6 summarizes main considerations and presents non-price policy measures and MSP recommendations.

Supply-Demand Scenario, Price Trends and Procurement Operations

World Situation and Outlook

Wheat

- 2.1 As per United States Department of Agriculture (USDA) World Agricultural Supply and Demand Estimates (July 11, 2020), the global wheat supply is forecast to increase by 2.1 percent, from 1044.6 million tonnes in 2019-20 to 1066.4 million tonnes in 2020-21 on account of higher production in several key wheat-producing regions and higher carry-over stocks from previous year (Table 2.1). World total use of wheat is forecast to increase by 0.6 percent in 2020-21 but global wheat feed use is expected to fall due to bumper crop of barley and corn, competitively priced. With higher supplies, and marginal increase in global use, world ending stocks are set to reach a record-high 314.8 million tonnes. Food and Agriculture Organization (FAO) forecasts 761.5 million tonnes production of wheat in 2020-21, same as last year. However, supply is expected to increase marginally due to higher carry-over stocks from previous year. Further, FAO estimates 0.4 percent reduction in utilization of wheat mostly due to lower demand prospects for the feed sector. In case of trade, FAO forecasts a slight increase from 177.1 million tonnes in 2019-20 to 178.7 million tonnes in 2020-21. World wheat stocks are forecast at 283.8 million tonnes, up 3.2 percent from high opening levels in 2019-20. As per International Grain Council (IGC), supply of wheat is estimated to increase by 1.9 percent in 2020-21 compared to 2019-20 due to higher production as well as high opening stocks. Trade is forecast to be stagnant, while total use is forecast to increase marginally from 749.2 million tonnes in 2019-20 to 751.4 million tonnes in 2020-21. Overall, closing stocks of wheat as per IGC estimates are expected to increase by 5.6 percent, from 273.6 million tonnes to 289.9 million tonnes. All forecasts point towards higher supply

and record high stocks of wheat in the world market. Wheat prices are expected to be adversely affected due to dual effects of record supplies and carryover stocks with low prices of corn and coarse grains.

Table 2.1: Global Supply and Demand Outlook for Wheat

(Million tonnes)

	USDA			FAO			IGC		
	2018-19	2019-20	2020-21 ^f	2018-19	2019-20	2020-21 ^s	2018-19	2019-20	2020-21 [#]
Production	730.9	764.8	769.3	732.4	761.5	761.5	731.4	761.9	767.6
Supply ^a	1014.9	1044.6	1066.4	1020.1	1033.6	1036.5	1000.0	1022.8	1041.3
Trade ^b	175.4	188.3	186.7	168.3	177.1	178.7	168.6	181.0	180.1
Utilization	732.3	742.7	746.8	750.8	757.0	754.1	739.5	749.2	751.4
Ending Stocks	279.8	297.1	314.8	272.1	275.0	283.8	260.5	273.6	289.9
Stock-to-Use Ratio	38.6	37.7	39.8	35.9	36.5	36.8	36.4	34.8	36.5

Note: 2019-20 figures of FAO and IGC are estimates, ^fForecast July 10, 2020, ^sForecast 2nd July 2020, [#]Forecast 25th June 2020; ^aProduction plus opening stocks ^bTrade data refer to exports

Source: 1. USDA World Agricultural Supply and Demand Estimates July 11, 2020

2. FAO Cereal Supply and Demand Brief July 2020

3. International Grains Council (IGC)

Pulses

- 2.2 Pulses are an essential dietary component for millions of people in India due to their high protein and nutritional content. India, Canada, Myanmar, China, Nigeria, Brazil, Australia, USA, Russia and Tanzania are major producers of pulses in the world. India was one the world's largest importers of pulses but imports have declined during the last 2-3 years due to increased domestic production. Canada, Myanmar and Australia are major exporters of pulses to India. Canada, which is the largest exporter of pulses to India, produces about 7 million tonnes and nearly 90 percent of production is for export market. China, Bangladesh, India, USA, Turkey, UAE and EU are main markets for Canadian exports. Total production and supply of pulses in Canada is forecast to marginally decline in 2020-21 while supply of dry peas is forecast to remain almost at 2019-20 level. For 2019-20, Canada's exports are estimated to increase from 3.3 million tonnes in 2018-19 to 3.7 million tonnes due to record imports by China and strong demand from Bangladesh and India (Table 2.2).
- 2.3 Canada is also the largest producer and exporter of lentil in the world and main markets for Canada lentils are India, Turkey and the United Arab Emirates. For 2020-21, lentil supply is expected to fall to 2.5 million tonnes, 13.3 percent lower than 2019-20, due to lower opening stocks and production. Exports are expected to be lower than in 2019-20 and ending stocks are forecast to decrease to about 1.5 lakh tonnes, therefore, average price is forecast to rise in 2020-21 compared to 2019-20.

- 2.4 For 2019-20, Canada's exports of dry peas are expected to increase from 2018-19 due to record imports by China and strong demand from Bangladesh and India but exports are forecast to be slightly lower in 2020-21. Ending stocks are forecast to rise to 4.75 lakh tonnes while average price is expected to be marginally lower than 2019-20 due to increased world supply.
- 2.5 Australia produces about 2.5 million tonnes of pulses and about 75 percent production is for exports. Total production of pulses, which declined from about 4.6 million tonnes in 2016-17 to 1.6 million tonnes in 2019-20, is forecast to increase and is estimated at 2.4 million tonnes in 2020-21.
- 2.6 Myanmar is the largest exporter of urad/black gram to India. About 70-80 percent of urad/black gram and about 80-90 percent of total tur production is exported to India. According to the USDA Burma Beans and Pulses Update 2020 (June 2020), production of beans and pulses, which significantly declined in 2017-18 and 2018-19 due to lower demand from India, further fell in 2019-20 due to low rainfall and low prices. However, production is expected to increase by 3 percent in 2020-21, with high growth in urad in anticipation of higher imports by India. Production of tur also declined due to low domestic prices driven by low export demand as domestic consumption is very low and is primarily for exports to India and other markets. Prices of pulses are expected to increase in 2020 due to increased demand from India and tighter supply due to lower production in 2019-20 and low stocks.

Table 2.2: Pulses Demand-Supply Situation in Canada

('000 tonnes)

	Total Pulses			Lentils			Dry Peas		
	2018-19	2018-19	2019-20 ^f	2018-19	2019-20	2020-21 ^f	2018-19	2019-20 ^f	2020-21 ^f
Production	6325	7022	6885	2092	2166	2150	3581	4237	4275
Imports	260	292	245	51	85	50	62	72	60
Total Supply	8145	8437	7960	3016	2882	2500	4290	4621	4635
Exports	5798	6325	5870	2033	2200	2000	3270	3650	3400
Domestic Use	1224	1282	1285	352	382	350	708	671	760
Ending Stocks	1123	830	805	631	300	150	312	300	475
Stocks-to-Use Ratio (%)	16.0	10.9	11.3	26.5	11.6	6.4	7.8	6.9	11.4
Average Price (US\$/t)				390	465-485	500-530	270	260-270	250-280

Note: ^fForecast

Source: Statistics Canada (STC) and Agriculture and Agri-Food Canada (AAFC)

Oilseeds and Products

2.7 World oilseed production declined in 2019-20 from the record production in 2018-19 due to marked drop in production of soybean in the USA due to adverse weather conditions and rapeseed output in the EU and Canada. As regards forecast for oilseeds production in 2020-21, FAO's Food Outlook June 2020 points towards tightening supply-demand situation for oilseeds and derived products in 2019-20 due to lower production of soybean and rapeseed. Tentative forecasts for 2020-21 indicate that supplies could remain tight relative to demand. Global oils/fats production is also expected to fall short of utilization leading to lower inventories in 2019-20. However, early crop forecasts for 2020-21 point to a recovery in global meal and oil production. According to the Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) and United States Department of Agriculture (USDA), world oilseed production is forecast to increase in 2020-21 largely due to higher production of soybean in USA and Brazil and canola in Australia and Ukraine. World production of vegetable oils is also expected to increase in 2020-21 due to increases in palm oil production in Indonesia and Malaysia driven by increase in area and favourable growing conditions. However, due to COVID-19 pandemic, fall in biodiesel demand in the European Union and low crude oil prices will have considerable downward impact on global oilseed and edible oil demand. Oilseed prices are forecast to fall in 2020-21 due to reduced global demand and high production. Global outlook for oilseeds and oils is given in Table 2.3.

Table 2.3: World Oil Crops and Products Market Outlook

(Million tonnes)

	FAO ^a			USDA ^b			ABARES		
	2017-18	2018-19	2019-20	2018-19	2019-20	2020-21 ^f	2018-19	2019-20	2020-21 ^f
Oilseeds									
Production	593.1	612.3	584.3	599.9	575.2	604.2	595	571	601
Supply	-	-	-	882.3	884.2	899.7	-	-	-
Utilization	-	-	-	580.6	590.8	604.9	576	582	605
Trade	159.9	175.0	179.6	170.3	178.9	185.4	175	175	181
Stocks-to-Use Ratio (%)	-	-	-	22.6	19.4	19.0	22.8	20.8	19.2
Oils and Fats									
Production	236.3	241.0	235.4	203.4	204.1	208.9	-	-	-
Supply	273.4	281.3	274.3	307.7	305.9	312.6	-	-	-
Utilization	229.5	242.2	240.9	200.4	200.4	206.0	198	197	202
Trade	126.3	132.0	131.1	85.6	83.9	86.3	-	-	-
Stocks-to-Use Ratio (%)	17.6	16.1	14.1	10.8	10.8	10.5	-	-	-

^a Includes oils and fats of vegetable, animal and marine origin; ^b Major vegetable oils include coconut, cottonseed, olive, palm, palm kernel, peanut, rapeseed, soybean and sunflower oil; ^f Forecast

Source: 1. FAO Food Outlook June 2020

2. USDA Oilseeds: World Outlook and Trade, July 2020

3. Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) Agricultural Commodities Vol 10 No 2, June quarter 2020

Domestic Market Scenario**Wheat**

2.8 Wheat production in India has increased from 99.9 million tonnes in 2017-18 to 103.6 million tonnes in 2018-19 and is likely to reach a record level of 106.2 million tonnes in 2019-20 (Table 2.4). This increase in production has led to larger build-up of wheat inventories in the country and consistently much higher stocks than buffer norms for the Central Pool. Wheat stocks in central pool were 41.8 million tonnes on June 30, 2018, which increased to 45.8 million tonnes on June 30, 2019 and reached about 55 million tonnes on June 30, 2020 against the stocking norms of 27.6 million tonnes on 1st July 2020. India's exports have been negligible during the last three years. Clearly, wheat production has outstripped demand in the recent years. The record production of wheat and larger stocks will put downward pressure on wheat prices unless export avenues open up. Since domestic price is higher than the world price and global prices are expected to remain low in 2020-21, export opportunities of wheat are limited.

Table 2.4: Domestic Supply Situation of Wheat in India

(Million tonnes)

Particulars	2017-18	2018-19	2019-20
Production	99.9	103.6	106.2*
Stocks in Central Pool**	41.8	45.8	55.0
Exports	0.3	0.2	0.2
Imports	1.6	0	0

Note: *Estimated: **as on June 30, 2018, 2019 and 2020

Source: 1. Food Corporation of India

2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare for data on production

3. National Agricultural Cooperative Marketing Federation of India for data on stocks

Pulses

2.9 After decline in 2018-19, pulses production in the country in 2019-20 is estimated to increase by about 4.2 percent, (23 million tonnes) compared to 2018-19 but still below the target of 26.3 million tonnes. Among rabi pulses, production of gram is estimated to show a marginal increase of 1.4 percent in 2019-20 in comparison to the previous year while lentil production is expected to show a large jump (17.7%), from 12.3 lakh tonnes in 2019-20 to 14.5 lakh tonnes in 2020-21. Table 2.5 shows domestic supply situation of pulses in India in the last five years. As expected, production is a major driver of total supply of pulses in the country, followed by imports, which are dependent on domestic deficits and international prices. In the recent years, total supply of pulses reached its peak in 2017-18, owing to record production of pulses and high imports. This was followed by decline in 2018-19

on account of reduced production as well as imports. However, production and imports revived in 2019-20. In 2019-20, stocks were about 8 percent higher than 2018-19 but about 9.7 lakh tonnes of whole chana/gram will be distributed under PMGKAY to all beneficiary households under the NFSA. Higher production and stocks are expected to keep prices of pulses stable and moderate.

Table 2.5: Domestic Supply Situation of Pulses in India

(Lakh tonnes)

Particulars	2015-16	2016-17	2017-18	2018-19	2019-20
Production	163.2	231.3	254.2	220.8	230.1
Imports	58.2	66.0	56.3	25.7	29.5
Exports	2.6	1.4	1.8	2.7	2.0
Public Stocks*	0.4	22.1	55.2	41.2	44.5

Source: 1. DGCIS for data on exports and imports

2. Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare for data on production

3. NAFED for data on stocks

Trends in Market Prices

2.10 The domestic market price trends have been analysed using price data compiled from AGMARKNET, which reports daily prices and market arrivals collected from APMC markets 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 weighted by daily market arrivals in the centre. All-India daily average market price has been computed by taking average of all States weighted by share of the State in total production of a crop/commodity. Finally, monthly average price at all-India level is computed by taking simple average of daily all-India prices.

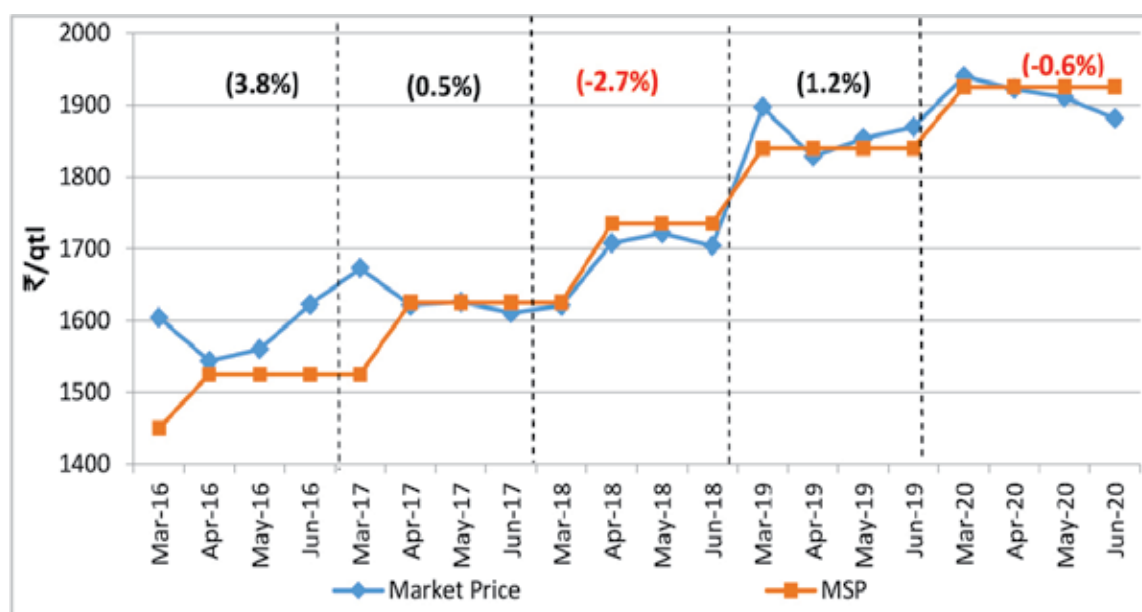
Wheat

2.11 Trends in all-India weighted average monthly market price of wheat during last five marketing seasons are shown in Chart 2.1. Average market price of wheat stayed above MSP during RMS 2016-17 and RMS 2017-18. However, the gap between market price and MSP narrowed from 3.8 percent in RMS 2016-17 to 0.5 percent in RMS 2017-18. Average market price fell below MSP by 2.7 percent during RMS 2018-19 but moved up and was 1.2 percent higher than the MSP in RMS 2019-20. Market price was very close to MSP in RMS 2020-21 and difference between the two prices was negligible. One of the reasons for marginally lower prices in some States was higher percentage of damaged, shrivelled and broken grains and lustre loss due to unseasonal rains.

Price Policy for Rabi Crops

2.12 Analysis of daily market prices in Madhya Pradesh, Uttar Pradesh and Rajasthan, major wheat-producing States accounting for about 57 percent of total production, for RMS 2020-21 is shown in Chart 2.2. Market prices in Uttar Pradesh largely remained above MSP from the start of the season until mid-April 2020 while market prices were below MSP in Madhya Pradesh during the period. There were wide fluctuations in market prices in Rajasthan. Since mid-April, market prices have tended to converge towards MSP in Uttar Pradesh but have gradually dipped below MSP in Madhya Pradesh and Rajasthan as untimely rains affected quality of wheat and value cut from MSP was imposed.

Chart 2.1: Trends in Domestic Market Prices vis-à-vis MSP of Wheat



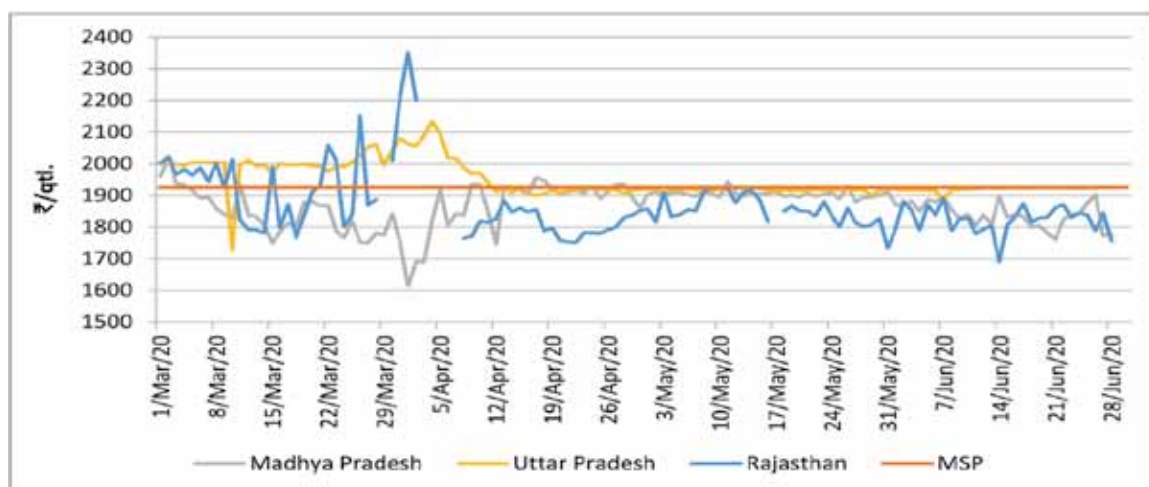
Note: 1. Market Prices are computed as weighted modal price of Haryana, Madhya Pradesh, Punjab, Rajasthan and Uttar Pradesh, which cover 86.5 percent of wheat production in India

2. Figures in parentheses show the difference between average Market Price and MSP for the 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 2.2: Comparison of Market Prices and MSP of Wheat in Madhya Pradesh, Uttar Pradesh and Rajasthan during RMS 2020-21



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

2.13 Table 2.6 provides analysis of the number of days when market prices ruled below/above MSP and average percentage difference between the two prices in selected States during RMS 2020-21. In Haryana, market prices remained equal to or above MSP on all the days for which the data were available, while in Punjab, market prices were below MSP only on one day. In contrast, market prices in Madhya Pradesh and Rajasthan on an average were 3.1 percent below MSP mainly due to low quality of grains caused by unseasonal rains in the States. For Uttar Pradesh, market prices stayed above MSP on 36.7 percent of the total days for which prices were reported and average market price was 1.2 percent higher than MSP during the season.

Table 2.6: Market Prices vis-a-vis MSP of Wheat in Major Producing States in RMS 2020-21 (March-June 2020)

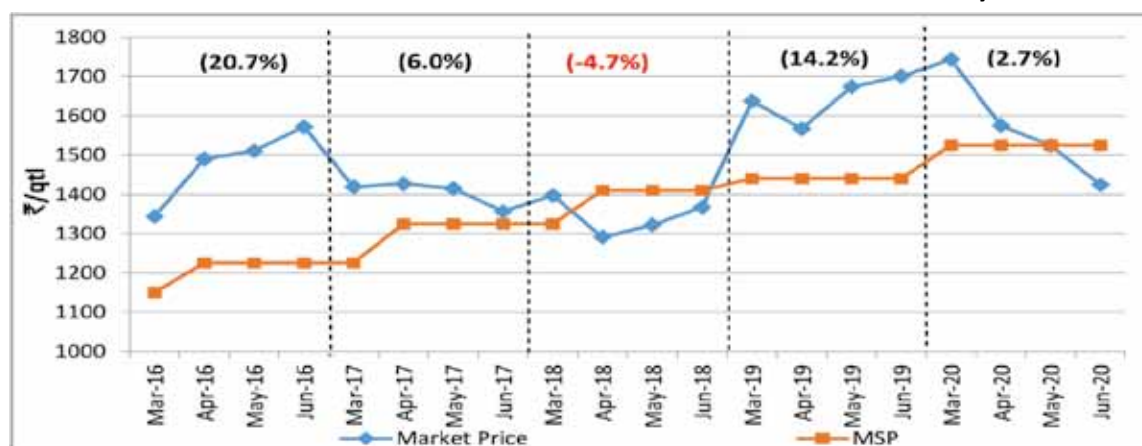
State	No. of days market price reported	No of days average market price was above/ equal to MSP	No of days average market price was below MSP				Average Difference between Market Price & MSP (%)
			< 5%	5-10%	10-15%	> 15%	
Haryana	48	48	0	0	0	0	0
Madhya Pradesh	120	14	77	26	2	1	-3.1
Punjab	48	47	1	0	0	0	-0.1
Rajasthan	113	19	51	42	1	0	-3.1
Uttar Pradesh	120	44	75	0	1	0	1.2

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

Barley

- 2.14 Market price of barley witnessed a consistent increase in RMS 2016-17 and average price was 20.7 percent above the MSP (Chart 2.3). However, market prices showed a declining trend during RMS 2017-18 and 2018-19 and fell below the MSP in April 2018. Market prices improved during RMS 2019-20 and average price was 14.2 percent higher than the MSP. However, prices recorded a steep decline in RMS 2020-21, from ₹1744 per quintal in March 2020 to ₹1424 per quintal in June 2020 and average price was 6.6 percent lower than the MSP. During the last five marketing seasons, average market price was higher than the MSP in four seasons, while in RMS 2018-19 price was lower than the MSP.
- 2.15 Chart 2.4 shows daily trends in market prices in Uttar Pradesh and Rajasthan for barley in RMS 2020-21. Market prices in Uttar Pradesh remained above MSP throughout the reference period, whereas, prices in Rajasthan were above MSP in the beginning of the season as arrivals during this period were quite low. With increase in market arrivals of grains after mid-March, market prices in the State witnessed a declining trend and were below MSP.
- 2.16 Trends of the number of days when market prices were below/above MSP in RMS 2020-21 in major producing States are shown in Table 2.7. In Rajasthan, which is the largest producer of barley, market prices remained above or equal to MSP only on 13 out of the 105 days for which prices were reported, while on 39 percent of the total days, market prices remained 10 to 15 percent lower than MSP in the State. Overall, average market price was 7.6 percent lower than MSP in Rajasthan during the season. In Madhya Pradesh, the difference between market price and MSP was (-)2.5 percent with maximum number of days reporting a gap of less than 5 percent between MSP and market price. In case of Uttar Pradesh, market prices remained higher than MSP for all days and as a result, average market price was 17.2 percent higher than the MSP during RMS 2020-21.

Chart 2.3: Trends in Domestic Market Prices vis-à-vis MSP of Barley



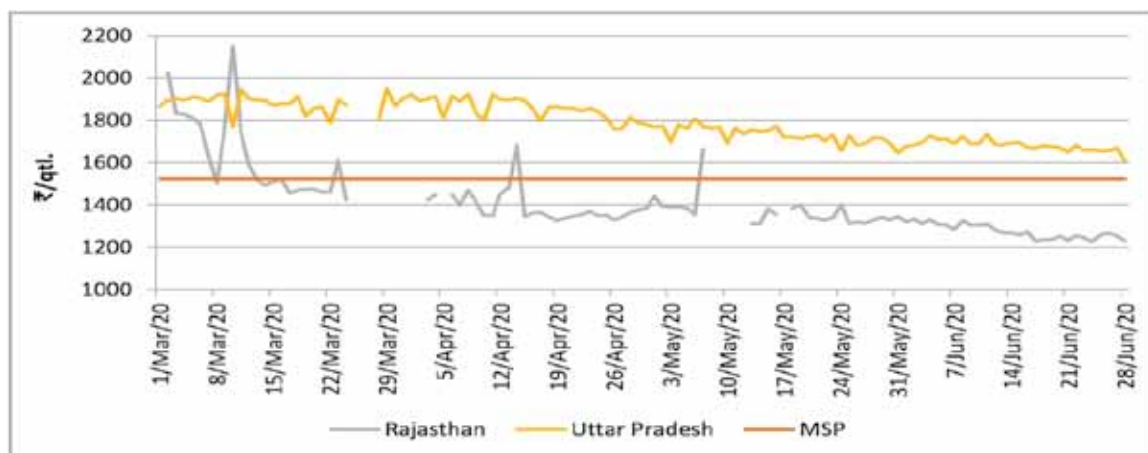
Note: 1. Market prices are computed as weighted modal price of Haryana, Madhya Pradesh, Rajasthan and Uttar Pradesh, which account for 92.6 percent of India's total barley production.

2. Figures in parentheses show the difference between Market Price and MSP for the 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 2.4: Comparison of Market Prices and MSP of Barley in Rajasthan and Uttar Pradesh during RMS 2020-21



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 2.7: Market Prices vis-a-vis MSP of Barley in Major Producing States in RMS 2020-21 (March-June 2020)

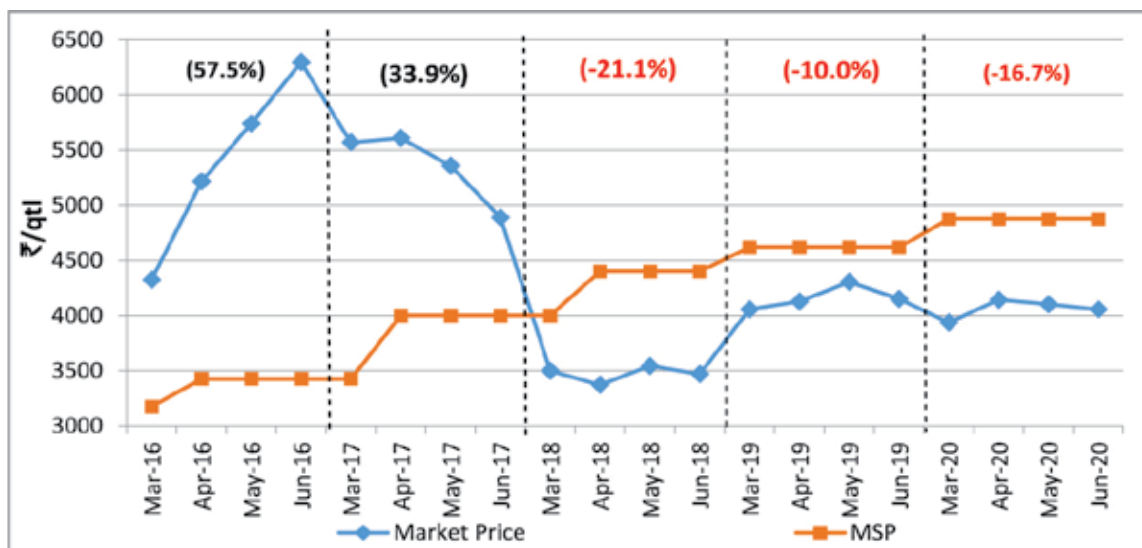
State	No. of days market price reported	No. of days average market price was above/ equal to MSP	No. of days average market price was below MSP				Average Difference between Market Price & MSP (%)
			<5%	5- 10%	10-15%	>15%	
Madhya Pradesh	82	8	48	26	0	0	-2.5
Rajasthan	105	13	18	15	41	18	-7.6
Uttar Pradesh	117	117	0	0	0	0	17.2

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

Gram

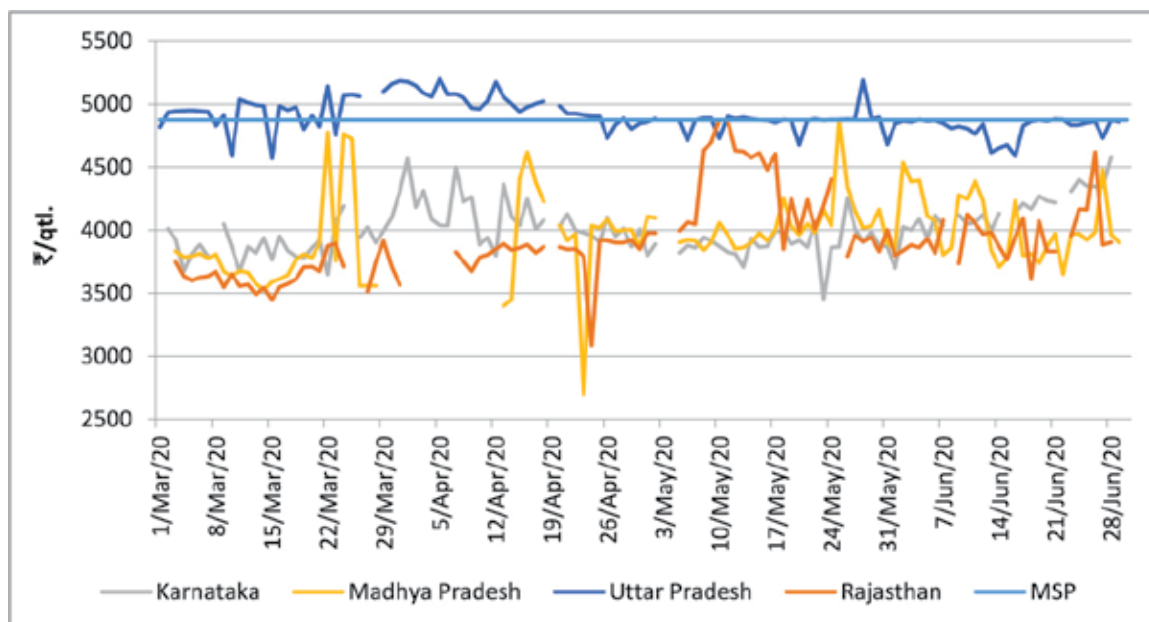
2.17 Average market price of gram was significantly higher (57.5%) than MSP during RMS 2016-17 due to low production for two consecutive years. However, gram production increased from 7.1 million tonnes in 2015-16 to 9.4 million tonnes in 2016-17 to 11.4 million tonnes in 2017-18. Two consecutive years of bumper production and higher imports of pulses, particularly yellow peas resulted in a sharp decline in market prices of gram in RMS 2017-18 but average market price remained above the MSP. During RMS 2018-19, there was a further decline in market prices and average market price of gram was (-)21.1 percent below the MSP. In RMS 2019-20, market prices improved and average price was ₹4160 per quintal but still below (-10%) the MSP. However, market prices again showed a declining trend during RMS 2020-21 and average market price of gram was 16.7 percent lower than the MSP of ₹4875 per quintal.

- 2.18 Chart 2.6 compares market prices of gram with MSP in three major gram producing States viz. Rajasthan, Madhya Pradesh and Karnataka during RMS 2020-21. It is evident from the Chart that market prices remained below MSP in all the three States during the season. However, variations in daily prices were much larger in Madhya Pradesh than the other two States. In Rajasthan, although prices were consistently below MSP but there was some improvement in prices in the second week of May but again showed a declining trend. Market prices ruling consistently below MSP during peak market arrivals does not augur well for the long-term growth trajectory of pulses production. Over the past few years, the MSP of pulses have been substantially increased to incentivize a shift of cropping pattern from cereals to pulses. This was in keeping with the Government's stated objective of achieving self-sufficiency in pulses production, keeping pace with the increasing demand for protein in Indian dietary pattern and encouraging cultivation of ecologically-friendly crops. However, announcement of high MSP without being supported by robust procurement systems slackens the pace of achieving the objective of promoting rational cropping patterns.
- 2.19 Among the major gram producing States, market prices remained above or equal to MSP in Uttar Pradesh during RMS 2020-21 (Table 2.8). For Karnataka, Madhya Pradesh and Rajasthan, market prices were below MSP by 15 percent or more on most days and average difference between market price and MSP in these States was (-)17.8 percent, (-)18.8 percent and (-)19.5 percent, respectively.

Chart 2.5: Trends in Domestic Prices vis-à-vis MSP of Gram

Note: 1. Market prices are computed as weighted modal price of Andhra Pradesh, Chhattisgarh, Gujarat, Karnataka, Madhya Pradesh, Maharashtra and Uttar Pradesh, which cover 94.3 percent of India's total production. 2. MSP is inclusive of bonus. 3. Figures in parentheses show the difference between average Market Price and MSP for the 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 2.6: Comparison of Market Prices and MSP of Gram in Karnataka, Madhya Pradesh Uttar Pradesh and Rajasthan during RMS 2020-21

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 2.8: Market Prices vis-a-vis MSP of Gram in Major Producing States in RMS 2020-21 (March- June, 2020)

State	No of days market prices reported	No of days market prices were above/ equal to MSP	No. of days average market price was below MSP				Average Difference between Market Price & MSP (%)
			<5%	5-10%	10-15%	>15%	
Karnataka	111	0	0	4	18	89	-17.8
Madhya Pradesh	102	0	4	6	12	80	-18.8
Rajasthan	106	2	3	7	5	89	-19.5
Uttar Pradesh	116	66	46	4	0	0	0.6

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

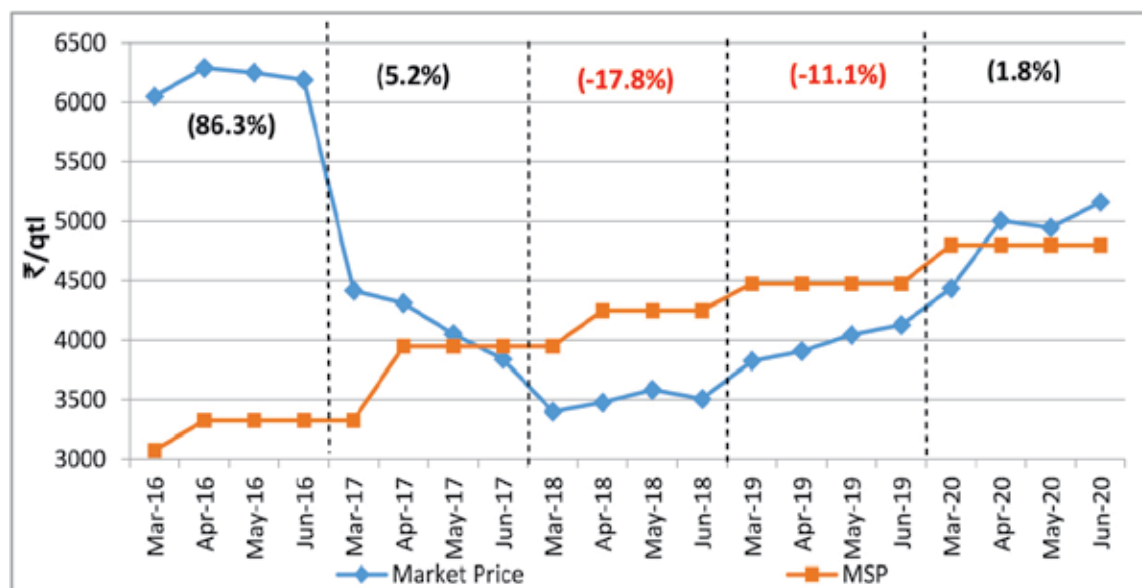
Lentil

2.20 Average market price of lentil was 86.3 percent higher than MSP during RMS 2016-17 but market prices declined in RMS 2017-18 and the gap between market price and MSP reduced to 5.2 percent. During RMS 2018-19, market prices fell below MSP

and averaged ₹3492 per quintal, (-) 17.8 percent lower than the MSP. In RMS 2019-20, there was some recovery in market prices and gap between average market price and MSP reduced to (-)11.1 percent. During RMS 2020-21, market prices showed further improvement and average price was 1.8 percent higher than MSP. After two consecutive years of market prices below the MSP, lentil prices improved during the current season and moved above the MSP.

2.21 Chart 2.8 shows daily market price trends in lentil for Madhya Pradesh and Uttar Pradesh during RMS 2020-21. Market prices in Madhya Pradesh remained much lower than MSP during the start of the marketing season but improvement in market prices was observed around mid-April leading to convergence with MSP in the month of May. Market prices further improved in the State in month of June and were above MSP. In case of Uttar Pradesh, market prices fluctuated around the MSP during the start of the season but consistently remained above the MSP thereafter. Overall, average market price was marginally below MSP in Madhya Pradesh, while in Uttar Pradesh market price was 4.6 percent higher than the MSP Pradesh during the current marketing season (Table 2.9).

Chart 2.7: Trends in Domestic Market Prices vis-à-vis MSP of Lentil



Note: 1. Market prices are computed as weighted modal price of Chhattisgarh, Jharkhand, Madhya Pradesh, and Uttar Pradesh, which cover 73.5 percent of total production.

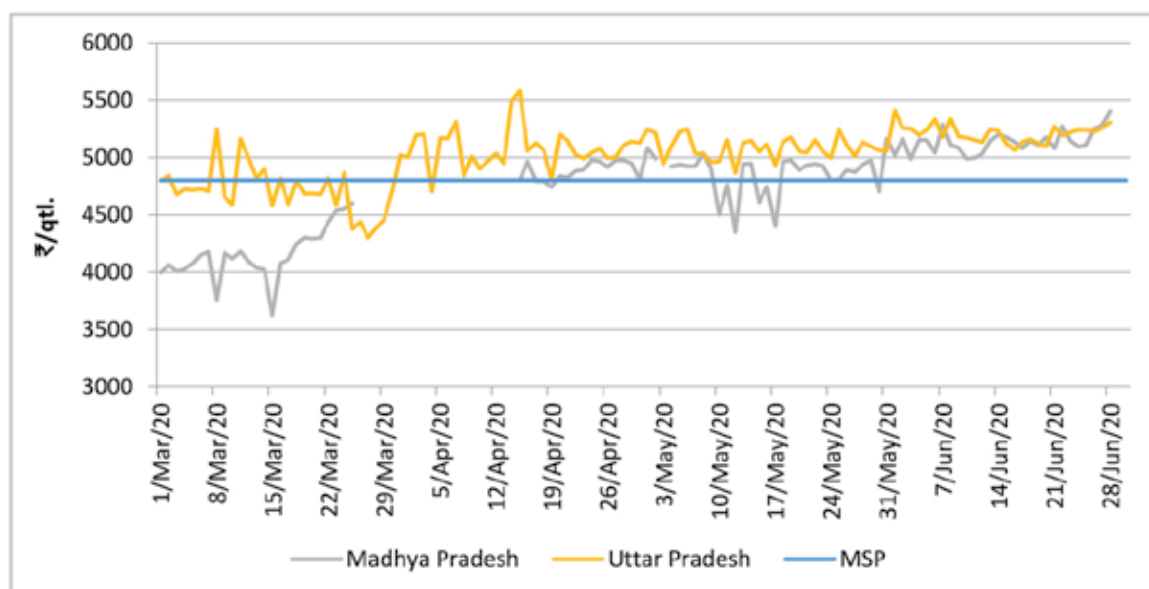
2. MSP is inclusive of bonus.

3. Figures in parentheses show the difference between average Market Price and MSP for the 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 2.8: Comparison of Market Prices and MSP of Lentil in Madhya Pradesh and Uttar Pradesh during RMS 2020-21



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 2.9: Market Prices vis-a-vis MSP of Lentil in Major Producing States in RMS 2020-21 (March-June 2020)

State	No. of days market price reported	No. of days average market price was above/equal to MSP	No. of days average market price was below MSP				Average Difference between Market Price & MSP (%)
			<5%	5- 10%	10- 15%	> 15%	
Madhya Pradesh	100	64	8	7	11	10	-0.8
Uttar Pradesh	120	98	17	4	1	0	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

Rapeseed & Mustard

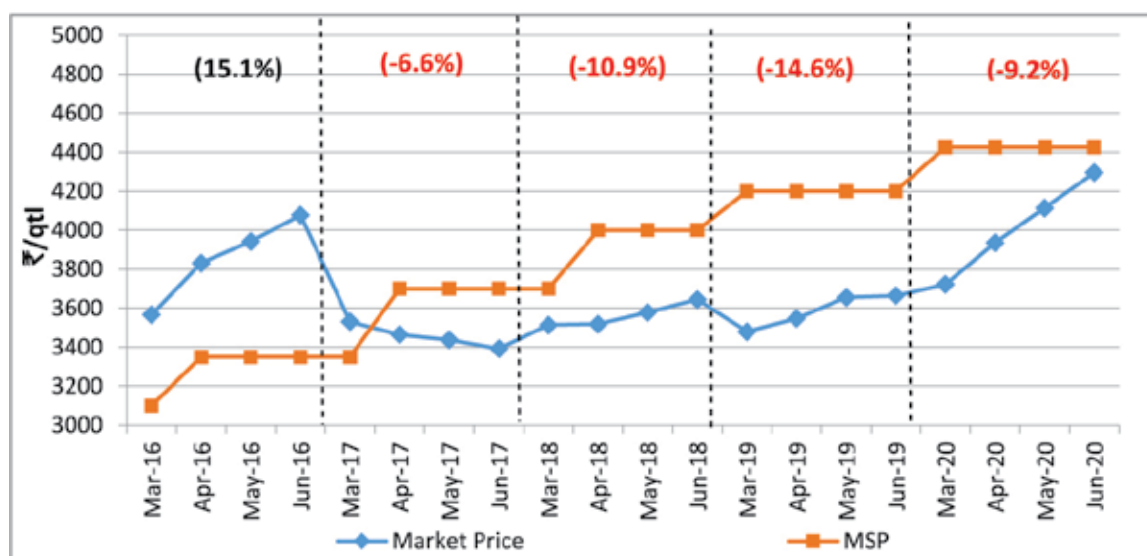
2.22 Market price of Rapeseed & Mustard (R&M) was significantly higher (15.1%) than MSP during RMS 2016-17 but fell below the MSP in RMS 2017-18 (Chart 2.9). There was slight improvement in market prices in RMS 2018-19, but due to higher increase in MSP, gap between average market price and MSP increased to (-)10.9 percent, which further widened to (-)14.6 percent in RMS 2019-20. During RMS 2020-21, the

Price Policy for Rabi Crops

average market price for R&M showed an improvement and was ₹3916 per quintal compared to ₹3586 per quintal in RMS 2019-20 and the gap between market price and MSP reduced to (-)9.2 percent.

- 2.23 Comparison between daily market prices and MSP for R&M in Rajasthan and Uttar Pradesh during RMS 2020-21 shows that although market prices remained below the MSP in both the States, the gap between the two prices has narrowed (Chart 2.10). In case of Haryana, market prices remained below the MSP at the start of the season but converged towards MSP during April-June. The average difference between market price and MSP for RMS 2020-21 was (-)10.1 percent for Rajasthan and Uttar Pradesh (Table 2.10). The largest difference (-12.4%) was observed in Madhya Pradesh with more than 15 percent difference on 32 percent of the reported days.

Chart 2.9: Trends in Domestic Market Prices vis-à-vis MSP of R&M



Note: 1. Market prices are computed as weighted modal price of Chhattisgarh, Gujarat, Haryana, Jharkhand, Madhya Pradesh, Rajasthan, Uttar Pradesh and West Bengal, which cover 91.8 percent of India's total production.

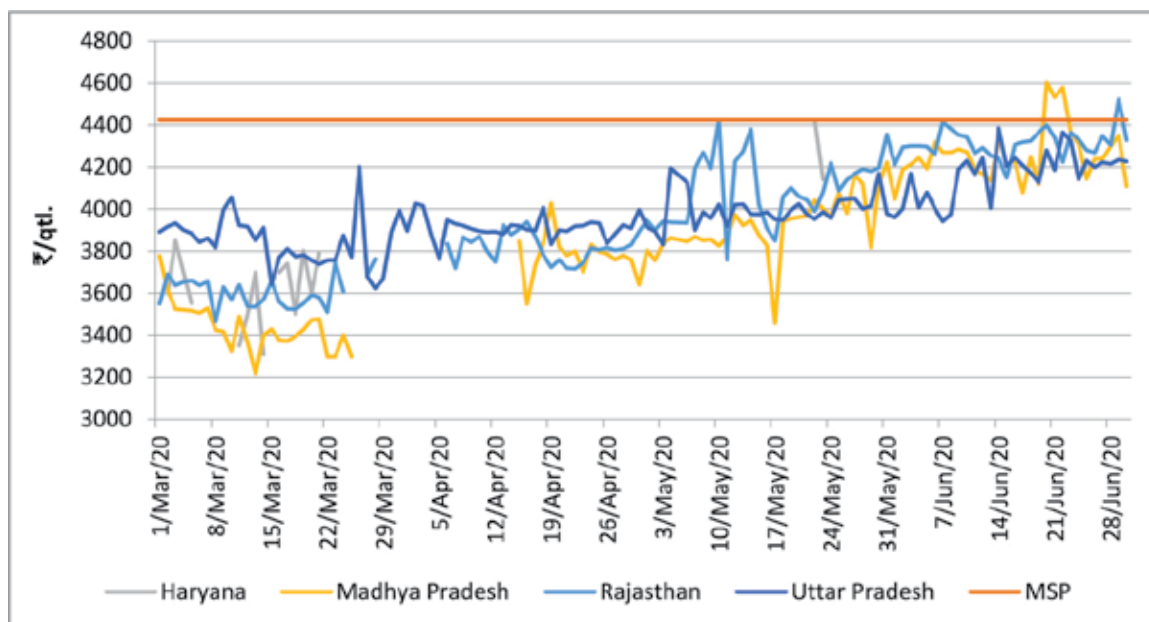
2. MSP is inclusive of bonus.

3. Figures in parentheses show the difference between average Market Price and MSP for the 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 2.10: Comparison of Market Prices and MSP of R&M in Haryana, Rajasthan and Uttar Pradesh during RMS 2020-21



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 2.10: Market Prices vis-a-vis MSP of R&M in Major Producing States in RMS 2020-21 (March-June 2020)

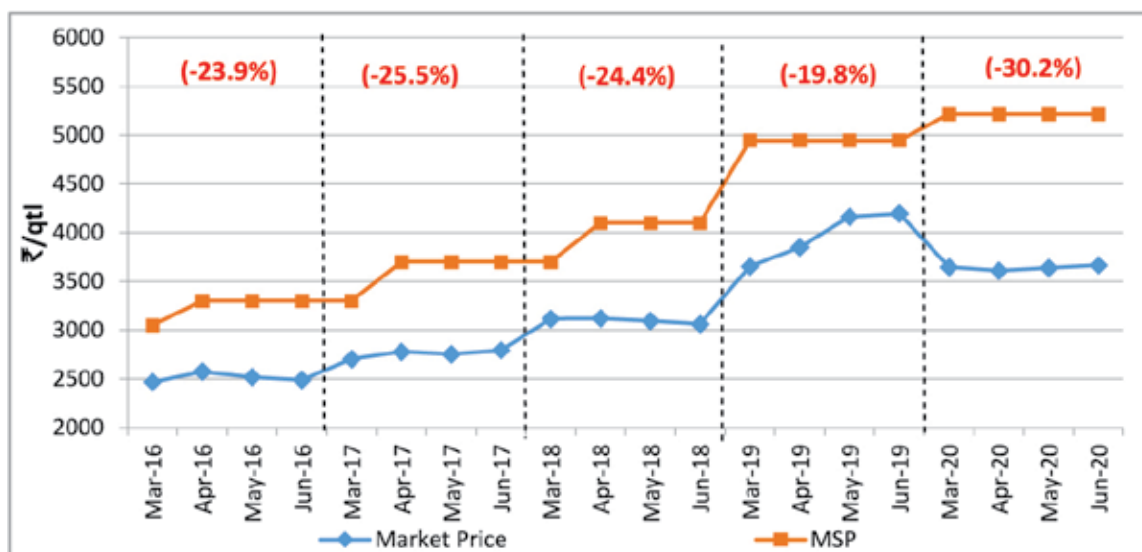
States	No. of days market price reported	No. of days average market price was above/equal to MSP	No. of days market prices was below MSP				Average Difference between Market Price & MSP (%)
			<5%	5-10%	10-15%	>15%	
Haryana	53	36	0	2	3	12	-5.3
Madhya Pradesh	100	3	17	17	31	32	-12.4
Rajasthan	111	2	34	16	26	33	-10.1
Uttar Pradesh	121	0	13	38	62	8	-10.1

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

Safflower

- 2.24 Despite several health benefits of safflower oil due to higher amounts of oleic and linoleic acids, market prices of safflower seed have remained low during the last five marketing seasons and were much below the MSP (Chart 2.11). The market prices of safflower registered a steady rise during RMS 2016-17 and RMS 2019-20 but increase was not sufficient to bridge the gap with MSP. Moreover, in RMS 2020-21, there has been a significant decline in market price, from ₹3964 per quintal in RMS 2019-20 to ₹3639 per quintal in RMS 2020-21. This has resulted in widening of the gap between average market price and MSP from (-)19.8 percent in RMS 2019-20 to (-)30.2 percent in RMS 2020-21.
- 2.25 Chart 2.12 compares daily market prices with the MSP for RMS 2020-21 in Karnataka, the largest producer of safflower. As can be seen from the Chart, market prices of safflower were significantly lower than MSP throughout the season.

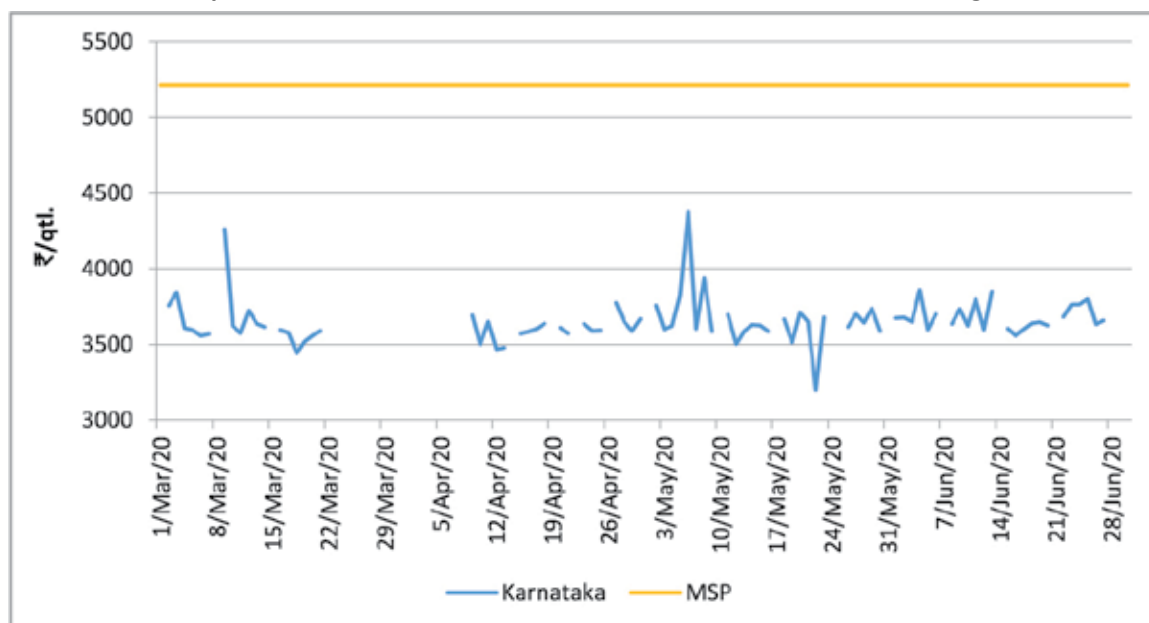
Chart 2.11: Trends in Domestic Market Prices vis-à-vis MSP of Safflower



Note: 1. Market prices are computed as weighted modal price of Karnataka and Maharashtra, which cover 82.5 percent of India's total production. 2. MSP is inclusive of bonus. 3. Figures in parentheses show the difference between average Market Price and MSP for the 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 2.12: Comparison of Market Prices and MSP of Safflower in Karnataka during RMS 2020-21



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

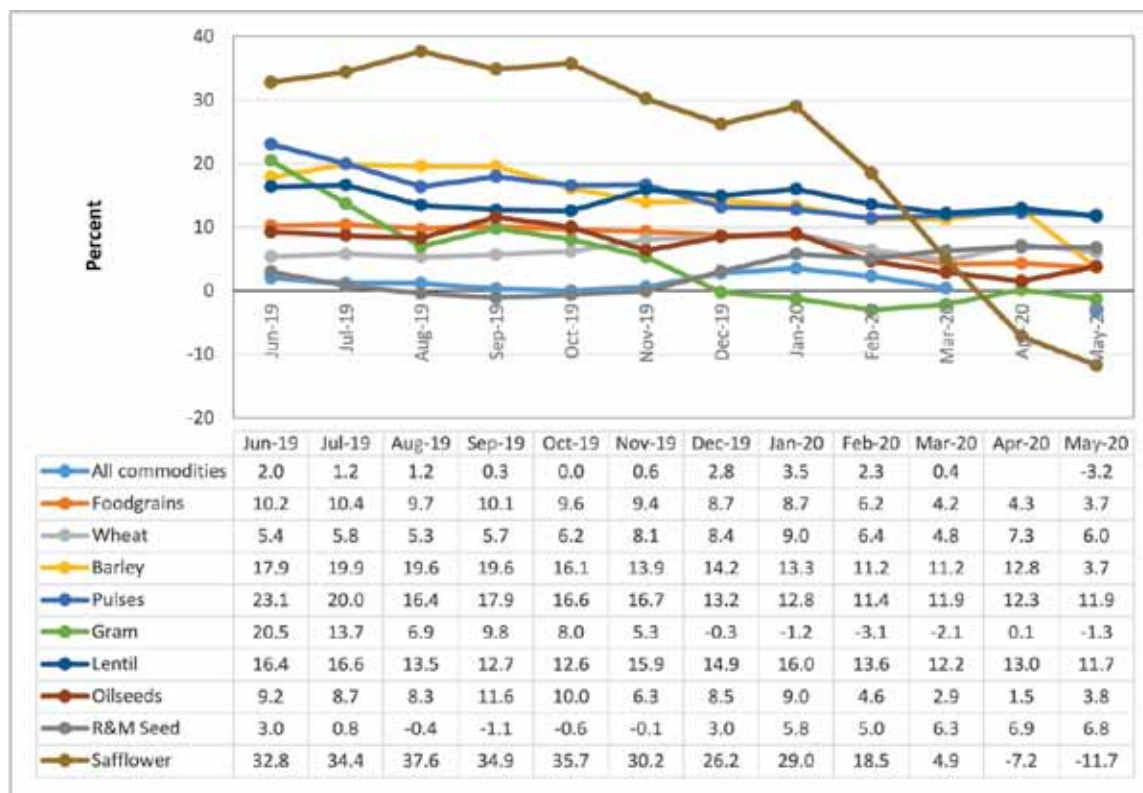
Trends in Prices and Inflation based on WPI

- 2.26 Apart from ensuring remunerative and stable prices to farmers, there is an equal need to ensure supplies at reasonable prices to consumers not only to protect the consumer's interests but also to remain globally competitive. This section examines the recent trends in inflation in food commodities in India.
- 2.27 The Wholesale Price Indices (WPI, base 2011-12=100) for food articles and foodgrains were 156.6 and 161.2, respectively, for the period July 2019-June 2020, increasing by 7.6 percent and 8.0 percent, respectively, over the corresponding period of previous year, vis-a-vis the overall inflation of 0.5 percent. The annual rate of inflation, based on monthly WPI, during the past year (July 2019 to June 2020) for all commodities as well as major rabi agricultural commodities is presented in Chart 2.13. It is evident from the Chart that annual rate of inflation for all commodities was significantly lower than food articles and foodgrains. There has been an increase during the first half followed by dip during the second half for all agricultural commodities and groups except wheat and rapeseed & mustard seed. The average annual increase in WPI for food articles that ranged between 6.6 to 13.3 percent during July to December 2019 and declined continuously during first five months of 2020 but rose to 2.04 percent in June 2020.
- 2.28 Within foodgrains, the average annual increase of WPI for wheat for the year was 6.4 percent and the monthly increases hovered around this, with the highest increase of 9 percent during January 2020 and the lowest increase of 4.8 percent

in March 2020. In case of rice, the average annual increase was 3.5 percent and there was steady decline after December 2019, reaching 1.2 percent in May 2020 but increased to 4.5 percent in June 2020. Other cereals, namely, jowar, bajra, maize and barley, showed a different trend and average annual increase was about 12.4 percent for barley to 19.5 percent for maize. Jowar (19.1%) and bajra (17.3%) recorded significantly higher rate of inflation during the year. However, there was a steady decline during 2020 and reached negative for bajra (-9.8%) and maize (-14.7%) in June 2020.

- 2.29 In respect of pulses, the trend was similar; the average annual increase that was in the range of 13.2 to 20.0 percent during July to December 2019 reduced to the range of 10.1 to 14.6 percent from January to June 2020. Inflation for pulses was mainly driven by very high inflation of urad (36.1%), arhar (23.5%), moong (23.6%) and lentil (13.9%). The distinct price behaviour of foodgrains in general and maize and nutri-cereals in particular and gram, of decline in the recent months is a cause for concern.
- 2.30 In case of oilseeds, a similar trend of increase in inflation during the first half of the year followed by dip during the second half was observed. The average inflation rate year-on-year for oilseeds varied from 6.3 to 11.6 percent during July to December 2019, declined continuously from January to April 2020, increased in May (3.8%) but again fell in June (3.2%). Groundnut seed, sesamum, nigerseed and safflower recorded double-digit rate of inflation during the last one year. For rapeseed & mustard, major rabi oilseed, the average inflation rate was negative during August-November 2019 and hovered in the range of 5-7.3 percent during January to June 2020.
- 2.31 For almost all agricultural commodities, viz., food articles, foodgrains, cereals and rabi mandate crops, namely, wheat, barley, gram, rapeseed & mustard and safflower, price level during the first six months of 2020 has shown a general downtrend but increased in June for lentil, rapeseed & mustard and food articles. For foodgrains group, the wholesale price index fell from 165 in January 2020 to 160 in June 2020, and for food articles, it declined from 160.5 to 155.3 during this period. Overall, all mandate commodities have registered similar decline and the only exception has been lentil where the index has moved up from 147.9 in January to 155.1 in June 2020. The overall price movements point to developing some inflationary trends in pulses. However, it should be kept in mind that rate of inflation for pulses based on both WPI and CPI was in negative zone during 2017 and 2018 and currently market prices of most pulses are below the MSP. The WPI index for major agricultural commodities and groups/sub-groups for the last five years are given in Annex Table 2.1.

Chart 2.13: Trends in WPI based Inflation for Important Agricultural Commodities/Groups



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

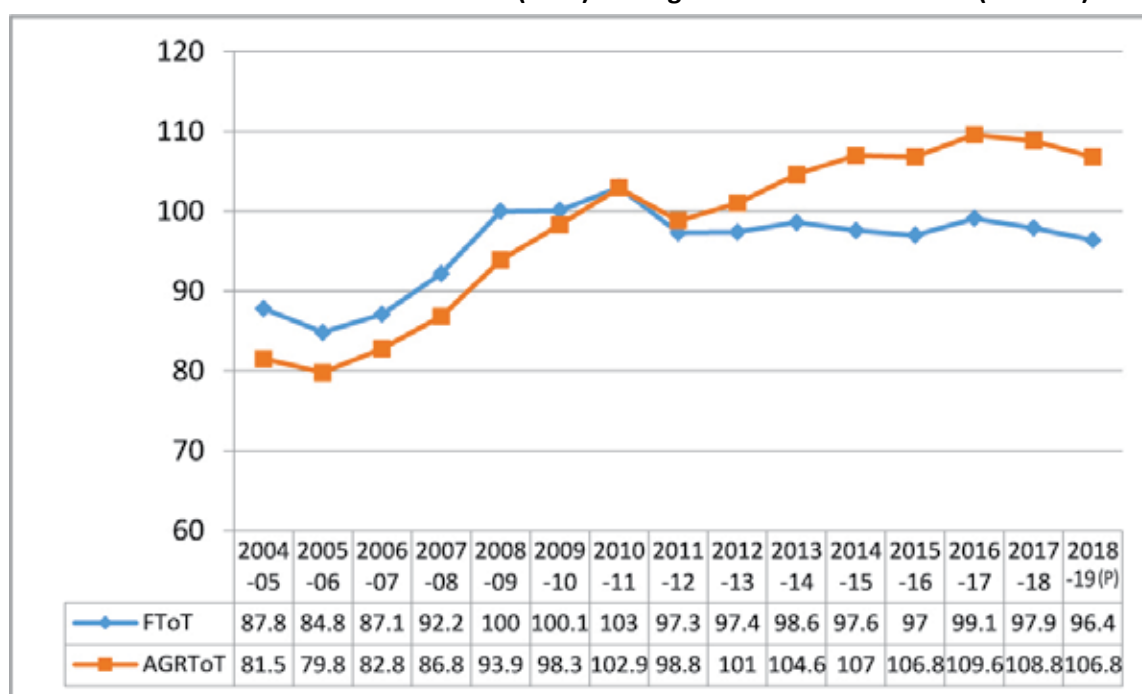
Trends in Terms of Trade

- 2.32 Terms of Trade (ToT) refer to the ratio of prices in agricultural sector to non-agricultural sector and is a good indicator of relative prices. ToT between agriculture and non-agricultural sector is calculated as the ratio of the combined indices of prices received in agriculture (prices of agricultural products) to the combined indices of prices paid for different items purchased for agriculture like farm inputs. Similarly, index of Terms of trade (ToT) between farmers and non-farmers is a ratio of the index of prices received by the farmers to the prices paid by them (and received by non-farmers). If the price index of agricultural goods is higher vis-à-vis non-agricultural goods, the ToT index is more than 100 and is said to be favourable to agriculture. Sustained increases in agricultural ToT augur well for monetary surplus and hence, private investments in agriculture.
- 2.33 Chart 2.14 presents the index of terms of trade (ToT) between farmers and non-farmers and between agriculture and non-agriculture since 2004-05 (Base: 2011-12). ToT for farmers increased significantly over the period 2005-06 (84.8) to 2010-11 (103.0), by an average increase of 21.4 percent. ToT for agriculture sector also rose by 28.9 percent during the same period. Factors such as significant increase in minimum support prices, rise in global agricultural prices and high food inflation were responsible for this improvement in terms of trade towards agriculture. The

increase in ToT for farmers also reflected in substantial increase in private investment during this period.

- 2.34 However, since 2011-12, the ToT have in general been relatively unfavourable for farmers, trending below the threshold of 100. In contrast, ToT for agricultural sector have been above the threshold of 100 since 2012-13. It is also seen that after 2012-13, the gap between the two measures i.e. ToT for farmers and ToT for agricultural sector has widened. In order to improve the ToT for farmers, there is a need to improve marketing and storage infrastructure, stepping up public investment in agriculture along with a stable and predictable export-import policy for agricultural goods.

Chart 2.14: Farmers' Terms of Trade (FToT) and Agriculture Terms of Trade (AGRToT)



Note: P: Provisional

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

Procurement Policy and Operations

- 2.35 The Central Government provides price support to farmers through the Food Corporation of India (FCI), National Agricultural Cooperative Marketing Federation of India Ltd (NAFED) and other Central and State Agencies across the country. The objectives of foodgrains procurement policy are to ensure remunerative price of produce to farmers, provide foodgrains to consumers at affordable prices and build buffer stocks of foodgrains to ensure foodgrains security and effective market intervention to keep the prices under check. Procurement under MSP is open ended, i.e., there is no ceiling on the quantity of produce procured from farmers within the stipulated procurement period and conforming to Fair Average Quality

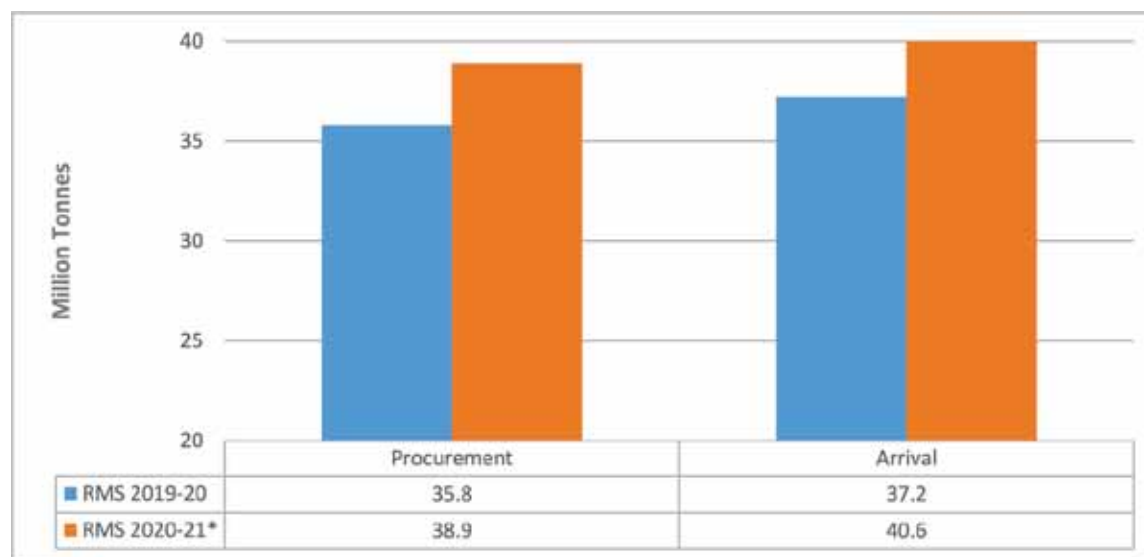
(FAQ) norms. FCI is the nodal Central agency of Government of India and undertakes procurement of wheat and paddy along with other State agencies. Procurement of nutri/coarse cereals is done by State government agencies for central pool as per the directions issued by Government of India from time to time. National Agricultural Cooperative Marketing Federation of India Ltd (NAFED) undertakes procurement of oilseeds and pulses under Price Support Scheme (PSS), if market price of a commodity falls below the MSP.

- 2.36 In 1997-98, decentralized procurement (DCP) policy was introduced to improve efficiency of procurement operations, expand procurement in non-traditional States and crops, thereby increasing benefits of MSP to local farmers and to reduce transit losses and costs. Under DCP, the State government or its agencies procure, store and distribute (against allocation for NFSA/TPDS and OWS) within the State and excess stocks are handed over to FCI in central pool. The expenditure incurred by the State government on procurement, storage and distribution of DCP stocks are reimbursed by Government of India on the laid down principles. At present, 15 States for rice and 7 States for wheat are under the DCP system and the list of DCP States is given in Annex Table 2.2.

Wheat

- 2.37 There has been a significant increase in procurement of wheat during the last five years. Procurement of wheat increased from 23 million tonnes in RMS 2016-17 to 35.8 million tonnes in RMS 2018-19 but marginally declined during RMS 2019-20. Wheat procurement reached a record level of 38.9 million tonnes in RMS 2020-21, about 12 percent higher than last season. During the last 10 years, wheat procurement recorded an average year-on-year growth of 5.9 percent, whereas, production increased by only 2.5 percent.
- 2.38 On 25th March 2020, due to the COVID-19 pandemic, the Central Government imposed nationwide lockdown of 21 days, which was later extended. During the lockdown period, disruptions to supply chains and logistics created risks to agricultural commodity markets. Migration of workers and labourers adversely affected harvesting and marketing operations of agricultural crops. However, wheat procurement reached all-time high of 38.9 million tonnes in RMS 2020-21 and total market arrivals increased by 9.3 percent in RMS 2020-21 compared to last season (Chart 2.15). Among major States, Madhya Pradesh and Rajasthan witnessed a significant increase in market arrivals as well as procurement in 2020-21, while Haryana recorded a significant decline in both procurement and market arrivals. Other two major wheat producing States, Uttar Pradesh and Punjab recorded decline in procurement and arrivals.

Chart 2.15: Wheat Arrivals and Procurement in RMS 2019-20 and RMS 2020-21



*As on 07.07.2020

Source: Food Corporation of India

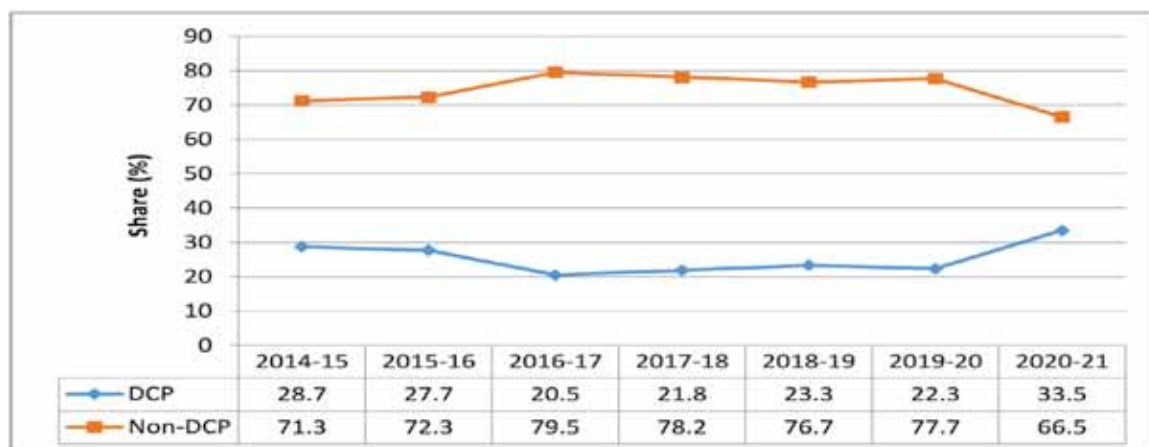
- 2.39 Further, number of farmers benefitted from procurement operations in wheat during RMS 2020-21 stood at around 43.3 lakh as on July 7, 2020, highest in the last five years. This was due to concerted efforts of the Central and State Governments to facilitate smooth procurement operations in RMS 2020-21 in order to provide price support to farmers in midst of the COVID-19 pandemic. To facilitate wheat procurement, number of procurement centres was increased from 14,838 in RMS 2019-20 to 21,633 in RMS 2020-21, about 46 percent increase. The distribution of number of farmers benefitting from procurement operations in leading States is shown in Chart 2.16. Number of beneficiary farmers stood at 15.9 lakh in Madhya Pradesh during RMS 2020-21, nearly 40 percent increase over the last marketing season. The number of beneficiary farmers increased by 26.3 percent in Punjab and 113.7 percent in Rajasthan in RMS 2020-21. However, number of beneficiary farmers declined by 12 percent in Uttar Pradesh and 13.4 percent in Haryana.
- 2.40 Uttar Pradesh, the largest wheat producing State of the country, has witnessed a continuous and significant decline in number of farmers benefitted from procurement operations during the last two marketing seasons. One of the reasons for this decline was higher price and prompt payment offered by private traders to farmers. Haryana also witnessed a fall in number of farmers benefitting from procurement operations in RMS 2020-21. The possible reasons for this decline were reduction in the number of farmers from neighbouring States particularly Uttar Pradesh bringing their produce for sale in Haryana due to the inter-State travel restrictions imposed by lockdown and some farmers preferred to retain their produce for self-consumption due to the uncertainty caused by COVID-19 pandemic.

Chart 2.16: Number of Farmers Benefitted from Procurement Operations in Major Wheat Producing States

*As on 07.07.2020

Source: Food Corporation of India

2.41 Chart 2.17 shows the share of DCP and non-DCP States in total procurement of wheat. Share of DCP States in procurement of wheat was the highest (28.7%) in 2014-15. However, there was a steep decline in share of DCP States in the next two years and was 20.5 percent in 2016-17, mainly due to fall in procurement in Madhya Pradesh from 73.1 lakh tonnes in RMS 2015-16 to 40 lakh tonnes in RMS 2016-17. Thereafter, procurement of wheat rose sharply in Madhya Pradesh in the next two seasons and reached 73.1 lakh tonnes in RMS 2018-19. This resulted in an increase in share of DCP States to 23.3 percent in RMS 2018-19. In RMS 2019-20, there was a marginal increase in share of non-DCP States due to 6.2 percent increase in procurement in Haryana and decline in procurement in Madhya Pradesh. In RMS 2020-21, share of non-DCP States was 66.5 percent driven by lower procurement in Haryana (-20.6%), and Uttar Pradesh(-4%) and significant rise (92.3%) in procurement in Madhya Pradesh.

Chart 2.17: Share of DCP and Non-DCP States in Total Procurement of Wheat

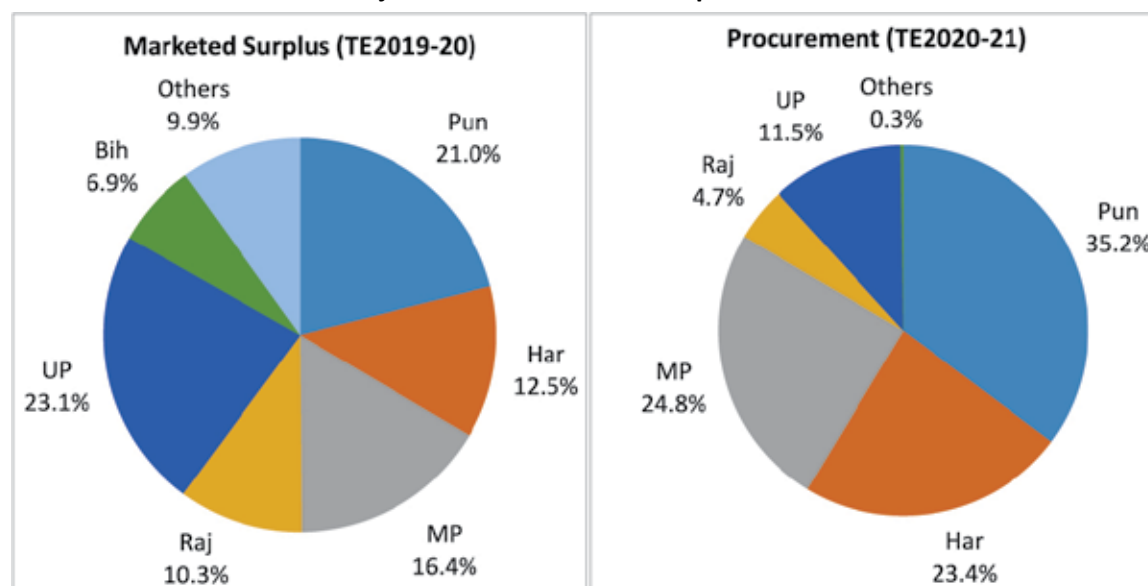
Note: *Figures reported as on 06.07.2020 for RMS 2020-21

Source: Food Corporation of India

Procurement vis-à-vis Production/Marketed Surplus

2.42 Chart 2.18 shows the share of major States in marketed surplus and procurement of wheat. Punjab accounted for 21 percent of total marketed surplus of wheat in the country but its share in procurement was 35.2 percent. Haryana, which contributes around 11.4 percent of total wheat production and 12.5 percent of marketed surplus, had a much larger share in procurement at 23.4 percent. Uttar Pradesh, the largest wheat producer in the country, contributed only 11.5 percent to the total wheat procurement, even though it had the largest marketed surplus share of 23.1 percent. Madhya Pradesh was the third largest contributor in wheat procurement with a share of 24.8 percent in total procurement during TE2020-21. The share of Rajasthan in total procurement (4.7%) was less than half of its share in total marketed surplus (10.3%) and production (9.5%). Bihar, which has 6.9 percent share in marketed surplus, had a very negligible share in procurement. Therefore, efforts are needed to strengthen procurement operations in the State to ensure remunerative prices to farmers.

Chart 2.18: Share of Major States in Marketed Surplus and Procurement of Wheat



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

2.43 Table 2.11 shows procurement and procurement as percent of production and marketed surplus of wheat in leading wheat producing States during RMS 2018-19 to RMS 2020-21. Madhya Pradesh surpassed Punjab to become the second largest wheat producer and the largest contributor to procurement in the country this year, taking over the top ranking in procurement for the first time in the history. Madhya Pradesh recorded the highest increase (92.2%) in procurement from 67.3 lakh tonnes in RMS 2019-20 to 129.3 lakh tonnes in RMS 2020-21. Punjab was the second largest contributor with total procurement of 127.1 lakh tonnes,

marginally lower than the last season. Nearly 70 percent of total wheat production was procured by government agencies in both States. In case of Haryana, there was a significant decline in procurement, from 93.2 lakh tonnes in RMS 2019-20 to 74 lakh tonnes in RMS 2020-21, a decline of 20.6 percent. Uttar Pradesh, the largest producer of wheat, also registered a decline in procurement and only 11.1 percent of the total wheat produced in the State was procured. Rajasthan recorded a significant increase in wheat procurement during RMS 2020-21, 57.9 percent higher than the last season. In Bihar, which contributes nearly 6 percent to total wheat production, Government procurement has been negligible due to institutional and infrastructure constraints.

- 2.44 At all-India level, total wheat procurement increased from 34.1 million tonnes in RMS 2019-20 to 38.9 million tonnes in RMS 2020-21 and procurement as percentage of total production increased from 32.9 percent to 36.3 percent and of marketed surplus from 44.7 percent to 49.2 percent during the corresponding period. It is evident from the above analysis that Government has become the single largest buyer and virtually a monopsonist in wheat market in major producing States like Punjab, Madhya Pradesh and Haryana, procuring about 76-95 percent of marketed surplus, which is leading to excess stocks and is crowding out private trade.

Table 2.11: Procurement of Wheat in Leading Wheat Producing States

(Lakh tonnes)

State	Procurement (RMS 2018-19)			Procurement (RMS 2019-20)			Procurement (RMS 2020-21)*		
	Total	% of Prod.	% of Marketed Surplus	Total	% of Prod.	% of Marketed Surplus	Total	% of Prod.	% of Marketed Surplus
Madhya Pradesh	73.1	46.0	62.5	67.3	40.7	55.3	129.3	69.6	94.6
Punjab	126.9	71.2	80.2	129.1	70.7	79.7	127.1	69.8	78.7
Haryana	87.8	81.6	100	93.2	74.1	91.9	74.0	61.3	75.9
Rajasthan	15.3	16.4	20.9	14.0	13.9	17.7	22.1	21.0	26.8
Uttar Pradesh	52.9	16.6	30.3	37.0	11.3	20.6	35.5	11.1	20.2
Bihar	0.2	0.3	0.4	0.3	0.5	0.6	0.1	0.1	0.1
All India	358.0	35.8	48.6	341.3	32.9	44.7	389.4	36.3	49.2

Note: *Reported as on 03.07.2020

Source: Food Corporation of India

Pulses

- 2.45 NAFED is one of the Central Nodal Agencies for procurement of pulses and oilseeds under the Price Support Scheme (PSS). During last few years, there has been a significant increase in procurement of pulses in the country under the PSS, which has led to improvement in market prices. In RMS 2020-21, procurement of

pulses under PSS was higher compared to RMS 2019-20 and 20.7 lakh tonnes of rabi pulses were procured as on 1st July 2020 as compared to 8.8 lakh tonnes in RMS 2019-20. In terms of beneficiaries, about 10.7 lakh farmers benefitted from procurement operations of pulses in RMS 2020-21 compared with 4.4 lakh farmers in RMS 2019-20. Madhya Pradesh had the highest number of farmers benefitted from procurement of pulses during the last three years and about 13.4 lakh farmers were benefitted in the State. In RMS 2020-21, the number of beneficiary farmers under procurement operations was 1.23 lakh in Karnataka, 2.37 lakh in Rajasthan and about 72 thousand in Andhra Pradesh. The State-wise breakup of number of farmers benefitted during the last three seasons is given in Annex Table 2.3.

- 2.46 Table 2.12 shows the procurement figures for gram and lentil, major rabi pulses, for the last three marketing seasons. Procurement of gram fell sharply during RMS 2019-20 due to recovery in market prices but average market price remained about 10 percent below the MSP. Procurement of gram increased during the RMS 2020-21 and total procurement as on 1st July 2020 was about 20.7 lakh tonnes. The share of procurement as percent of total production ranged from 5 percent in Uttar Pradesh to 27.1 percent in Madhya Pradesh, with all-India average of about 19 percent, which is much lower than the existing procurement limit of 25 percent of production. The State governments have been demanding enhancement of procurement limit from 25 percent to 50 percent but it is evident from the above results that existing limit of 25 percent is not a constraint but there is need to strengthen procurement of pulses so as to ensure remunerative prices to farmers. Smaller quantities of lentil were procured during the last three seasons.

Table 2.12: Procurement of Gram and Lentil in Major Producing States

(Lakh tonnes)

Crop	State	RMS 2018-19	RMS 2019-20	RMS 2020-21*
Gram	Andhra Pradesh	0.9 (15.6%)	0 (1.4%)	1.3 (25.0 %)
	Gujarat	0.9 (24.2%)	0.2 (7.6%)	1.2 (22.1%)
	Haryana	0.0 (0.0%)	0(0.3%)	0.1 (19.7%)
	Karnataka	1.3 (17.1%)	0(0%)	1.0 (12.6%)
	Madhya Pradesh	15.8 (34.4%)	5.8 (14.4%)	7.1 (27.1%)
	Maharashtra	1.8 (9.9%)	0.2 (1.6%)	3.1 (13.8%)
	Rajasthan	5.8 (34.3%)	1.2 (6.5%)	6.1 (24.9%)
	Telangana	0.5 (34.0%)	0.3 (21.1%)	0.5 (23.2%)
	Uttar Pradesh	0.1 (2.4%)	0.1 (1.7%)	0.4 (5.0%)
	Total	27.2 (23.9%)	7.8 (7.8%)	20.7 (19.0%)
Lentil	Madhya Pradesh	2.3 (33.7%)	0.6 (17.0%)	0.0 (0.3%)
	Uttar Pradesh	0.1 (2.7%)	0.0 (0.0%)	0.0 (0.0%)
	Total	2.4 (14.9%)	0.6 (4.6%)	0.0 (0.1%)

Note: *As on 01.07.2020

*Figures in parentheses represent procurement as a percentage of total production in the State.

Source: National Agricultural Cooperative Marketing Federation of India

- 2.47 The low public procurement under PSS can potentially arise if the market prices of the pulses stay buoyant and remunerative. However, as discussed earlier, the market prices of gram and lentil have remained below the MSP. Accordingly, reduced levels of procurement of pulses cannot be attributed to buoyant market prices but institutional and infrastructure constraints in procurement operations. The lower procurement of pulses by public agencies in the times of higher production forces farmers to sell the produce at lower price and deprives them of the MSP. Hence, there is an urgent need to address the institutional and infrastructure constraints that hinder price support linked procurement.
- 2.48 Disposal of stocks of pulses procured under the PSS by NAFED has been a challenge as NAFED incurs heavy losses in disposal in open market and sale of stocks in the market depresses market prices and sentiments. There is a need to formulate a policy for sale of pulses stocks like wheat and rice. Distribution of pulses under Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) to about 19.5 crore households is a welcome step and will help in disposal of stocks without depressing market prices and also address the issue of mal-nutrition. However, there is a need to have a long-term sustainable policy for disposal of stocks.
- 2.49 In terms of overall procurement of pulses, procurement under the Price Support Scheme (PSS) during 2019-20 was 27.3 lakh tonnes as on July 1, 2020, an increase of 46 percent over 2018-19 (Table 2.13). This was mainly due to a significant increase in procurement of gram, from 7.8 lakh tonnes in RMS 2019-20 to 20.7 lakh tonnes in RMS 2020-21. Further, procurement of tur also witnessed a significant rise from 2.8 lakh tonnes in KMS 2018-19 to 5.2 lakh tonnes in KMS 2019-20. However, there has been a substantial reduction in procurement of lentil, moong and urad from 8.4 lakh tonnes to merely 1.4 lakh tonnes during the period as market prices were better due to lower production of moong and urad during 2019-20. Further, total procurement of pulses remained significantly lower than sanctioned quantity during both years.

Table 2.13: Procurement of Pulses under Price Support Scheme (PSS)

(Lakh tonnes)

Crop	2018-19 (KMS 2018-19 & RMS 2019-20)		2019-20 (KMS 2019-20 & RMS 2020-21)	
	Sanctioned Quantity	Procurement	Sanctioned Quantity	Procurement*
Gram	23.7	7.8	27.3	20.7
Lentil	2.8	0.6	3.5	0
Tur	8.0	2.8	7.9	5.2
Moong	4.4	3.2	4.7	1.4
Urad	7.1	4.4	5.9	0
Total	46.0	18.7	48.7	27.3

Note: *As on 01.07.2020

Source: National Agricultural Cooperative Marketing Federation of India

Oilseeds

2.50 Rapeseed & mustard is an important oilseed crop during rabi season and accounts for about 83 percent of total production of rabi oilseeds. It has great potential but production has grown by only about 2 percent annually in the last 10 years. Market prices of mustard seed have remained well below the MSP during last four seasons, as there has been low procurement by public agencies. Table 2.14 shows procurement of mustard in major producing States under PSS for the last three marketing seasons. In RMS 2019-20, 10.9 lakh tonnes of mustard seed was procured by Government agencies, accounting for 12.5 percent of total production. Procurement of mustard was about 7.9 lakh tonnes as on 1st July 2020, though average market price was about 9.2 percent lower than the MSP. Rajasthan, which is the largest producer of mustard in the country, had lower procurement in RMS 2020-21 compared to last season and only 8.3 percent of total production was procured during RMS 2020-21. There was marginal increase in mustard seed procurement in Haryana and increased from 2.5 lakh tonnes in 2019-20 to 3.1 lakh tonnes in 2020-21.

Table 2.14: Procurement of Mustard in Leading States

(Lakh tonnes)

State	RMS 2018-19	RMS 2019-20	RMS 2020-21*
Gujarat	0.5 (13.2%)	0.5 (14.9%)	0.3 (9.4%)
Haryana	2.3 (21.1%)	2.5 (23.7%)	3.1 (24.6%)
Madhya Pradesh	1.2 (12.2%)	1.8 (24.6%)	1.2 (11.1%)
Rajasthan	4.7 (13.3%)	6.1 (14.5%)	3.4 (8.3%)
Uttar Pradesh	0.0 (0.1%)	0.0 (0.2%)	0.0 (0.0%)
West Bengal	0.0 (0.1%)	0.0 (0.0%)	0.0 (0.0%)
Total	8.8 (10.4%)	10.9 (12.5%)	7.9 (8.6%)

Note: *As on 01.07.2020

*Figures in parentheses represent procurement as a percentage of total production in the State

Source: 1. National Agricultural Cooperative Marketing Federation of India

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

2.51 The break-up of the number of farmers benefitted from procurement of mustard seed in selected States is given in Annex Table 2.4. About 3.1 lakh farmers benefitted from mustard seed procurement operations in RMS 2020-21 and more than 85 percent farmers were in Haryana and Rajasthan. There is a need to strengthen procurement of oilseeds, as India is highly dependent on imports for meeting domestic requirement. However, liquidation of stocks is a major problem for procurement agencies as oilseeds are primarily used for oil, feed and industrial applications and require processing. Procurement of oilseeds by public agencies is not 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, special efforts should be made to promote Price Deficiency Payment Scheme (PDPS) and Private Procurement & Stockist Scheme (PPPS) for oilseeds.

Remunerative Prices to Farmers: PM-AASHA

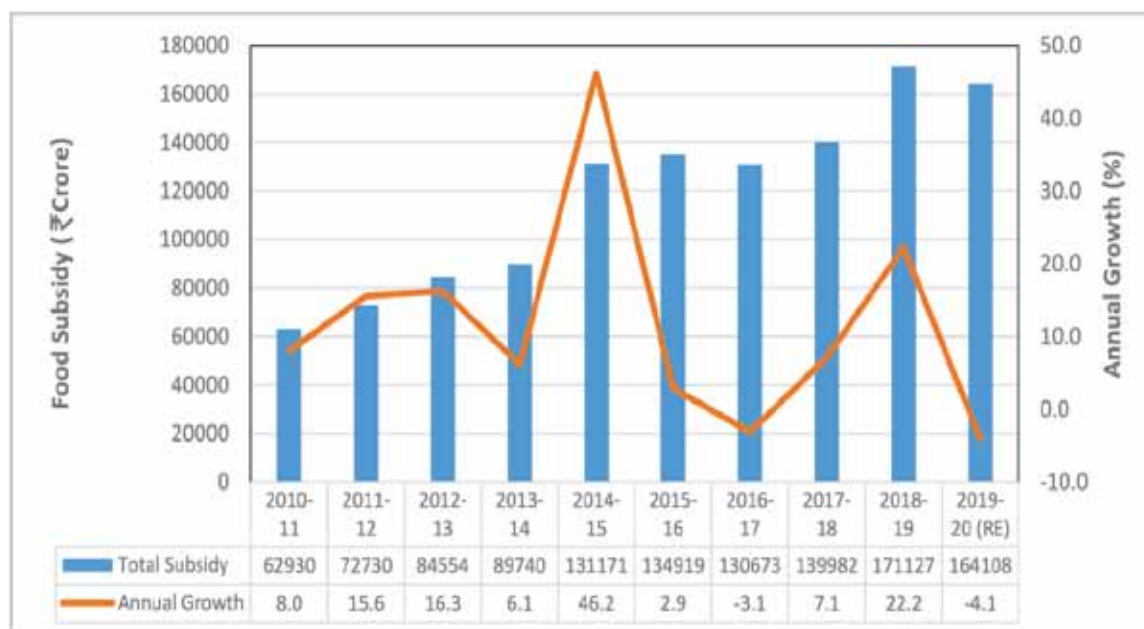
- 2.52 In order to ensure remunerative prices to farmers, Government of India launched an umbrella Scheme 'Pradhan Mantri Annadata Aay SanraksHan Abhiyan (PM-AASHA)' in September 2018. The Scheme comprises of three components (i) Price Support Scheme (PSS), (ii) Price Deficiency Payment Scheme (PDPS) and (iii) Pilot of Private Procurement & Stockist Scheme (PPPS) in addition to existing schemes of Department of Food and Public Distribution (DFPD) for procurement of paddy, wheat and nutri-cereals/coarse grains and of Ministry of Textiles for cotton and jute.
- 2.53 Under the PSS, overall quantity of procurement by Central Government in the State/UT is restricted to 25 percent of actual production of the commodity for that particular season. If State/UT Government intends to procure beyond 25 percent but to a maximum of 40 percent of production through Central agencies then the quantity will be utilised by the State Government for its PDS and other welfare schemes at its own cost.
- 2.54 Under PDPS, the difference between market price and MSP for the notified crop would be paid directly to farmers and the Scheme is applicable for oilseeds. The financial burden of up to 25 percent of production quantity and 25 percent of price difference will be borne by Government of India. Under the PPSS, private sector is encouraged to procure crops at MSP in selected districts on pilot basis and fixed service charges will be paid to the selected private agency. After implementation of PM-AASHA, PSS has made a significant progress in terms of procurement of pulses and oilseeds by NAFED, but PDPS and PPSS have not made much progress. The Commission strongly believes that PDPS and PPSS can go a long way in addressing the procurement issues of commercial crops as physical procurement of these crops is not feasible due to the absence of assured outlet unlike wheat and paddy.

Food Subsidy and Economic Cost of Grains

- 2.55 Food subsidy has three components, (i) consumer subsidy (difference between Economic cost and Central Issue Price), (ii) buffer subsidy consisting of operational cost of buffer stock and carryover charges paid to the State Agencies for holding wheat stock beyond 30th June of each RMS and (iii) subsidy for losses in the process of procurement, storage and distribution of foodgrains due to multiple handling, transportation and long storage. The trends in total food subsidy during the last 10 years are presented in Chart 2.19. Food subsidy has increased by 2.5 times during the last 10 years. 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 wheat has

increased from ₹1908 per quintal in 2013-14 to ₹2680 per quintal in 2019-20, the CIP for NFSA beneficiaries has not increased since 2013. The rates of ₹200 per quintal for wheat and ₹300 per quintal in case of rice were fixed under the Act initially for a period of three years and were to be revised from time to time but have not been revised. In 2020-21, economic cost of wheat is expected to increase marginally and is estimated at ₹2684 per quintal.

Chart 2.19: Trends in Food Subsidy Released* and Annual Growth in Subsidy



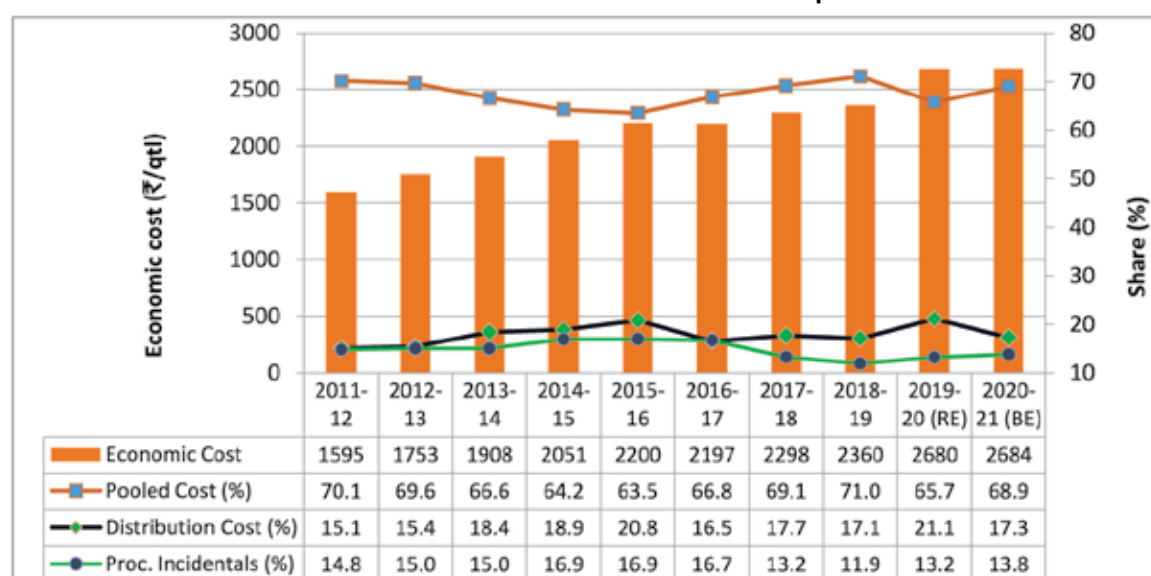
*Includes NSSF loan to FCI of ₹25000 crore in 2016-17, ₹40000 crore in 2017-18, ₹70000 crore in 2018-19 and ₹44164.02 crore in 2019-20

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

- 2.56 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 and interest etc. Different components of procurement incidentals and distribution cost for last three years are given in Annex Table 2.5.
- 2.57 Breakup of the economic cost shows that the pooled cost of grain accounts for over two-third of total economic cost while share of distribution cost is about 17 percent and procurement incidentals account for about 15 percent (Chart 2.20). In 2019-20, share of pooled cost declined whereas, share of both procurement incidentals and distribution cost increased compared to 2018-19. In 2020-21, share of pooled cost of grain and procurement incidentals is estimated to increase while distribution cost is likely to fall.

- 2.58 In the last five years, economic cost of wheat has increased at an annual growth rate of 4.9 percent while distribution cost recorded the highest growth of 7.2 percent, followed by pooled cost of grains (5.7%) and the lowest (1.2%) in procurement incidentals. Increase in pooled cost of grains is in line with increase in MSP of wheat and lower growth rate in procurement incidentals is due to reduction in statutory charges after introduction of GST. However, these charges are still high in some States. There is a need to reduce procurement incidentals by reducing mandi fee and other charges in States like Punjab and Haryana and distribution costs through strengthening procurement operations in main wheat producing States like Uttar Pradesh, Bihar and Rajasthan.

Chart 2.20: Economic Cost of Wheat and Share of Different Components of Economic Cost



Note: *RE: Revised Estimates, BE: Budget Estimates

Source: Food Corporation of India

Distortions in Agricultural Markets

- 2.59 Agricultural markets in India suffer from various restrictions and distortions such as high statutory taxes and charges, fragmentation and over-regulation, various barriers in expanding modern storage and other infrastructure, limited reach of price support schemes, lack of awareness among farmers, etc. Such market distortions have manifested in overproduction of certain agricultural commodities in some States and underproduction of some crops like oilseeds, nutri-cereals, etc. This section discusses some of these issues and recent initiatives taken by the Central Government to address these constraints.

High Fees/Taxes and Charges

- 2.60 Some States charge mandi fee and various other charges on the sale and purchase of agricultural produce for development of infrastructure such as market yards, rural

roads, storage, etc. for efficient marketing of agricultural produce. The statutory charges vary widely across States, which restrict inter-State trade and create inefficient marketing system in the country. Table 2.15 shows market fee and other incidental charges in major wheat producing States during RMS 2020-21. These charges are high and uneven across States ranging from 2.2 percent in Madhya Pradesh to as high as 6.5 percent in Haryana and 8.5 percent in Punjab, two major wheat producing States. The Commission had recommended in the earlier reports rationalization of such charges to encourage market competition and promote free inter-state trade to achieve the objective of national agricultural market. However, States are unwilling to reduce these statutory and other charges and amend their existing restrictive legislations. The Central Government has recently taken historic decision to unshackle the agri-food chains by amending ECA and introducing “The Farmers Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020” and “The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance 2020” to promote competition, inter-State trade and thereby ensuring remunerative prices to farmers.

Table 2.15: Market Fees/Taxes/Charges levied on Wheat Procurement in Selected States during RMS 2020-21

State	Market Fee/ Mandi Charges (%)	Commission/ Other Charges (%)	Rural Development Fee (%)	Total
Punjab	3.0	2.5	3.0	8.5%
Haryana	2.0	2.5	2.0	6.5%
Rajasthan	1.6	2.0	-	3.6%+FC*
Uttar Pradesh	2.0	0.5	-	2.5%+FC*
Madhya Pradesh	2.0	0.2	-	2.2%+FC*

**Note: FC: Fixed Charges. This includes a commission of ₹27/ql to society on wheat*

Source: Food Corporation of India

Awareness about MSP and FAQ Standards

- 2.61 Proper awareness about MSP and FAQ norms among farmers can make procurement operations much more effective. Knowledge about FAQ standards can reduce instances of rejection of farmers' produce at APMC mandis/procurement centres. This can be achieved by providing grain drying and cleaning facilities near the farm gate and establishing laboratories for the purpose of objective quality checks in the APMC mandis. Further, use of regional/vernacular newspapers and electronic media to spread knowledge about MSP, FAQ standards and procurement agencies before the beginning of procurement season should be done extensively.

**Recapitulation**

- 2.62 Global production and supply of wheat is forecast to increase in 2020-21, leading to high stocks, which can adversely affect wheat prices in the world market. On the other hand, there is expected to be a marginal decline in global production and supply of pulses in 2020-21. Combined with increased demand for pulses in India, this is expected to increase prices of pulses in 2020-21. With respect to oilseeds, reduced demand and higher production in 2020-21 prices of oilseeds and products are expected to be low.
- 2.63 In terms of domestic scenario, India's wheat production is estimated to reach a new record of 106.2 million tonnes in 2019-20. Higher production and record level of stocks of wheat have to be balanced by exploring export avenues in order to prevent a fall in wheat prices in the domestic market. Further, pulses production is expected to increase by 4.2 percent in 2019-20 but remains below the target. Thus, a twin strategy of enhancing domestic production and ensuring stable and remunerative prices to farmers through effective procurement policy has to be adopted in order to balance the interests of both producers and consumers.
- 2.64 Market prices of most of rabi crops, except lentil and rapeseed and mustard have shown a decline in RMS 2020-21 compared to RMS 2019-20. Thus there is a need to augment high MSPs with strengthening of procurement operations to make the price support policy more effective. This should be combined with increasing awareness about MSP and FAQ norms among farmers.
- 2.65 In order to ensure better price discovery, Government procurement operations have to be supplemented with participation of private trade and promote Price Deficiency Payment Scheme (PDPS) and Private Procurement & Stockist Scheme (PPPS). Further, long-term sustainable policy for disposal of pulses and oilseeds stocks needs to be devised. Distribution of pulses under Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) is a welcome step in this direction.
- 2.66 In order to reduce distortions in agricultural markets, rationalization of fees/taxes and other charges imposed by States during sale and purchase of agricultural produce is much needed. Introduction of "The Farmers Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020" and "The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance 2020" is a welcome step in this direction.

Crop Productivity Trends and Drivers

- 3.1 Improving agricultural productivity is crucial in order to meet the rising demand for food as well as also to make agriculture globally competitive. It assumes even greater importance in view of competing demands for land from industry and infrastructure development. Besides, enhancing productivity is critical to reduce cost of production and to increase profitability of farmers. This chapter discusses trends in productivity at all-India level for major rabi crops and compares productivity levels in India with the world average. This is followed by study of trends in inter-State and inter-district productivity of various rabi crops using productivity gap analysis. The chapter concludes with a discussion on various drivers of productivity and suggestive measures to augment productivity.

Productivity Growth Trends

Cereals

- 3.2 Table 3.1 shows annual growth rates of area, production and productivity of rabi crops for Quinquennial Ending (QE) 2009-10, QE2014-15 and QE2019-20. Cereals grown in rabi season have shown an increase in production by varying degrees as a result of rise in productivity and to a lesser degree due to increase in area under cultivation. Productivity of rabi cereals increased by 2.4 percent during the last 15 years with the highest increase (4.7%) observed in QE2019-20. With regard to total cereals, productivity growth accelerated from 2.5 percent in QE2014-15 to 3.7 percent in QE2019-20 leading to 3.1 percent growth in production in QE2019-20. Productivity growth for total cereals during the last 15 years was 2.7 percent.
- 3.3 Among individual rabi cereals, productivity of wheat has increased by 2.1 percent over the last 15 years. There was a decline (-0.4%) in productivity of wheat in QE2014-15, but productivity improved by 5 percent in QE2019-20. This increase in productivity led to a 4.4 percent increase in production of wheat in QE2019-20,



largest in the last 15 years even though area under wheat cultivation declined by 0.5 percent. Productivity of barley increased by 2.7 percent in QE2019-20, up from 1.4 percent increase registered in QE2014-15. However, increase in production was just 0.3 percent in QE2019-20 due to a fall (-2%) in area under barley cultivation.

Pulses

- 3.4 Production of rabi pulses has grown by 4.6 percent aided by growth in productivity (2.7%) and area (1.7%) over the last 15 years. Further, production of total pulses has also grown by 4.6 percent during this period. In case of gram, productivity had declined by 0.3 percent in QE2014-15, which was followed by a sharp improvement (5.2%) in productivity in QE2019-20. Rate of growth in area under gram cultivation also improved from 1 percent in QE2014-15 to 3.6 percent in QE2019-20. This resulted in an overall production growth of 9.5 percent in gram in QE2019-20. Production of lentil also increased by 9.1 percent during the latest quinquennial, which was largely led by substantial increase (8.2%) in productivity in QE2019-20. The large increase in production of pulses, stemming from increase in acreage and productivity, is a significant development towards achieving self-sufficiency in pulses, a major source of protein. Higher MSP of pulses during the last five year has encouraged farmers to increase production of pulses.

Oilseeds

- 3.5 Area under rabi as well as total oilseeds has declined over the last 15 years. However, production of rabi oilseeds and total oilseeds increased by 0.7 percent and 3.1 percent, respectively, due to improvements in productivity. Growth in productivity of rapeseed and mustard (R&M) and safflower was 5.7 percent and 6.7 percent, respectively in QE2019-20. This is in sharp contrast to the decline in productivity growth observed in both crops in the previous quinquennial. As far as production is concerned, R&M registered 7 percent increase in QE2019-20, whereas, production of safflower reduced by (-) 10.4 percent in QE2019-20 due to a sharp decline (-21.1%) in area. Overall, productivity of rabi oilseeds increased by 5.5 percent in QE2019-20 compared to negative growth rate recorded in the last two quinquennials.
- 3.6 It can be observed from the above analysis that productivity growth for all rabi crops has improved in QE2019-20 compared to the last two quinquennials. Further, other than barley and safflower, which experienced significant reduction in area under cultivation, production of all the remaining rabi crops recorded the highest growth in QE2019-20 compared to last two quinquennials.

Table 3.1: Quinquennial Trends in Growth Rate of Major Rabi Crops

(Percent)

Period	Cereals				Pulses			
	Wheat	Barley	Rabi	Total	Gram	Lentil	Rabi	Total
Area								
QE2009-10	1.6	0.7	1.5	0.2	4.0	0.3	2.2	0.5
QE2014-15	2.0	2.9	1.4	0.6	1.0	0.1	1.7	0.6
QE2019-20	-0.5	-2.0	-0.6	-0.6	3.6	0.1	1.4	3.4
All Period	1.0	0.5	0.8	0.0	2.9	0.2	1.7	1.5
Production								
QE2009-10	3.4	4.3	3.7	2.0	7.0	1.2	4.9	2.3
QE2014-15	1.6	4.2	1.8	3.1	0.6	0.4	2.2	3.9
QE2019-20	4.4	0.3	4.0	3.1	9.5	9.1	6.6	7.6
All Period	3.1	2.0	3.2	2.7	5.7	3.6	4.6	4.6
Yield								
QE2009-10	1.8	2.6	2.2	1.8	2.7	0.8	2.6	1.8
QE2014-15	-0.4	1.4	0.4	2.5	-0.3	1	0.7	3.2
QE2019-20	5	2.7	4.7	3.7	5.2	8.2	4.7	3.6
All Period	2.1	2.2	2.4	2.7	2.5	3.4	2.7	2.9
	Foodgrains				Oilseeds			
	Rabi	Total			R&M	Safflower	Rabi	Total
Area								
QE2009-10	1.6	0.2	-	-	-4.9	-4.6	-4.7	-1.1
QE2014-15	1.4	0.5	-	-	1.7	-8.8	-1.1	-0.1
QE2019-20	-0.1	0.1	-	-	1.2	-21.1	-0.5	0.6
All Period	1.0	0.3	-	-	-0.7	-11.5	-2.1	-0.2
Production								
QE2009-10	3.8	2.0	-	-	-1.6	1.8	-1.7	1.4
QE2014-15	1.9	3.1	-	-	0.8	-12.1	-1.1	3.2
QE2019-20	4.2	3.3	-	-	7.0	-10.4	5.0	4.5
All Period	2.7	2.8	-	-	3.3	-6.9	0.7	3.1
Yield								
QE2009-10	2.1	1.8	-	-	2.9	6.7	3.0	2.4
QE2014-15	0.4	2.5	-	-	-1.5	-3.2	-0.3	2.9
QE2019-20	4.4	3.1	-	-	5.7	6.7	5.5	4.0
All Period	2.3	2.5	-	-	2.4	3.4	2.7	3.1

Note: Growth rates have been calculated as a simple average of the growth rates (y-o-y) of constituent years

Source: Computed using data from Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Country Comparisons of Crop Productivity

- 3.7 Comparing India's crop productivity performance with that of other countries is a useful way of understanding India's international competitiveness. Table 3.2 compares productivity levels of main crops grown in rabi season in India with world average productivity in 2018. All-India average productivity of wheat, gram and R&M was higher than the world average. Punjab has the highest productivity of wheat in the country, which is significantly higher than the global average but about three-fourth of productivity in France, highest in the world. In case of barley, all-India productivity (2693 kg/ha) was lower than world average (2951 kg/ha). The highest yield in barley was observed in Rajasthan, which was higher than the world average but only 60 percent of the best in the world. Further, highest productivity (2058 kg/ha) of R&M was observed in Haryana, which was much lower than rapeseed productivity (3061 kg/ha) in France but significantly higher than mustard productivity (1056 kg/ha) in Nepal, the most productive major mustard producing country in world. Gram productivity in India was marginally lower (956 kg/ha) than global average (965 kg/ha) but significantly lower than in Ethiopia (2138 kg/ha). For lentil, productivity in India (731 kg/ha) was much lower than world average productivity (1038 kg/ha). Highest productivity in lentil was observed in Uttar Pradesh (1026 kg/ha), which was 73.5 percent of productivity (1395 kg/ha) recorded in Canada, highest yield in the world. In case of safflower, highest productivity (617 kg/ha) in India was recorded in Karnataka, which accounts for nearly 59 percent of country's total safflower production. However, Karnataka lags behind the world average (903 kg/ha) and is less than one-third of the world highest in Mexico (2197 kg/ha).
- 3.8 It is quite evident from the above results that productivity levels in India are low and various factors are responsible for low yields. Lack of irrigation facilities, non-availability of quality seed, poor extension services and sub-optimal utilization of resources are main factors behind low productivity levels. Therefore, it is imminent to address these constraints in order to achieve higher productivity.

Table 3.2: International Comparisons of Productivity of Major Rabi Crops (2018)

(Kg/ha)

Crop	World Average	World Highest (except India)	All-India Average	State Highest
Wheat	3425	6863 (France) (4.9%)	3371 (13.6%)	5188 [Pun]
Barley	2951	6333 (France) (7.9%)	2693 (1.6%)	3597 [Raj]
Gram	965	2138 (Ethiopia) (3.0%)	956 (66.2%)	1288 [MP]
Lentil	1038	1395(Canada) (33.0%)	731 (25.6%)	1026 [UP]
Rapeseed	1996	3061(France) (6.6%)	1258 (11.2%)^	2058 [Har]
Mustard	764	1056 (Nepal) (25.8%)		
Safflower	903	2197 (Mexico) (9.3%)	536 (8.8%)	617 [Kar]

Note: *Figures in parentheses show share of the country in total world production of the crop

^ All-India average yield is for rapeseed. Figures in parentheses show India's production of rapeseed as a percentage of world rapeseed production.

Source: 1. FAOSTAT for World Average, World Highest and All-India Average

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

Crop Productivity and Yield Gap Analysis in Major Producing States

3.9 This section analyses productivity trends during the last 10 years by comparing 5-year Olympic average yield per hectare in major producing States for the period 2010-14 and 2015-2019. Olympic average is calculated by excluding the highest and lowest yield from the recent 5-year period and averaging the remaining three values. Further, this section also carries out yield gap analysis to assess the difference in actual yield vis-à-vis potential yield for rabi crops in major producing States. To analyse yield gaps, Front Line Demonstration (FLD) and realised yield data provided by various ICAR research institutes have been used. Larger the yield gap more is the scope to boost yields through better application of available technologies and management practices. Three types of yield gaps have been considered namely, Yield Gap (A), Yield Gap (B) and Yield Gap (C), as defined below:

- i. **Yield Gap (A):** Difference between potential farm yield (yield achieved under FLD where best scientific and management practices are followed) and realized farm yield using improved technology under farmers' practices.
- ii. **Yield Gap (B):** Compares State average yield with realized farm yield using improved technology under farmers' practices.
- iii. **Yield Gap (C):** Compares State average yield with potential yield achieved under FLD.

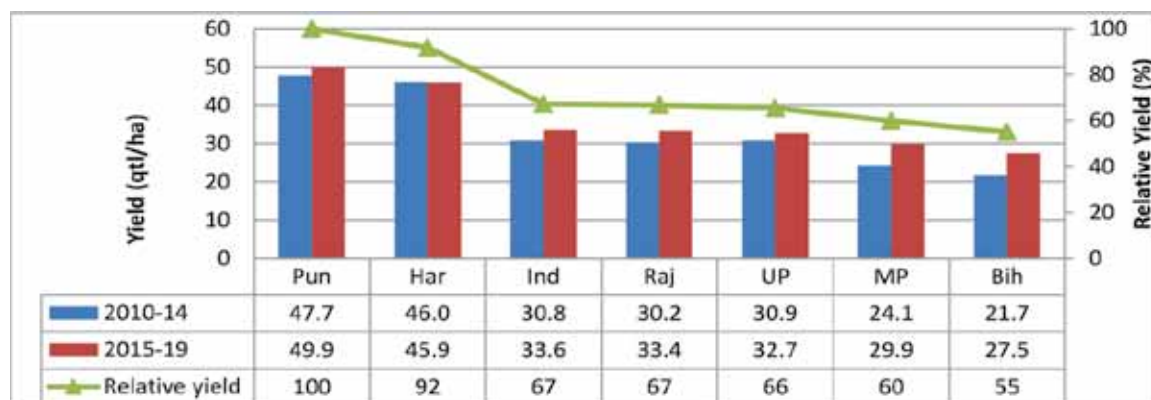
Yield Gap (A) is due to various socio-economic constraints like input availability, credit, knowledge and weak institutions while, Yield Gap (B) is due to non-availability of technology. Yield Gap (C) is due to combination of both technological and socio-economic constraints.

Wheat

3.10 Chart 3.1 shows productivity trends in major wheat producing States. Punjab recorded the highest productivity in both the periods, 2010-14 and 2015-2019 and productivity in the State improved by 4.6 percent to reach 49.9 quintals per hectare in 2015-19 from 47.7 quintals per hectare in 2010-14. Haryana has the second highest productivity of wheat in the country and the State witnessed a marginal decline in productivity from 46 quintals per hectare in 2010-14 to 45.9 quintals per hectare in 2015-19. There are large inter-State variations in productivity of wheat. Productivity in Rajasthan is about two-third of productivity level in Punjab. Lowest productivity was observed in Bihar in both the periods. However, Bihar registered an impressive increase in productivity (26.6%) between 2010-14 and 2015-19, thereby narrowing the gap with all-India yield (33.6 qtl/ha) for wheat. Madhya Pradesh recorded the second highest increase (24%) in wheat productivity during the same period. This increase can partly be attributed to a large increase in gross irrigated area under wheat in Madhya Pradesh, which increased from 3776 thousand hectares in 2009-10 to 5934 thousand hectares in 2014-15, a compound annual growth rate of 10 percent. Productivity in Uttar Pradesh stood at 32.7 quintals per hectare during

2015-19, which is 5.8 percent higher compared to 2010-14. Since, Uttar Pradesh accounts for nearly 30 percent of total wheat production in the country, there is a need to focus on further improving wheat productivity in the State.

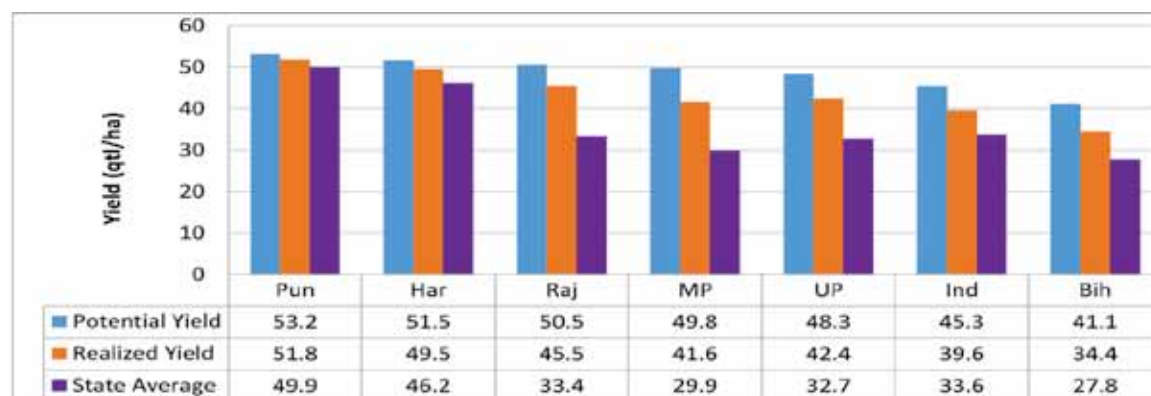
Chart 3.1: Average Yields for Major Wheat Producing States



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

3.11 Chart 3.2 shows the yield gap analysis for wheat. Yield gaps were the lowest in Punjab and Haryana. In Punjab, yield gap (A) and (B) were 2.6 percent and 2.7 percent, respectively while, for Haryana yield gap (A) was 3.8 percent and yield gap (B) was 5.7 percent. Yield gap (C) i.e. difference between State average yield and potential yield stood at 5.3 percent for Punjab and 9.3 percent for Haryana. Highest yield gaps were observed in Madhya Pradesh and yield gap (A) in the State was 16.4 percent, yield gap (B) was 27.6 percent and yield gap (C) was 39.5 percent. For Rajasthan and Uttar Pradesh, yield gap (A) was 10 percent and 12.4 percent, respectively, whereas yield gap (B) for these States stood at 25.6 percent and 21.9 percent, respectively. Further, yield gap (C) was 33.1 percent for Rajasthan and 5.3 percent for Punjab. At the all-India level, yield gap (A) was 12.7 percent, yield gap (B) at 15 percent and yield gap (C) was 25.8 percent.

Chart 3.2: Comparison of Potential Yield, Realised Yield and State Average Yield in Major Wheat Growing States, TE2018-19



Source: 1. Indian Institute of Wheat and Barley Research, Karnal

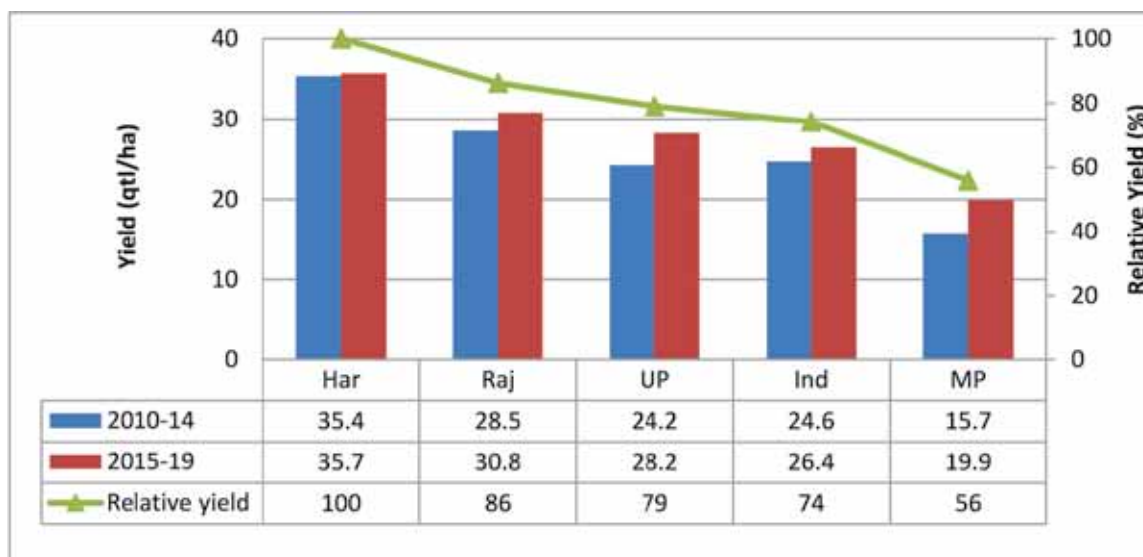
2. Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

- 3.12 The above analysis shows that there is considerable yield gap in some States, indicating the scope to increase the yield in future. Both technological and socio-economic factors need to be addressed to improve productivity of Wheat. In Punjab and Haryana, where State average yields are closer to potential yields, new high yielding varieties need to be developed and made available to farmers. While, in high yield gap States, availability of technology and quality inputs and services needs to be prioritised.

Barley

- 3.13 Barley productivity trends for major States are presented in Chart 3.3. Rajasthan, which accounts for more than half of total barley production, witnessed 8 percent increase in productivity in 2015-19 compared to 2010-14, higher than all-India increase of 7.3 percent. Haryana had the highest yield (35.7 qtl/ha) in the country however, there was not much improvement in yield (35.4 qtl/ha) in 2015-19 compared to 2010-14. Madhya Pradesh recorded the highest increase (26.5%) in yield and yield increased from 15.7 quintals per hectare in 2010-14 to 19.9 quintals per hectare in 2015-19. Uttar Pradesh, which accounts for nearly one-third of total barley production, showed 16.4 percent increase in productivity in 2015-19 compared to 2010-14 and yield (28.2 qtl/ha) in the State surpassed all-India average (26.4 qtl/ha) in 2015-19.

Chart 3.3: Average Yields for Major Barley Producing States

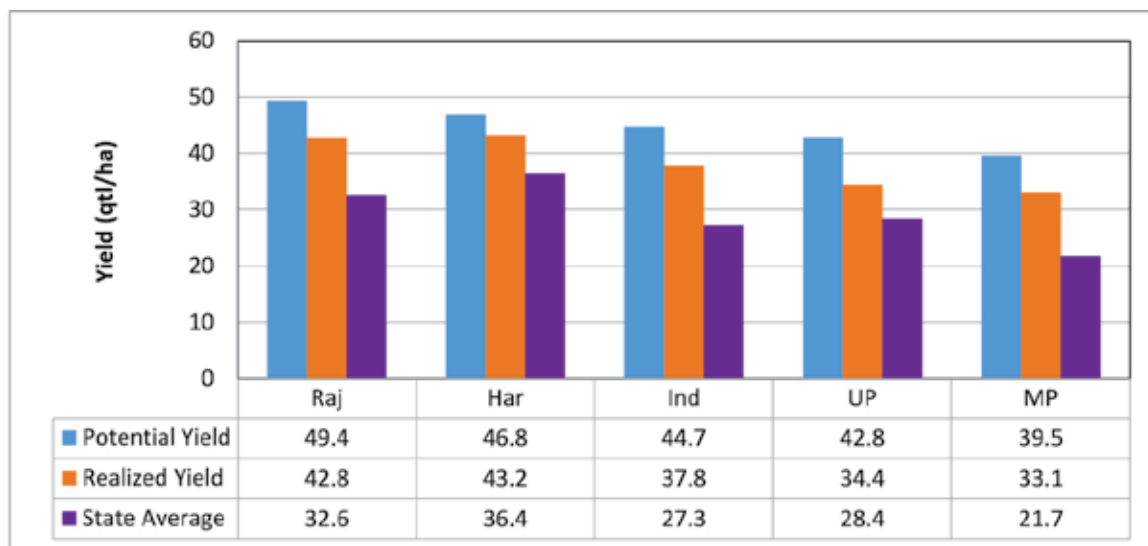


Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

- 3.14 Chart 3.4 shows yield gap analysis for barley. Lowest gap between potential and realised yield was observed in Haryana (7.8%), followed by Rajasthan (13.4%). Yield gap (B), which measures gap between State average and realised yield, was also the lowest in Haryana (15.9%), followed by Uttar Pradesh (17.4%) and Rajasthan (23.8 %). Among the States having high yield gaps, Yield Gap (A) was the highest (19.8%)

in Uttar Pradesh whereas yield gap (B) and (C) were the highest in Madhya Pradesh at 34.3 percent and 45 percent, respectively. At all-India level, yield gap (A), (B) and (C) were 15.4 percent, 27.9 percent and 39 percent, respectively.

Chart 3.4: Comparison of Potential Yield, Realised Yield and State Average Yield in Major Barley Growing States, TE2018-19



Source: 1. Indian Institute of Wheat and Barley Research, Karnal
2. Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

- 3.15 The above analysis suggests that there is great potential to improve productivity and production of rabi cereals in the country, particularly in the areas with high yield gaps. Given the above yield gaps in rabi cereals, estimated increase in production that can be achieved by adopting yield gap bridging strategies has been computed and presented in Table 3.3. It is evident from the Table that wheat production can be increased by about 4.3 million tonnes to 17.7 million tonnes while barley production can be increased by about one to 6.7 lakh tonnes by adopting various yield gap-bridging strategies. Some of these strategies could be adoption of suitable high-yielding varieties, improving input use efficiency by good farming practices such as timely application of inputs, improved planting methods, improved extension services and post-harvest management.

Table 3.3: Estimated Additional Production of Wheat and Barley by Bridging Yield Gap

(Lakh tonnes)

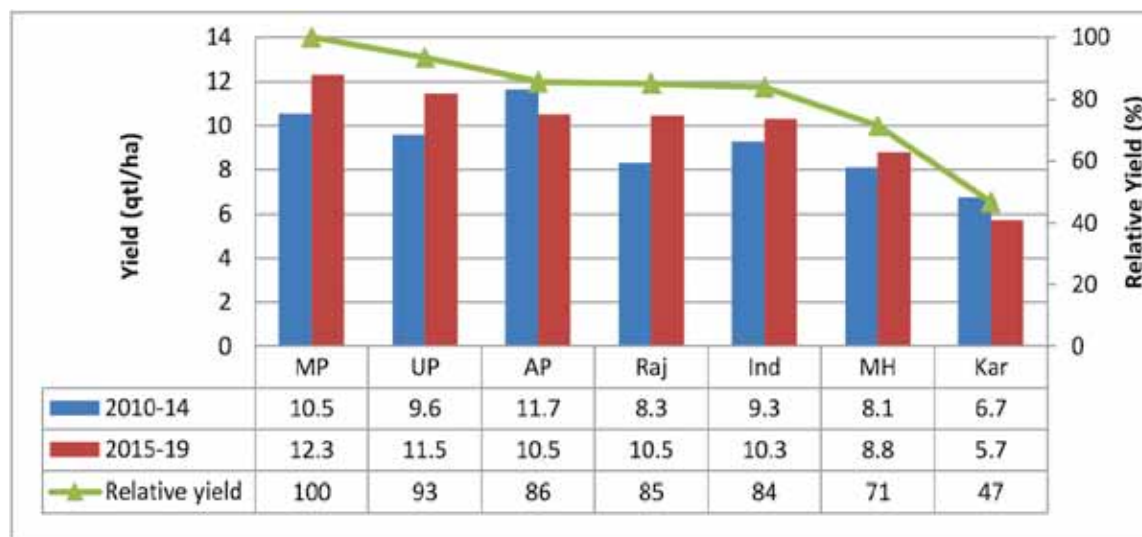
Crop	Reduction in yield gap (A)				Reduction in yield gap (B)			
	25%	50%	75%	100%	25%	50%	75%	100%
Wheat	43.2	86.4	129.6	172.8	44.3	88.5	132.8	177.0
Barley	1.1	2.2	3.3	4.3	1.7	3.3	5.0	6.7

Source: Estimated by CACP

Gram

3.16 Gram productivity trends in selected States are presented in Chart 3.5. The all-India productivity of gram increased from 9.3 quintals per hectare in 2010-14 to 10.3 quintals per hectare in 2015-19, a rise of 11.1 percent. Madhya Pradesh and Uttar Pradesh, which have relatively high yield levels, recorded a substantial improvement in productivity of 16.4 percent and 19.7 percent, respectively. Rajasthan, whose productivity was below the all-India productivity (9.3 qtl/ha) in 2010-14, recorded the highest improvement (25.9%) in productivity in 2015-19 and was 10.5 quintals per hectare, higher than all-India average (10.3 qtl/ha). However, a decline in gram productivity was observed in Andhra Pradesh (-9.8%) and Karnataka (-14.9%) between 2010-14 and 2015-19.

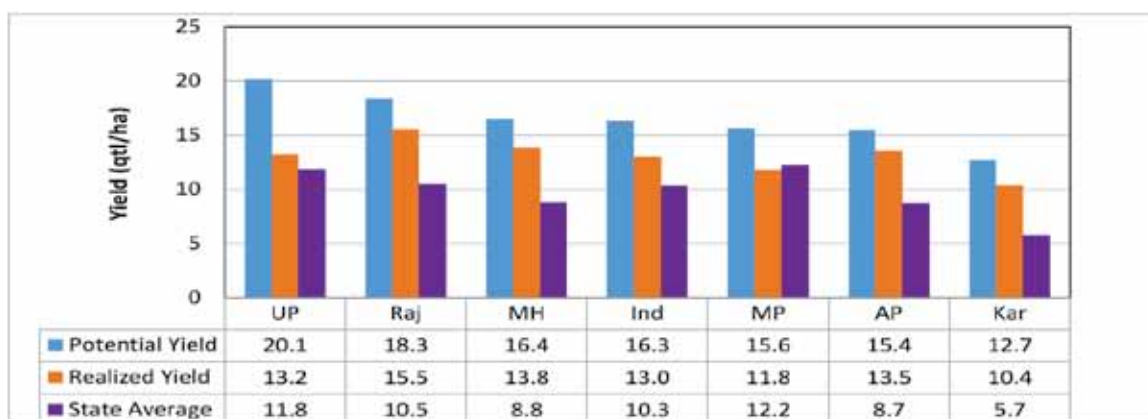
Chart 3.5: Average Yields for Major Gram Producing States



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

3.17 Chart 3.6 shows the yield gaps in major gram growing States. Gap between potential and realised yield varied from 12.4 percent in Andhra Pradesh to 34.4 percent in Uttar Pradesh. Variations in yield gap (B) were comparatively larger and yield gap (B) was negative in Madhya Pradesh (-4.2%) while it was as high as 44.6 percent in Karnataka. Negative yield gap in Madhya Pradesh was due to rains at harvesting stage at FLD trial sites. Yield gap (C), which measures the difference between potential yield and State average yield, remained on the higher side for most of the States. Among the major producers, yield gap (C) was highest in Karnataka (54.6%), followed by Maharashtra (46.4%) and Andhra Pradesh (43.7%). High magnitude of yield gap (B) and yield gap (C) in Karnataka indicates that State average yields can be improved significantly by suitably addressing the socio-economic constraints faced by farmers and making technologies more accessible.

Chart 3.6: Comparison of Potential Yield, Realised Yield and State Average Yield in Major Gram Growing States, TE2018-19

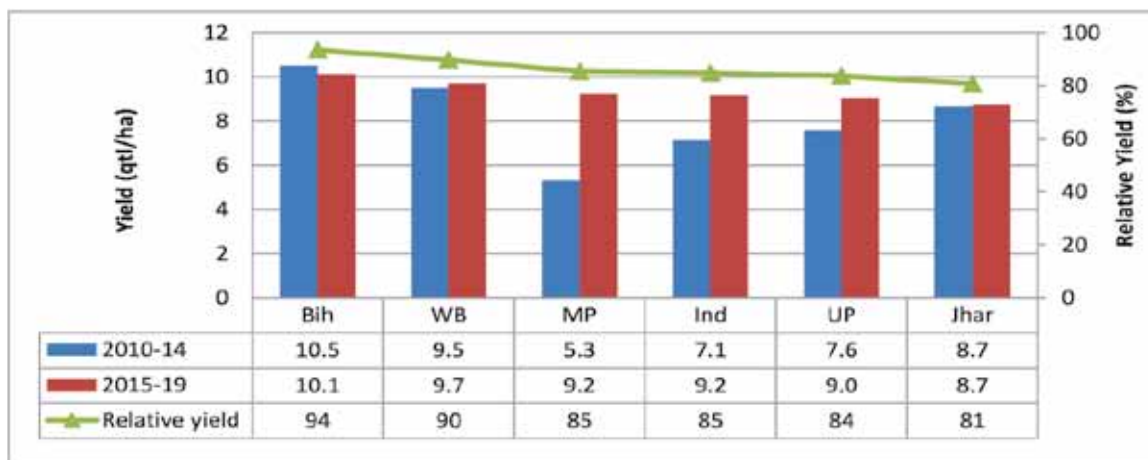


Source: 1. Indian Institute of Pulses Research, Kanpur
2. Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Lentil

3.18 Chart 3.7 shows productivity trends for lentil in leading lentil growing States. Bihar had the highest productivity in both the periods but there was a decline in productivity in the State, from 10.5 quintals per hectare in 2010-14 to 10.1 quintals per hectare in 2015-19. Madhya Pradesh and Uttar Pradesh, which together contribute nearly 68 percent of lentil production, witnessed significant improvement in productivity. Productivity in Madhya Pradesh increased by 73.7 percent whereas, productivity in Uttar Pradesh increased by 19.2 percent. As a result of improvement in these two States, all-India productivity increased by 28.2 percent from 7.1 quintals per hectare in 2010-14 to 9.2 quintals per hectare in 2015-19. West Bengal and Jharkhand, which are other major producers of lentil, witnessed stagnation in yield during the last 10 years.

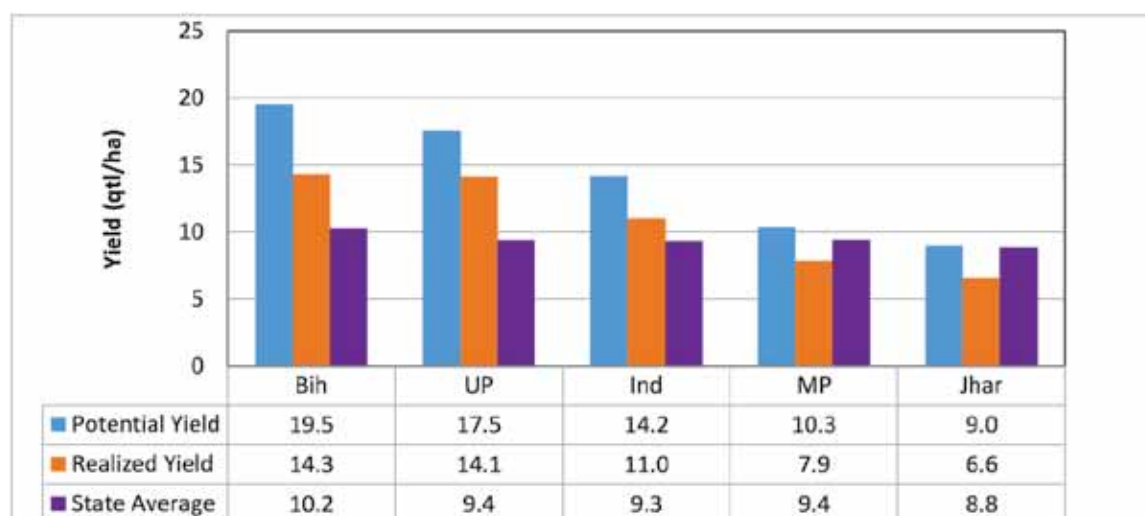
Chart 3.7: Average Yields for Major Lentil Producing States



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

3.19 Yield gap (A) varied from 19.3 percent in Rajasthan to 26.7 percent in Bihar (Chart 3.8). Further, in Madhya Pradesh and Jharkhand, State average yield exceeded realised yield leading to a yield gap (B) of (-)19.8 percent and (-)34.4 percent, respectively. The reasons for low realised yield were untimely rains at FLD sites in Madhya Pradesh and inclusion of non-traditional areas for conducting FLD trials in Jharkhand. Yield gap (A) and (B) at the all-India level were 22.2 percent and 15.5 percent, respectively. In case of yield gap (C), it was the lowest (2.2%) in Jharkhand, followed by Madhya Pradesh (8.7%) and the highest gap was observed in Bihar (47.5%). At the all-India level, yield gap (C) was 34.2 percent.

Chart 3.8: Comparison of Potential Yield, Realised Yield and State Average Yield in Major Lentil Growing States, TE2018-19



Source: 1. Indian Institute of Pulses Research, Kanpur

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

3.20 Results show that potential yields of pulses are significantly higher than the actual yields in major producing States and provide an indication of the possibilities to increase pulses productivity and production in the country. By bridging yield gaps, total production of gram can increase by about 8 lakh tonnes to over 33 lakh tonnes in the country while lentil production can increase by 1-4.6 lakh tonnes. (Table 3.4).

Table 3.4: Estimated Additional Production of Gram and Lentil by Bridging Yield Gap

(Lakh tonnes)

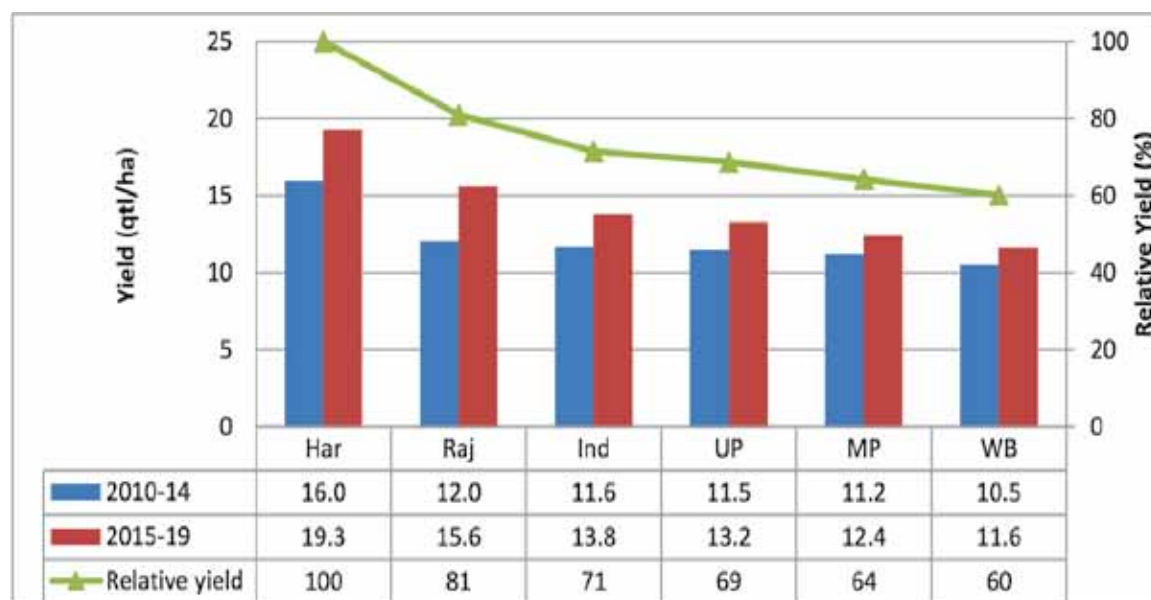
Crop	Reduction in yield gap (A)				Reduction in yield gap (B)			
	25%	50%	75%	100%	25%	50%	75%	100%
Gram	8.3	16.5	24.8	33.0	7.9	15.9	23.8	31.7
Lentil	1.1	2.3	3.4	4.6	0.6	1.3	1.9	2.5

Source: Estimated by CACP

Rapeseed & Mustard

3.21 There was an improvement in productivity in all the major producing States (Chart 3.9). Highest increase in productivity was observed in Rajasthan, which is also the largest producer of R&M. Productivity in Rajasthan improved by 29.6 percent, from 12 quintals per hectare in 2010-14 to 15.6 quintals per hectare in 2015-19. Haryana, which is the second largest producer, also recorded 20.6 percent improvement in productivity with yield of 19.3 quintals per hectare in 2015-19. Productivity in Uttar Pradesh, Madhya Pradesh and West Bengal increased by 15.6 percent, 10.5 percent and 10.4 percent, respectively. As a result of improvement in yield in major producing States, all-India productivity improved from 11.6 quintals per hectare in 2010-14 to 13.8 quintals per hectare in 2015-19, an increase of 18.3 percent.

Chart 3.9: Average Yields in Major R&M Producing States

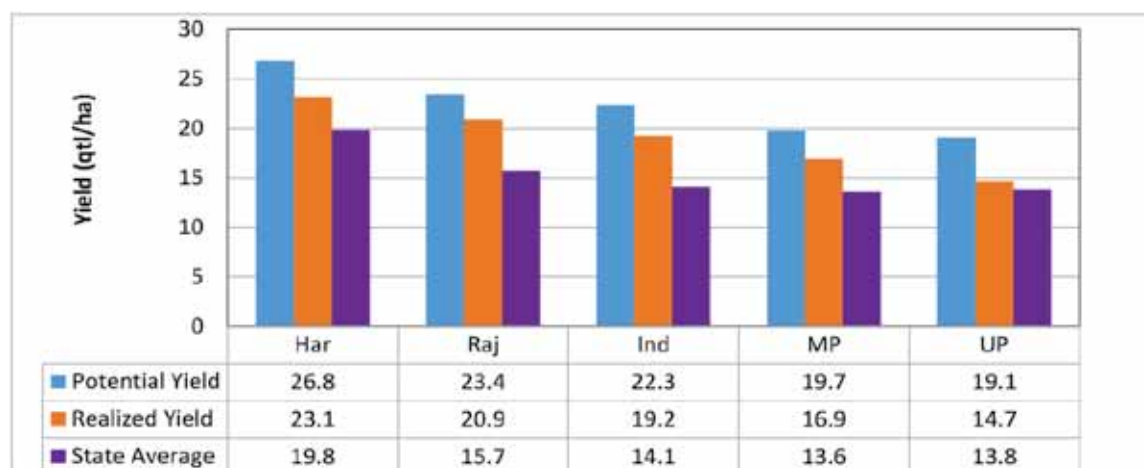


Source: Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

3.22 Yield gap analysis for R&M is presented in Chart 3.10. Largest difference (23.2%) between potential and realised yield was observed in Uttar Pradesh. On the other hand, yield gap (B) and (C) were the highest in Rajasthan, 24.7 percent and 32.9 percent, respectively. Yield gap (B) was relatively smaller in Uttar Pradesh (6%). At the all-India level, yield gap (A) was 13.7 percent, yield gap (B) was 26.7 percent and yield gap (C) was 36.8 percent.

Price Policy for Rabi Crops

Chart 3.10: Comparison of Potential Yield, Realised Yield and State Average Yield in Major R&M Growing States, TE2018-19

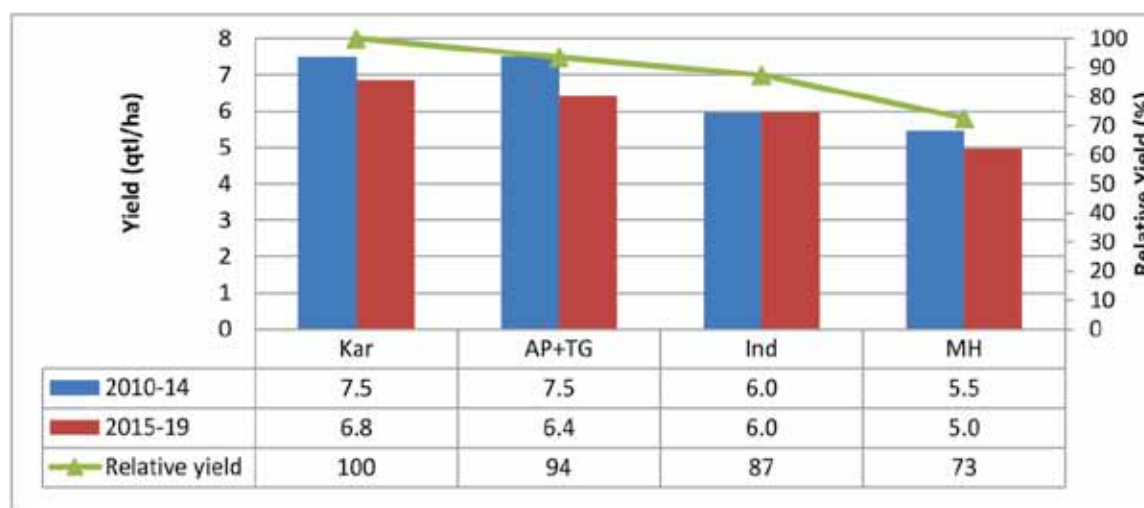


Source: 1. Indian Institute of Oilseeds Research, Hyderabad
2. Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Safflower

3.23 Productivity changes in major safflower producing States during the last 10 years are presented in Chart 3.11. In all the major States, there was a decline in productivity during 2015-19 compared to 2010-14. Karnataka, the largest producer of safflower, recorded a decline in yield from 7.5 quintals per hectare in 2010-14 to 6.8 quintals per hectare during 2015-19, a decline of 8.5 percent. Productivity in undivided Andhra Pradesh declined by 14.6 percent, from 7.5 quintals per hectare in 2010-14 to 6.4 quintals per hectare in 2015-19. Productivity in Maharashtra was 5 quintals per hectare during 2015-19, 9.1 percent lower than in 2010-14. Productivity at the all-India level remained stagnant at 6 quintals per hectare.

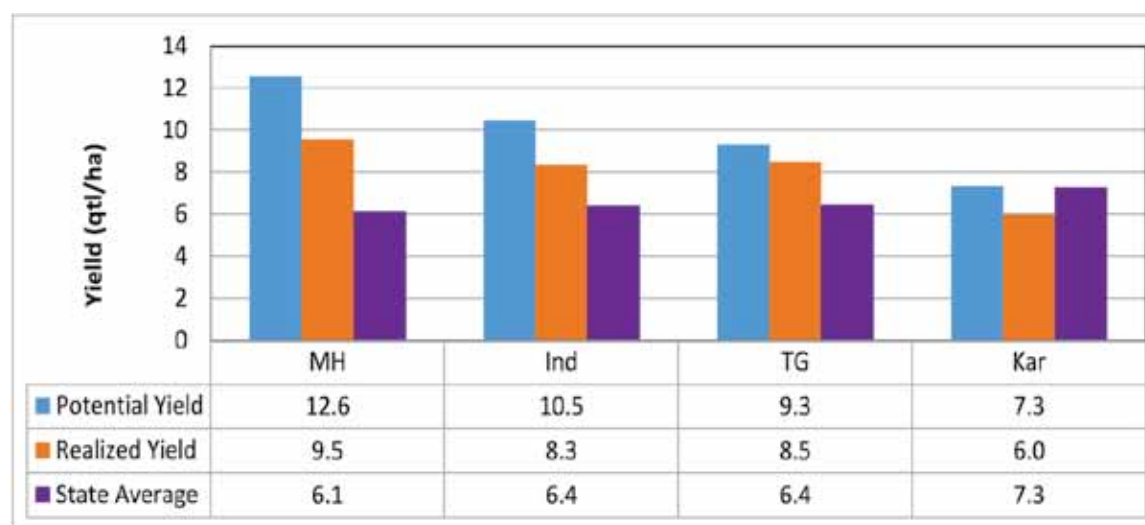
Chart 3.11: Average Yields in Major Safflower Growing States



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

3.24 Comparison of yield gaps in major safflower growing States shows variability among the States (Chart 3.12). Highest gap between potential and realised yield was observed in Maharashtra (24%), while the gap was the lowest for Telangana (9%). In Karnataka, State average yield was higher than the realised yield but marginally below the potential yield. Yield gap (B) was the largest (35.8%) in Maharashtra while yield gap (C) was as high as 51.2 percent. For all-India, yield gap (A) and (B) were 20.6 percent and 23.3 percent, respectively, whereas yield gap (C) was 39.1 percent.

Chart 3.12: Comparison of Potential Yield, Realised Yield and State Average Yield in Major Safflower Growing States, TE2018-19



Source: 1. Indian Institute of Oilseeds Research, Hyderabad

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

3.25 Table 3.5 shows estimated additional production of rapeseed & mustard and safflower by bridging productivity gaps. It shows that R&M production in the country can be increased by 1.9 million tonnes by eliminating Yield Gap (A) and 3.1 million tonnes by bridging Yield Gap (B). On the other hand, potential for increasing safflower production is low.

Table 3.5: Estimated Additional Production of Rapeseed & Mustard and Safflower by Bridging Productivity Gap

(Lakh tonnes)

Crop	Reduction in yield gap (A)				Reduction in yield gap (B)			
	25%	50%	75%	100%	25%	50%	75%	100%
R&M	4.6	9.2	13.8	18.8	7.8	15.6	23.4	31.2
Safflower	-	-	-	-	-	-	-	-

Source: Estimated by CACP

District Level Productivity Trends

3.26 This section compares productivity of crops at district level for TE2008-09 and TE2017-18. For this purpose, number of districts and area under different productivity bands for major crops in main producing States are analysed. Only districts having at least one percent share in total production in the State have been considered in the analysis.

Wheat

3.27 Four yield bands have been considered viz., <2t/ha, 2-3 t/ha, 3-4 t/ha and >4 t/ha (Table 3.6). Except for Punjab, there was an increase in share of area in the highest yield band (>4 t/ha) for all major wheat producing States. Highest increase was seen in Rajasthan where share of area under the highest yield band increased from nil during TE2008-09 to 37.9 percent during TE2017-18. This reconciles with the increase in wheat productivity witnessed in the State. In case of Madhya Pradesh, number of districts in 3-4 t/ha yield band increased from nil in TE2008-09 to 14 in TE2017-18 and number of districts in the highest yield band increased from zero to 7 in the corresponding period. Further, there were no districts in the lowest yield band (<2 t/ha) in the State during TE2017-18. This clearly shows significant productivity gains achieved by Madhya Pradesh in the last few years. Uttar Pradesh, which is the largest producer of wheat, had no districts in the lowest yield band (<2 t/ha) in TE2017-18 and there was a considerable reduction in proportion of area as well as number of districts in the 2-3 t/ha yield band, from 45.8 percent during TE2008-09 to 16.9 percent during TE2017-18. As a result, there was a shift in area towards the highest yield band, from 40.3 percent during TE2008-19 to 66.1 percent during TE2017-18. This shift of wheat growing areas in Uttar Pradesh to higher productivity levels augurs well for the future growth of largest wheat producer in the country. Rajasthan also recorded significant increase in area and number of districts in highest yield band during TE 2017-18 while both area and districts declined in lower yield bands in the State.

Table 3.6: Mobility of Districts in Productivity Ladder: Case of Wheat

State/Year	<2 t/ha		2-3 t/ha		3-4 t/ha		>4 t/ha	
	No. of Districts	Area (%)	No. of Districts	Area (%)	No. of Districts	Area (%)	No. of Districts	Area (%)
Punjab								
TE2008-09	0	0	0	0	2	6.1	17	93.9
TE2017-18	0	0	0	0	0	0	19	89.6
Madhya Pradesh								
TE2008-09	18	49.3	15	35.4	0	0.0	0	0.0
TE2017-18*	0	0	12	32.3	14	38.6	7	15.3
Rajasthan								
TE2008-09	2	5.8	13	34.5	11	53.9	0.	0.0
TE2017-18	0.	0.0	6	15.3	12	40.0	8	37.9
Uttar Pradesh								
TE2008-09	1	1.0	31	45.8	20	40.3	0	0.0
TE2017-18	0	0	10	16.9	39	61.9	3	4.2

Note: *Data for Madhya Pradesh for 2016-17 and 2017-18 not available

The figures for Area (in %) could be less than 100% as the districts where production of the crop is less than 1% of total production in the respective State have not been considered.

Source: Computed by CACP using data of Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Gram

3.28 In case of gram, yield bands considered were <0.5 t/ha, 0.5-1 t/ha and >1 t/ha and district-wise trends are shown in Table 3.7. For Karnataka, no area was reported in the highest yield band (>1t/ha) in both the periods and there was a decline in proportion of area in the 0.5-1 t/ha yield band, from 56 percent in TE2008-09 to 46 percent in TE2017-18. The proportion of area under the lowest yield band increased from 41.6 percent in TE2008-09 to 51.5 percent in TE2017-18. Maharashtra registered a shift in area from the middle band (0.5-1 t/ha) to the lowest (<0.5 t/ha) and the highest band (>1 t/ha). As a result, share of area under the highest band in Maharashtra increased by nearly 10 percent, from 3.3 percent in TE2008-09 to 12.9 percent in TE2017-18. Rajasthan and Uttar Pradesh also registered significant increase in proportion of area under the highest band whereas area under lower yield bands reduced. Number of districts in the highest band more than doubled in both the States, from 8 to 17 in Rajasthan and from 5 to 11 in Uttar Pradesh.

Table 3.7: Mobility of Districts in Productivity Ladder: Case of Gram

State/Year	<0.5 t/ha		0.5-1 t/ha		>1t/ha	
	No. of Districts	Area (%)	No. of Districts	Area (%)	No. of Districts	Area (%)
Karnataka						
TE2008-09	8	41.6	4	56.0	0	0
TE2017-18	5	51.5	7	46.0	0	0
Maharashtra						
TE2008-09	0	0	24	94.3	1	3.3
TE2017-18*	1	3.0	21	81.9	3	12.9
Rajasthan						
TE2008-09	1	24.3	14	56.6	8	13.8
TE2017-18	1	10.8	5	43.6	17	41.0
Uttar Pradesh						
TE2008-09	0	0	12	71.4	5	18.1
TE2017-18	0	0	6	50.9	11	39.6

Note: *Data for Maharashtra is not available for 2017-18

The figures for Area (in %) could be less than 100% as the districts where production of the crop is less than 1% of total production in the respective State have not been considered.

Source: Computed by CACP using data of Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Rapeseed & Mustard

3.29 District-level yield trends for R&M for three States namely, Rajasthan, Uttar Pradesh and West Bengal are given in Table 3.8. All the three States have registered an increase in proportion of area under the highest yield band (>1 t/ha). The highest increase was observed in West Bengal, from 8.2 percent under the highest yield band in TE2008-09 to 81.2 percent in TE2017-18. Further, there was no district under the lowest band in West Bengal in TE2017-18, compared to one in TE2008-09. In Rajasthan, there was a large fall in proportion of area under the middle band (0.5-1 t/ha), from 30.3 percent in TE2008-09 to 3.4 percent in TE2017-18, whereas area under the highest band increased from 66.9 percent to 94.9 percent and number of districts from 16 to 24. In case of Uttar Pradesh, there was no district in the lowest band in both the periods while share of area under the highest band marginally increased from 48.3 percent in TE2008-09 to 51.2 percent in TE2017-18.

Table 3.8: Mobility of Districts in Productivity Ladder: Case of R&M

State/Year	<0.5 t/ha		0.5-1 t/ha		>1 t/ha	
	No. of Districts	Area (%)	No. of Districts	Area (%)	No. of Districts	Area (%)
Rajasthan						
TE2008-09	0	0	10	30.3	16	66.9
TE2017-18	0	0	2	3.4	24	94.9
Uttar Pradesh						
TE2008-09	0	0	14	31.7	14	48.3
TE2017-18	0	0	10	27.4	18	51.2
West Bengal						
TE2008-09	1	3.5	10	83.8	1	8.2
TE2017-18	0	0	5	16.5	7	80.4

Note: The figures for Area (in %) could be less than 100% as the districts where production of the crop is less than 1% of total production in the respective State have not been considered.

Source: Computed by CACP using data of Directorate of Economics and Statistics, Ministry of Agriculture and Farmers Welfare

Drivers of Productivity Growth

3.30 The key drivers for increasing agricultural productivity are adoption of innovative technologies and practices by farmers, timely availability of quality seed, fertilizers, credit, irrigation, and extension services, investment and public policies. Therefore, it is critical to ensure timely availability of the above factors and enabling public policies to enhance productivity.

Requirement and Availability of Certified/Quality Seed

3.31 Table 3.9 shows the requirement and availability of certified/quality seed for wheat, barley, gram, lentil, R&M and safflower for the last five years. For wheat, barley, R&M and safflower availability of certified/quality seed has consistently met/outstripped the requirement. However, in case of gram and lentil, availability was lower than the requirement in 2015-16 and 2016-17 but with coordinated efforts of the Government, seed availability has considerably improved and exceeded the requirement since 2017-18. This has led to significant increase in pulses production in the country.

Table 3.9: Requirement and Availability of Certified/Quality Seed (2015-16 to 2019-20)

(Lakh quintals)

Crop	2015-16		2016-17		2017-18		2018-19		2019-20	
	Req.	Av.	Req.	Av.	Req.	Av.	Req.	Av.	Req.	Av.
Wheat	113.5	118.0	117.6	136.6	121.3	149.8	122.8	139.0	121.7	139.6
Barley	2.3	3.2	2.4	3.0	2.3	3.5	1.9	3.1	2.0	3.0
Gram	18.1	14.9	17.7	16.0	17.2	19.3	20.9	25.3	21.1	23.8
Lentil	1.3	1.1	1.5	1.2	1.4	1.4	1.5	1.5	1.5	1.5
R&M	2.5	2.7	2.5	2.5	2.3	2.6	2.3	3.0	2.5	2.8
Safflower	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Note: Req: Requirement, Av: Availability

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

3.32 Good quality seed, Seed Replacement Rate (SRR) and Varietal Replacement Rate (VRR) are prominent sources to improve agricultural productivity and production. However, SRR and VRR for most crops remain quite low in the country due to various reasons such as lack of awareness about potential of quality seed, non-availability, high seed price, etc. Table 3.10 shows SRR for rabi crops in major States. Though availability of quality seed has increased, SRR remains low in the country and SRR/VRR in most crops are much lower than the desired levels. As seen in the Table, except for Bihar and Rajasthan for R&M, SRR remained below 50 percent for rabi crops in all the States. Concerted efforts are needed to ensure timely availability of seeds as well as increasing the Seed/Varietal Replacement Rate.

Table 3.10: SRR for Rabi Crops in Major States (2018)

(Percent)

States/Crops	Wheat	Gram	Lentil	R&M
Punjab	12.9	-	-	-
Bihar	28.8	23.0	5.1	60.0
Rajasthan	33.6	17.8	-	63.0
Tamil Nadu	-	32.9	-	-
Jharkhand	17.0	9.5	4.2	1.6
Uttar Pradesh	43.8	30.8	23.6	23.1

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



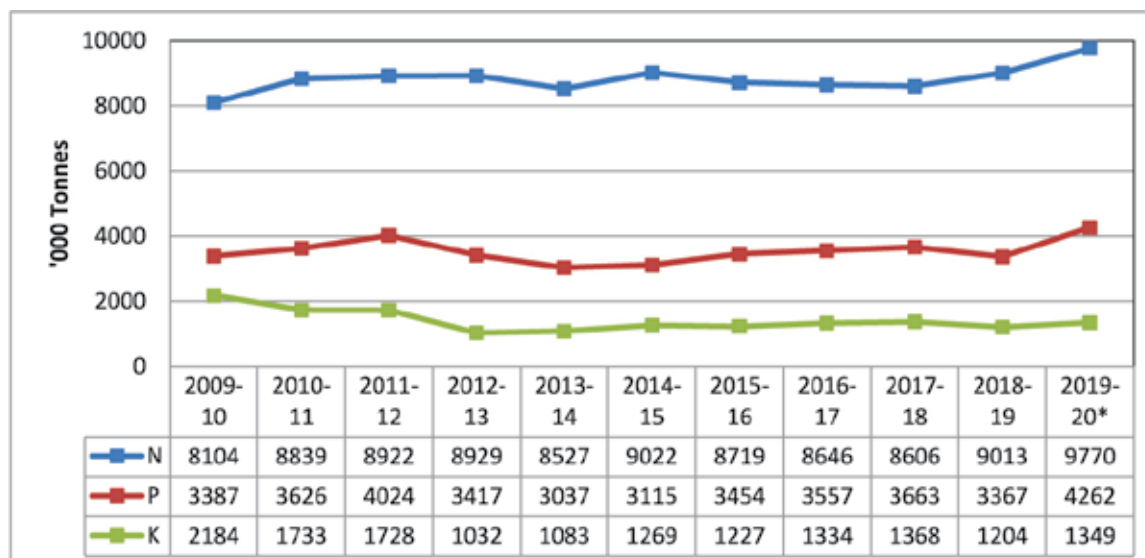
- 3.33 As a strategy to enhance productivity, Department of Agriculture, Cooperation and Farmers' Welfare has requested all States/ UTs to prepare a long term Seed Rolling Plan based on their agro-climatic conditions. In this Seed Rolling Plan, focus will be on incorporation of newly released high yielding varieties, bio fortified, stress tolerant, short and medium duration varieties that will help in replacing old varieties in seed chain.

Fertilizer Use

- 3.34 Fertilizer is an important input for improving crop productivity. India has made rapid strides in production and consumption of fertilizers and is the third largest producer and second largest consumer of fertilizers in the world.
- 3.35 The trends in fertilizer consumption for all-India in the rabi season from 2009-10 to 2019-20 are shown in Chart 3.13. As seen in the Chart, there was an average 3.4 percent annual increase in consumption of Nitrogen (N), from 8104 thousand tonnes in 2009-10 to 8929 thousand tonnes in 2012-13. Consumption of P increased marginally from 3387 thousand tonnes in 2009-10 to 3417 thousand tonnes in 2012-13, about one percent growth rate. On the other hand, during this period consumption of Potassium (K) fell annually by (-)20.4 percent, from 2184 thousand tonnes in 2009-10 to 1032 thousand tonnes in 2012-13. This led to a worsening of N,P,K ratio during this period from 3.7: 1.6:1 in 2009-10 to 8.6:3.3:1 in 2012-13. However, during the next 5 years (2013-14 to 2017-18), there was a marginal decline (-0.7%) in urea consumption, whereas consumption of P and K fertilizers increased annually by 1.7 percent and 6 percent, respectively. Therefore, the NPK ratio improved to 6.3:2.7:1. During 2018-19, there was 4.7 percent increase in urea consumption over the previous year whereas consumption of P and K registered a decline, resulting in a N,P,K ratio of 7.5:2.8:1. In 2019-20, due to a normal monsoon and thereby adequate availability of water in the reservoirs, there was a significant increase in the consumption of N (8.4%), P (26.6%) and K (12%) compared to the previous year. The NPK ratio for 2019-20 stood at 7.2:3.2:1.
- 3.36 In order to achieve higher fertilizer efficiency, it is important to ensure optimum mix of three macronutrients viz. nitrogen (N), phosphorus (P) and potassium (K) and micro/secondary nutrients. Imbalanced use adversely affects soil fertility and consequently crop productivity. While prices of P and K fertilizers have been decontrolled under the Nutrient Based Subsidy (NBS) regime, urea is still sold at the statutory notified uniform sale price. Price of urea has remained constant for many years, whereas retail prices of DAP and MOP have significantly increased in post-NBS period. This policy has encouraged overuse of urea and has resulted in imbalance in use of N, P and K.
- 3.37 Although measures like neem coating of urea have reduced diversion of urea towards non-agricultural use but further efforts are required to correct fertilizer nutrient imbalance and improve soil health. While the need to improve productivity of Indian agriculture is a dire need, it should not come at the cost of long-term adverse impact on soil health in particular and environment in general.

Price Policy for Rabi Crops

Chart 3.13: Trend in Fertilizer Consumption during Rabi Season



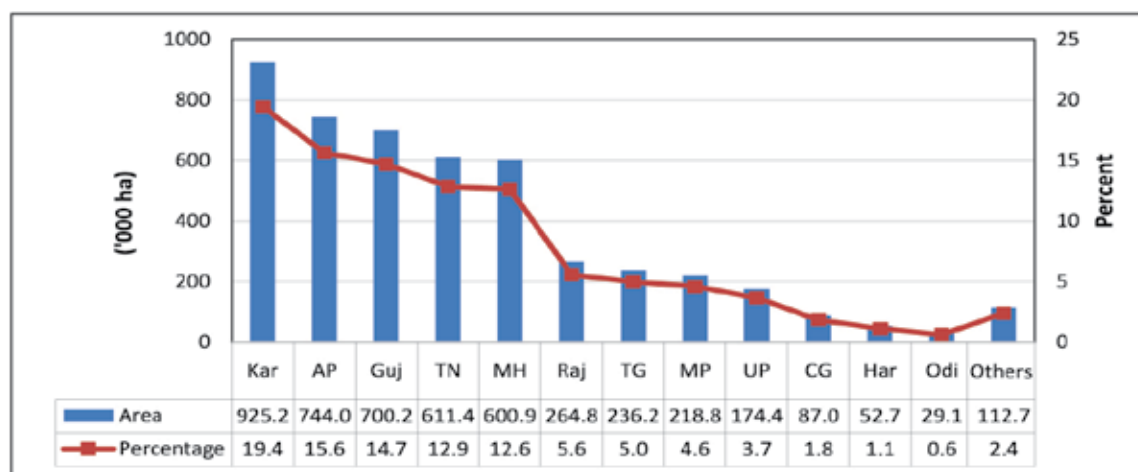
*Estimated

Source: Fertilizers Association of India

Irrigation

- 3.38 Lack of irrigation facilities and poor water use efficiency are major factors behind India not achieving its full yield potential. Less than 50 percent of India's net sown area is under irrigation. Moreover, in areas where there is assured irrigation, inefficient use of water is a major problem, which is partly due to subsidised access to electricity resulting in excessive withdrawal of groundwater and low water rates of surface irrigation water.
- 3.39 In order to enhance irrigation coverage and improve water use efficiency, Government of India launched "Pradhan Mantri Krishi Sinchayee Yojana" (PMKSY). The "Per Drop More Crop (PDMC)" component of PMKSY focuses on enhancing water use efficiency at farm level through micro irrigation technologies viz. drip and sprinkler irrigation systems. During the last five years (2015-16 to 2019-20), 47.6 lakh hectares have been covered under micro irrigation through PMKSY-PDMC. The distribution of area covered under PMKSY-PDMC is shown in Chart 3.14. Karnataka accounted for the highest share (19.4%) of the total coverage under PMKSY-PDMC, followed by Andhra Pradesh (15.6%). Rajasthan, which has a low overall irrigation coverage, had a relatively lower share of area (5.6%) under PMKSY-PDMC. Overall, top-10 States accounted for 97.6 percent of the total area covered under micro-irrigation under PMKSY-PDMC. Efforts are needed to expand coverage of micro-irrigation to improve water use efficiency and coverage of irrigation.

Chart 3.14: Progress of Per Drop More Crop Component under PMKSY in Selected States



Source: Ministry of Agriculture and Farmers Welfare

- 3.40 Since more than 50 percent of India's net sown area is under rainfed farming, Department of Land Resources (DoLR) has been developing rainfed and degraded areas under the Watershed Development Component of PMKSY (PMKSY-WDC). The activities undertaken inter-alia include ridge area treatment, drainage line treatment, soil and moisture conservation, rainwater harvesting, nursery raising, afforestation etc. Under PMKSY-WDC, out of 6382 projects being funded by DoLR, as on June 30, 2020, 3660 (57.4%) have been completed, 287 (4.5%) are in consolidation phase and 2435 (38.2%) are in works phase. It is important that the pace of completion of pending projects be speeded in order to improve agricultural productivity in rainfed areas.

Agricultural Credit

- 3.41 Credit plays a crucial role in meeting working capital requirement in agriculture and facilitating long-term investment in irrigation, land development, machinery etc. Over the years, there has been a significant increase in flow of institutional credit to farm sector and role of commercial banks has increased. The institutional credit to agriculture has increased from ₹5.1 lakh crore in 2011-12 to ₹13.6 lakh crore in 2019-20 and has exceeded the target several times (Chart 3.15). The share of term loans in total agricultural credit disbursed, which showed a declining trend during 2008-09 to 2012-13 due to introduction of interest subvention scheme and Kisan Credit Card loans, showed improvement in the recent years. The share of term loans increased from 19.3 percent in 2015-16 to 39.6 percent in 2019-20, which will help in increasing capital formation in agriculture.
- 3.42 The share of institutional sources in agricultural credit disbursement has increased over the years. As per NABARD All India Rural Financial Inclusion Survey (NAFIS) Report 2016-17, the share of institutional credit was about 72 percent while non-

Price Policy for Rabi Crops

institutional was 28 percent. Within institutional sources, commercial banks have increased their share, whereas cooperative banks, which have deep penetration in rural areas, have gradually lost their dominant position (Chart 3.16). The share of RRBs has remained constant at around 12 percent. However, issues related to regional disparities, dependence of small and marginal farmers on non-institutional sources need to be addressed.

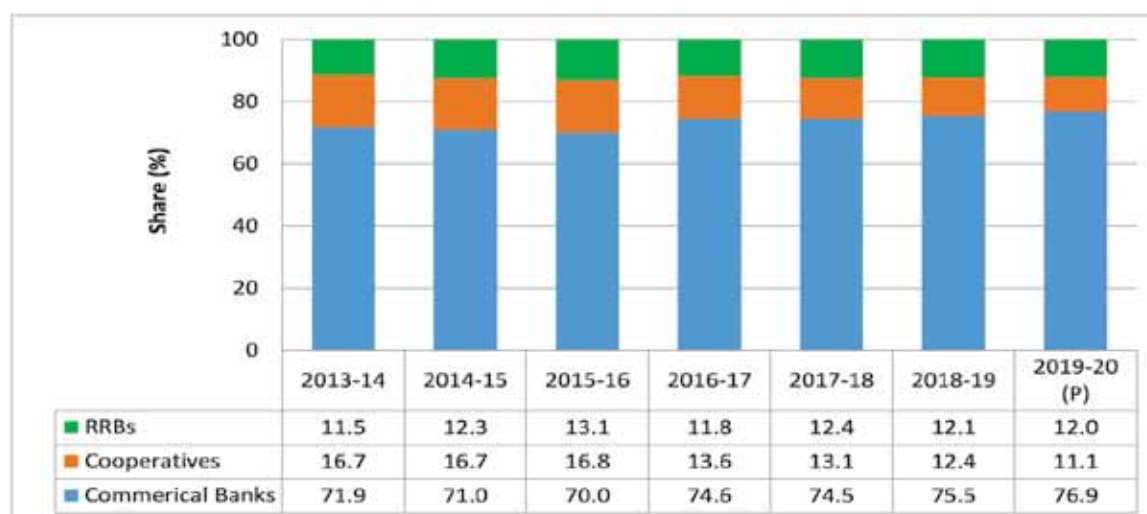
Chart 3.15: Trends in Ground Level Credit Flow to Agriculture and Share of Term Loan in Total Agricultural Credit, 2008-09 to 2019-20



Note: *P: Provisional

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

Chart 3.16: Relative Share of Commercial Banks, Regional Rural Banks (RRBs) and Cooperative Banks Ground Level Flow to Agriculture



Note: *Figures are in ₹Lakh Crore *P: Provisional

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

Crop Productivity Trends and Drivers

- 3.43 In order to facilitate access to institutional credit, Government of India has launched a campaign for saturation of all PM-KISAN beneficiaries with KCC. There were about 6.67 crore active KCCs in the country on January 31, 2020, while total number of operational holdings is about 14.6 crore. It is expected that nearly 3 crore new KCCs will be issued after saturation of PM-KISAN beneficiaries with KCC and will help in bringing more farmers under the ambit of institutional credit.

Mechanization

- 3.44 Agricultural mechanization plays a critical role in improving productivity and reducing costs thereby making farming more remunerative. Further, increased mechanization helps to overcome shortage of labour. To encourage farm mechanization, Department of Agriculture Cooperation and Farmers' Welfare has been implementing the Centrally Sponsored Scheme 'Sub-Mission on Agricultural Mechanization (SMAM)' from April 2014 with the objectives of increasing the reach of farm mechanization to small and marginal farmers and to the regions where availability of farm power is low and promoting 'Custom Hiring Centres' to offset the adverse economies of scale arising due to small landholding and high cost of individual ownership. Under the Scheme, awareness is created among stakeholders through demonstration and capacity building and ensuring performance testing and certification at designated testing centers located all over the country. In order to make effective use of machines available with the Custom Hiring Centres and farmers, the Department has also developed and launched a multi-lingual mobile app-based aggregator platform 'CHC-Farm Machinery' which connects the farmers with Custom Hiring Service Centers in their area.
- 3.45 Further, 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' is being implemented w.e.f. April 2018 to promote in-situ management of crop residue to protect environment from air pollution and prevent loss of nutrients and soil micro-organisms caused by burning of crop residue.

Extension Services

- 3.46 Extension Services in agriculture play a vital role in the last mile delivery of farm-inputs like seeds, fertilizers, diffusion of best practices in farming and on-boarding of farmers in various Schemes of the Government. During the Commission's consultation with various States, it has come to light that most of the State extension networks suffer from serious manpower shortage, which hampers their efficient delivery of inputs and services. From the responses received by State Governments, it is seen that agricultural extension networks in States like Haryana and Uttar Pradesh are functioning at less than half of their sanctioned strength whereas Karnataka and Rajasthan have more than 40 percent vacancies in agri-extension services (Annex Table 3.1).
- 3.47 As the extension services in agriculture are delivered through field functionaries, lack of manpower would reflect in limited percolation of services, low fund-utilization in

various Government Schemes in agriculture sector and eventually, low performance of agriculture sector. While efforts for creating Public-Private Partnerships and use of media and IT based solutions to augment extension services are being done, the urgent need to fill the vacancies in this area needs to be prioritised by State Governments.

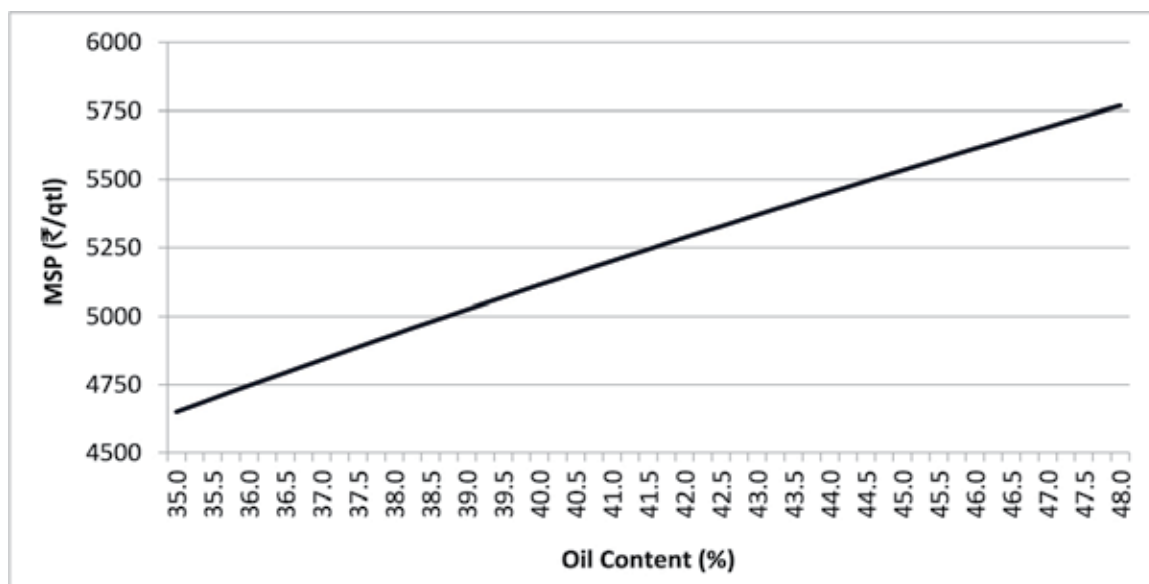
Diseases and Pests

- 3.48 During the current rabi season, Rajasthan reported major locust attacks affecting large-scale standing crop of wheat and barley in the State. The gram crop in the state was affected by locust and sporadic attack of cut worm and pod borer. However, enough stocks of plant protection chemicals were available to deal with the problem.
- 3.49 In Haryana, which is a major wheat producing State in the country, yellow rust disease, nematodes and leaf smut affected about 1.9 lakh hectares of area under wheat. In rapeseed & mustard crop, an area of about 88 thousand hectares was affected by white-rust disease, downy mildew and alternaria blight.
- 3.50 Bihar reported incidence of wilt disease in gram and lentil, severe attack by pod borer in gram, lucern caterpillar and pod borer in lentil and aphids attack in rapeseed and mustard. The damage due to these diseases and pests were minimised by timely application of chemicals. There is a need for timely and effective strategies for prevention and integrated control of both pests and diseases.

Linking MSP with Oil Content in Rapeseed & Mustard

- 3.52 The oil content in R&M seed varies widely across different varieties and therefore uniform MSP is not desirable. Thus, in order to increase area under high oil-yielding varieties of R&M and incentivise farmers, MSP of R&M seed should be linked to the oil content. The Commission suggests that farmers should be incentivized for higher 'oil content'. On the basis of detailed discussions held with various stakeholders such as R&M cultivators, processors, scientists, the Commission recommends that the MSP of R&M be linked to the basic 'oil content' of 35 percent in R&M seed and farmers be incentivized for every 0.25 percent point increase in 'oil content' beyond this level.
- 3.53 To determine the incentive for higher 'oil content', one quintal of R&M seed will give 35 kg of oil and 65 kg of oil cake. Adjusting the value of cake, the cost of R&M seed (oil without cake) would be ₹3415 which will contain 35 kg of oil. Thus, the MSP will increase by ₹21.46 per quintal for every 0.25 percent point increase in oil content (Chart 3.17). Cost per unit of oil content slowly decreases with increase in 'oil content' (Annex Table 3.2). Taking average oil content between 35 percent and 48 percent, the average cost for every 0.25 percent point works out to ₹21.46 per quintal. Hence, Commission recommends that MSP of R&M seeds should be increased by ₹21.46 per quintal for every 0.25 percent point increase in 'oil content' over and above the base oil content of 35 percent in R&M seed.

Chart 3.17: MSP based on Oil Content of R&M



Recapitulation

- 3.54 Productivity of all rabi crops has shown an improvement in QE2019-20 compared to the last quinquennial. However, productivity remains low for most crops compared to global levels due to various reasons like lack of irrigation facilities, non-availability of quality seed, poor extension services, sub-optimal utilization of resources etc. Further, there are large inter-State and inter-District variations in productivity and substantial yield gaps. Thus, a vast potential exists to increase agricultural productivity and production by adopting yield gap bridging strategies.
- 3.55 Some of the strategies that can be adopted to enhance productivity include formulation of seed rolling plans at State/UT level, correcting fertilizer imbalance to preserve soil health, extending the reach of formal agricultural credit to small and marginal farmers and in eastern and north-eastern region, addressing shortage of extension staff and effective control incidence of crop diseases and pest attacks.



Chapter 4

Trade Performance, Competitiveness and Outlook for Indian Agriculture

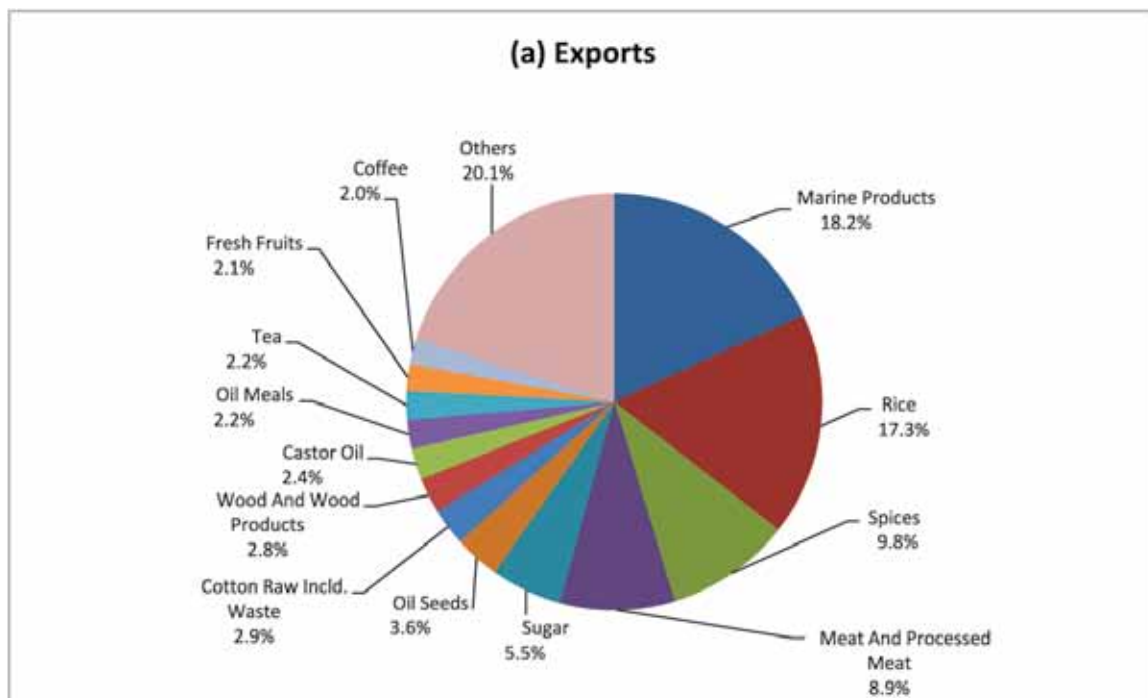
Chapter 4

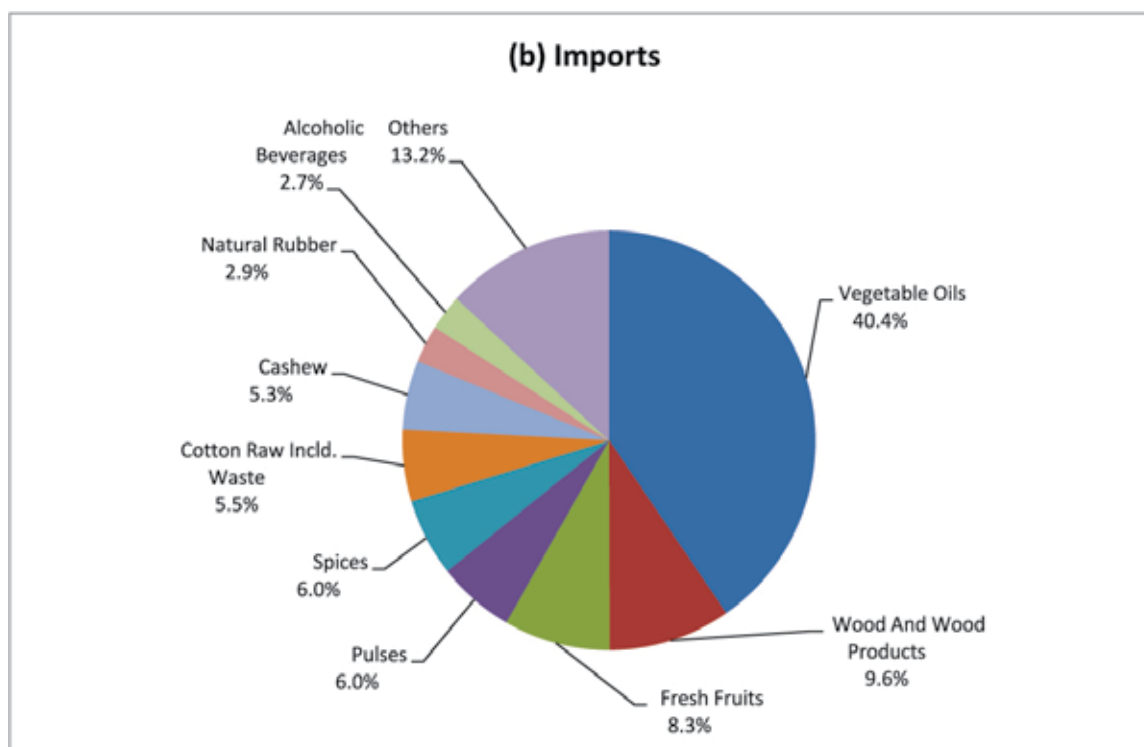
- 4.1 As per World Trade Statistical Review 2019, world merchandise exports increased on average by 1.8 percent per annum during 2008 to 2018. Exports of world agricultural products recorded a higher growth and increased by 3.1 percent annually and share of agri-exports in total exports increased from 8 to 10 percent during 2008-18. In 2018, top ten exporters of agricultural products contributed 72 percent of the world exports and the top seven exporters remained same in 2017 and 2018, led by the European Union, United States, Brazil and China. In 2018, India moved up to 8th position and Australia dropped to 9th position among top exporters of agricultural products. World exports of the agricultural products increased by 5 percent in 2018. Among top ten agri-exporters of 2018, China recorded the highest increase (9%) in its agricultural exports, followed by Brazil (6%) and Mexico (6%), while Australia (-10%), and Indonesia (-7%) witnessed a significant decline. An analysis of the share of India's agri-exports and imports in global agri-exports and imports showed an increase during 2005 to 2017. Share of agri exports rose from 1.2 percent to 2.2 percent in global exports while share of agri-imports increased from 0.8 percent to 1.7 percent in global imports over the same period.
- 4.2 As per DGCIS, India's agri-exports declined by about 7.6 percent in 2019-20 over the previous year and stood at ₹261.9 lakh crore. Meanwhile, imports of agricultural products increased by 4.9 percent and totalled ₹169.7 crore in 2019-20. The share of India's agri-exports in total exports of the country decreased from 13.2 percent in 2017-18 to 12.3 percent in 2018-19 and further fell to 11.8 percent in 2019-20. This was mostly due to a decline in the value of exports of rice, meat and processed meat and oil meals. The share of agri-imports in total imports declined from 5.9 percent in 2017-18 to 4.5 percent in 2018-19 but increased to 5.1 percent in 2019-20, due to increase in imports of pulses, spices, cotton (raw) and oilseeds.



- 4.3 During 2019-20, India's overall exports declined but decline in agri-exports was much steeper compared with overall exports, wherein total merchandise exports decreased by 3.9 percent but agri-exports declined by 7.6 percent. Ranking of products in India's export basket also underwent inter-se changes in 2019-20, for example, marine products (18.2%) have replaced rice (17.3%) as the leading agricultural export product, followed by spices (9.8%), meat and processed meat (8.9%) and sugar (5.5%). Top ten products accounted for more than 73 percent of total agri-exports. In the case of imports, main commodities that India imports include vegetable oils (40.4%), wood & wood products (9.6%), fresh fruits (8.3%), pulses (6%) and spices (6%). Top five products accounted for more than 70 percent of total agri-imports in 2019-20. The breakdown of agricultural trade by main commodity groups is presented in Chart 4.1.
- 4.4 India continues to be a net exporter of agri-commodities and trade surplus increased from ₹83 thousand crore in 2017-18 to ₹122 thousand crore in 2018-19 due to decline in agri-imports by 8 percent combined with impressive increase in agri-exports by 9.6 percent. However, trade surplus declined by 24.2 percent in 2019-20 and stood at ₹92 thousand crore driven by increase in agri-imports and steep decline in agri-exports. This chapter discusses trade patterns and price trends in domestic and world markets of mandated major rabi crops viz. wheat, barley, gram, lentil, rapeseed & mustard and reviews the trade policy changes in recent years and its outlook.

Chart 4.1: Value Share of India's Agricultural Exports and Imports, by Commodity/Group, 2019-20



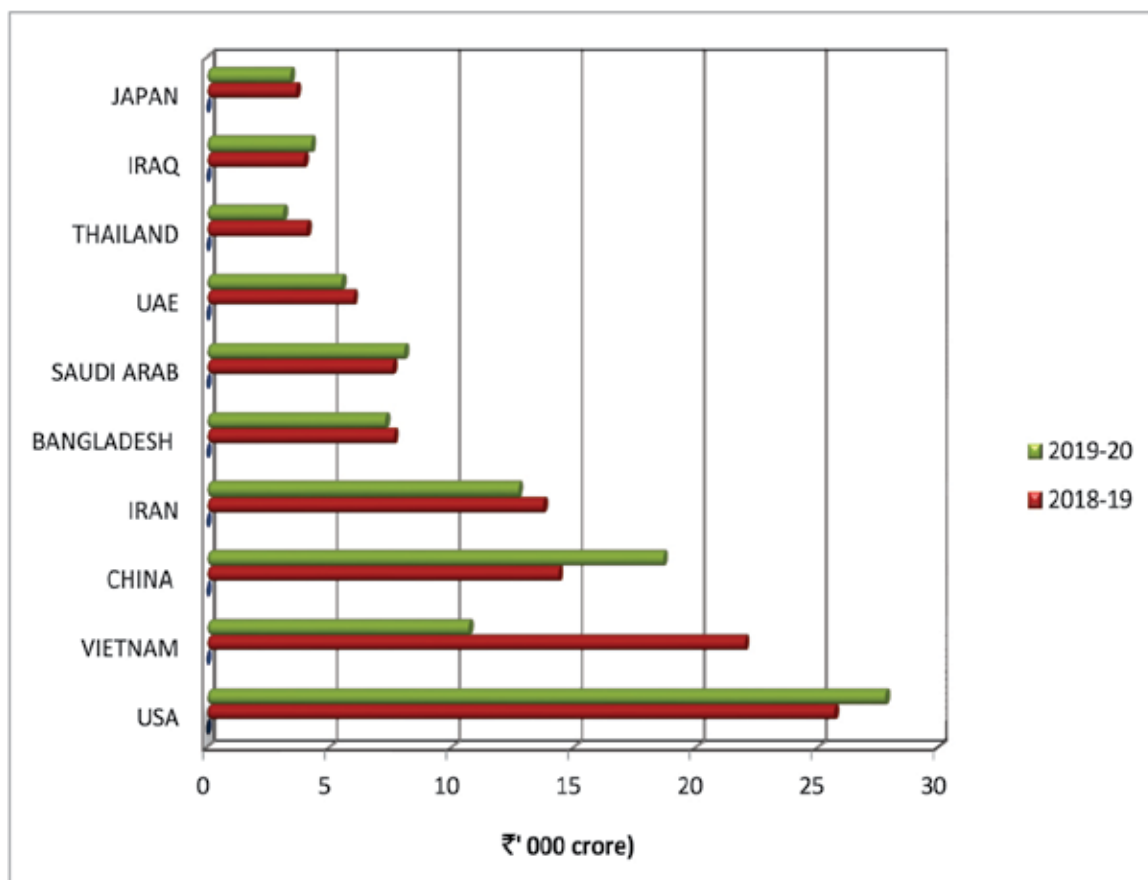


Source: Directorate General of Commercial Intelligence and Statistics, Ministry of Commerce & Industry

- 4.5 India's top ten agricultural export markets recorded decline from ₹152 thousand crores in 2018-19 to ₹145.5 thousand crores in value in 2019-20 (Chart 4.2). However, the value of these markets accounted for a higher share of the total value of agricultural exports in 2019-20 at 55.6 percent, an increase from 53.9 percent in 2018-19. Top export destination of agri commodities from India is USA. Indian exports to USA in 2019-20 accounted for ₹27,814.8 crore (10.6 %), followed by China (7.1%), Iran (4.9%), Vietnam (4.1 %), and Saudi Arabia (3.1%). In two out of the top five countries, the export value increased over the previous year and exports declined in the case of the other three destinations. In case of USA, the increase in exports represented an amount of about ₹2100 crore. Similarly, exports increased to China by ₹4306 crores. Exports to Vietnam declined significantly by ₹11,302 crore, exports to Iran declined by ₹1023 and Bangladesh by ₹346.3 crore in 2019-20.



Chart 4.2: Value of Top 10 Indian Agricultural Export Markets, 2018-19 and 2019-20



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

- 4.6 Annex Table 4.1 shows the value of top ten Indian export markets for ten major agricultural products in 2019-20 and 2018-19. Major commodities that India exports include, marine products, rice, spices, meat, sugar, oil meal, cotton and castor oil. It is observed that marine products are being exported mainly to USA, China, Japan, Vietnam, Thailand, UAE, and Spain. Basmati rice is exported mainly to Middle East countries, USA and UK, whereas non-basmati rice is being exported to Nepal, Benin, UAE and other African nations. Major destinations for Indian spices are China, USA, Hong Kong, Bangladesh, Thailand and Iran. Vietnam, Malaysia, Egypt, Indonesia, Iraq are the major destinations of meat from India. Indian Sugar has a good demand in Iran, Sudan, Somalia Sri Lanka and Bangladesh. Indian oil meals are exported to USA, Korea RP, Iran, and Bangladesh. Cotton from India is being imported mainly by Bangladesh, China and Vietnam. Similarly, Plywood from India is being exported to USA, Germany and Netherlands. Major importers of Indian castor oil are China, Netherlands and USA.

Trade Performance and Price Trends**Cereals****Wheat**

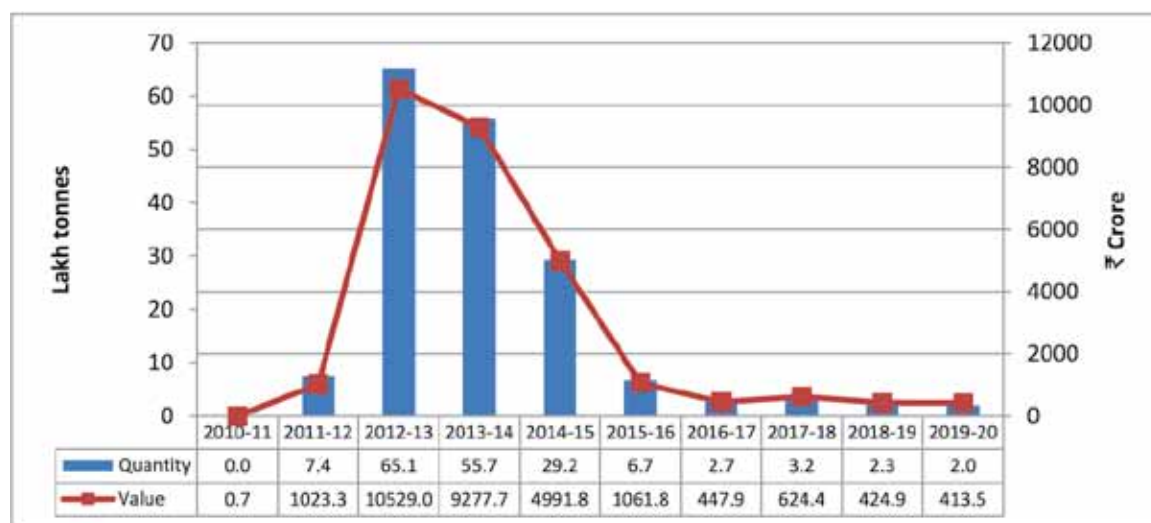
- 4.7 As per USDA 2020 (July), global production of wheat was 752.9 million tonnes in TE2019-20, out of which about 24.2 percent was traded. European Union (EU) is the largest producer of wheat with a share of 20.3 percent, followed by China (17.5%), India (13.6%) and Russia (9.6%). EU is also the largest exporter of wheat with a share of 20.2 percent, followed by Russia (18.3%), Canada (12.3%), and Ukraine (10.9%). Though the top wheat importing countries has remained same in 2019-20 as in 2018-19, their shares have undergone changes. Egypt has become the largest importer with a share of 7.1 percent, followed by Indonesia (5.7%), Philippines & Brazil (3.8%) and Algeria (3.5%). Wheat exports are more concentrated than imports, as the share of top five exporters is 69.9 percent, while top five importers account for about one-fourth of total imports. In 2020-21, the global production of wheat is forecast to increase due to record production in India as well as larger crops in China, Turkey and Australia more than offsetting decline in EU and Ukraine. Global consumption of wheat is forecast to decline in 2020-21, mainly on account of reduced feed and residual use in Australia and the EU. Global trade is slightly up with significantly higher imports by Iran, which more than offset reduced imports by Turkey. With less wheat demand for feed, EU is expected to continue as a major exporter of wheat despite its significantly lower wheat production. EU is projected to be the second-largest wheat exporter in 2020-21 with Russia forecast to regain its position as top global wheat exporter and exports from Australia will rise in 2020-21 due to favourable planting conditions coupled with reduction in crops of EU and Ukraine.
- 4.8 India is not a major player in global wheat market and has been an occasional importer/exporter of wheat depending upon the domestic demand-supply situation and world prices. In August 2003, the Government of India had prohibited exports of wheat from Central Pool due to significant fall in wheat production in 2002-03. Exports on private account were also prohibited on February 9, 2007, so there were no exports of wheat from India during 2007-08 to 2010-11. The ban on exports was lifted on September 9, 2011 when export of 20 lakh tonnes of wheat was allowed under Open General License (OGL) by private parties from privately held stocks through Electronic Data Interchange (EDI) enabled ports. From 7th February 2012, unrestricted exports of wheat under OGL have been allowed. India's exports of wheat were at a record level of 65.1 lakh tonnes during 2012-13. However, thereafter exports witnessed a steady decline due to stiff competition from Australian and Ukrainian wheat. Other factors that contributed to the decline in wheat exports were higher domestic prices, lower production in the country during 2014-15 and falling global prices (from as high as US\$360/MT for Wheat (U.S.), No 2, Soft Red Winter (SRW) in November 2012 to about US\$140/MT in December 2016 and US\$181/MT in August 2019). There was a marginal increase in



wheat exports in 2017-18 but exports fell in 2018-19 and 2019-20. Despite record wheat production in last two years in the country and high stocks, wheat exports have not increased, as Indian wheat is uncompetitive due to higher domestic prices compared to world prices (Chart 4.3).

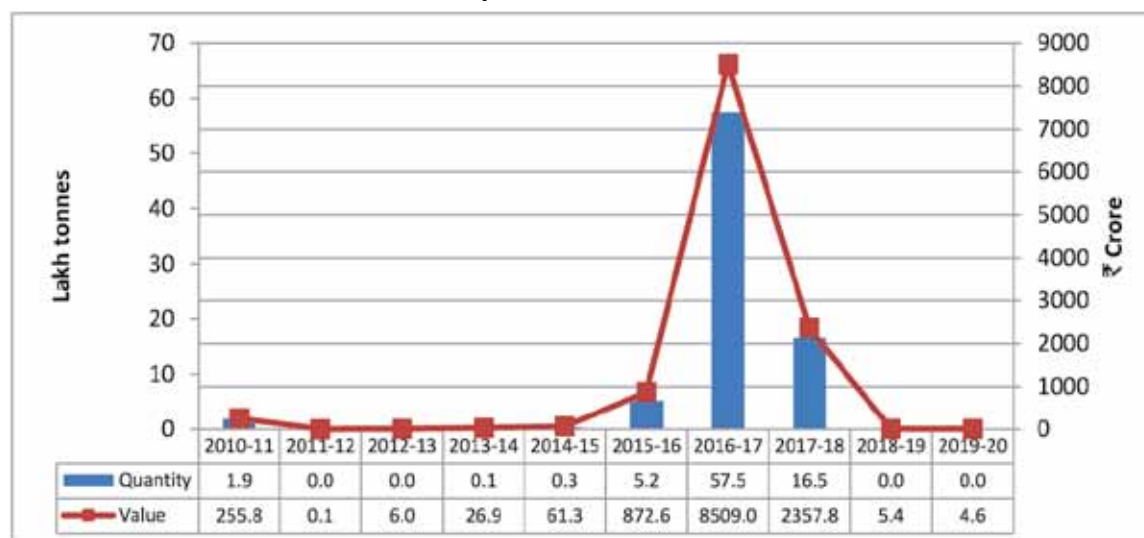
- 4.9 During 2006-07, wheat stocks with the Central Pool went below the Buffer Stock Norms and Government had to import 60.8 lakh tonnes of wheat during 2006-07 and 17.9 lakh tonnes during 2007-08. However, no imports of wheat have been made for the Central Pool thereafter but during 2015-16, private traders imported 5.2 lakh tonnes of wheat mainly from Australia. In order to control rising prices and to meet domestic demand due to lower production during 2014-15 and 2015-16, the Government reduced import duty on wheat from 25 percent to 10 percent on 23rd September 2016 and thereafter to zero percent on 8th December 2016. During 2016-17, India imported over 57.5 lakh tonnes of wheat valued at ₹8,509 crore, the highest quantity during last 10 years (Chart 4.4). However, due to significant increase in production in 2016-17 and to protect interest of wheat growers, Government imposed 10 percent import duty in March 2017, which was further raised to 20 percent in November 2017. In 2017-18, India imported around 16.5 lakh tonnes of wheat valued at ₹2,358 crore mainly from Australia, Russia and Ukraine. Although India was a net importer of wheat for two consecutive years (2016-17 and 2017-18), imports have come to a halt since 23rd May 2018, after import duty was raised to 30 percent. The import duty on wheat was increased to 40 percent in April 2019 in order to restrict cheaper imports of wheat due to decline in global prices and to support local farmers. However, in view of record production of wheat in 2019-20 and huge stocks in the Central pool, concerted efforts should be made to boost wheat exports in major importers in the region such as Indonesia, Bangladesh, etc.

Chart 4.3: India's Exports of Wheat, 2010-11 to 2019-20



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

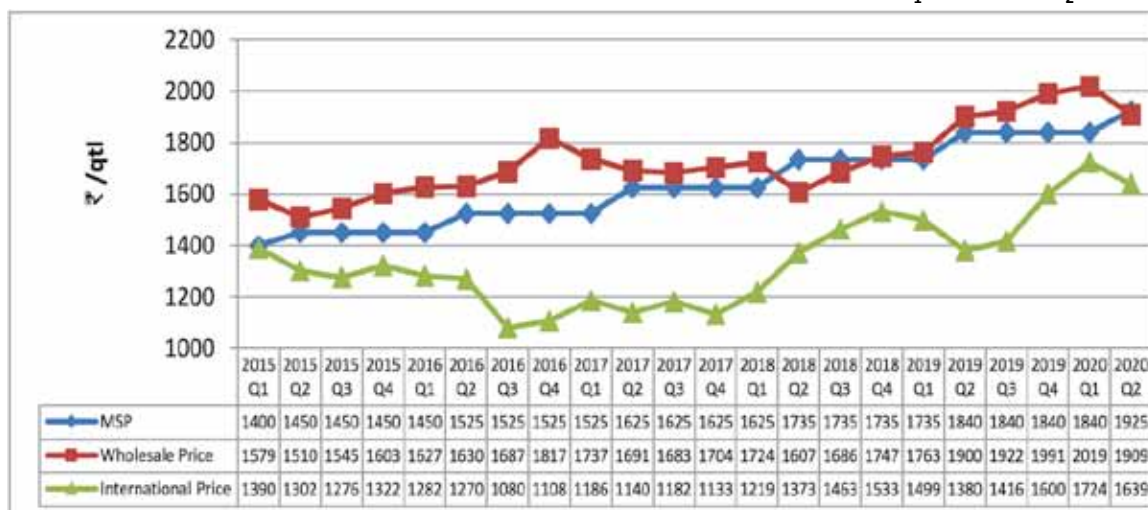
Chart 4.4: India's Imports of Wheat, 2010-11 to 2019-20



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

- 4.10 Global wheat prices were exceptionally high during 2011 to 2013 and witnessed a steep declining trend during next four years. India benefitted from high world prices and exported record quantity of 65.1 lakh tonnes in 2012-13 and 55.7 lakh tonnes in 2013-14. During the period from 2015(Q_1) to 2020(Q_2), domestic prices as well as MSP of wheat have been higher than international prices, which resulted in decline in wheat exports during this period. Global wheat prices, which increased during 2018, witnessed a declining trend during 2019 (Q_1 and Q_2) and moved upward till 2020 (Q_1) but there was continuous rise in domestic prices during the corresponding period. Both domestic and world prices declined in Q_2 of 2020 while MSP of wheat increased by 4.6 percent. It may be seen from the Chart 4.5 that MSP of wheat increased from ₹1735/qlt in 2018-19 to ₹1840 in 2019-20 and there was sudden jump in domestic price from ₹1763 in 2019(Q_1) to ₹1900 in 2019(Q_2) and witnessed an increasing trend till 2020 (Q_1). The MSP was raised to ₹1925 in RMS 2020-21 and domestic prices are likely to remain steady around MSP for next few months. The price movements are likely to be driven by Government open market sales and release of Government wheat stocks. Given the persistent gap between domestic prices and the international prices, Indian wheat is expected to remain export uncompetitive in the world markets.

Chart 4.5: MSP, Domestic and International Prices of Wheat, 2015 (Q₁) to 2020 (Q₂)



Note: 1. International prices are of the variety (US), No. 2, Soft Red Winter, export price delivered at the US Gulf port for prompt or 30 days shipment.

2. Wholesale prices are weighted average wholesale price of Bihar, Haryana, MP, Punjab, Rajasthan and UP, which cover 97 percent of production.

3. International prices of quarter 2020 (Q₂) are of April & May months only.

Sources: Directorate of Economics & Statistics, Ministry of Agriculture & Farmers Welfare for domestic wholesale prices and World Bank for International prices.

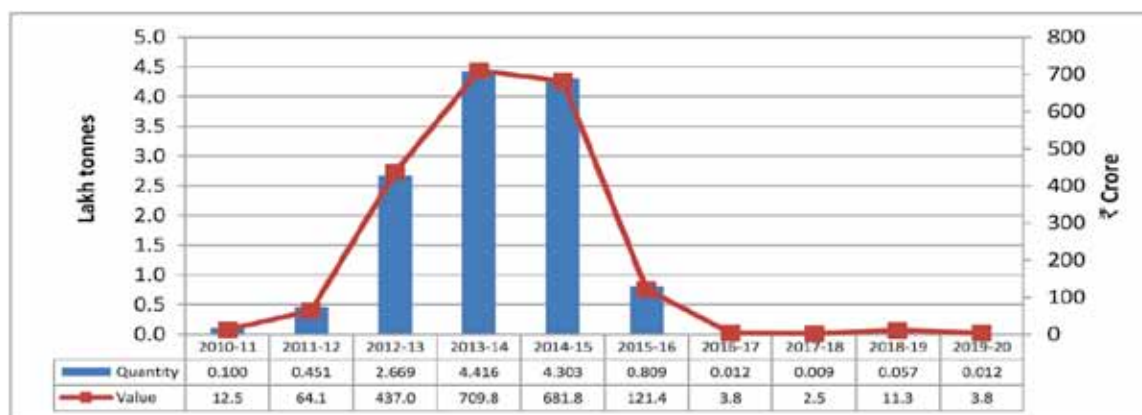
Barley

- 4.11 As per USDA 2020(July), global production of barley was 146.2 million tonnes in TE2019-20, out of which 17.8 percent was traded. EU is the largest producer of barley with production of 63 million tonnes (40.3% share), followed by Russia (12.8%), Ukraine (6.8%) and Canada (6.6%). EU is also the largest exporter with a share of 28.1 percent, followed by Ukraine (18.3%), Russia (16.0%) and Australia (12.6%). Saudi Arabia (29.3%) and China (20.7%) are the major importers of barley, followed by Iran (11.7%) and Japan (4.3%). Top three exporters and importers account for more than 62 percent and 61 percent of world exports and imports respectively.
- 4.12 Barley production in India has remained stagnant at about 1.5 million tonnes during the last two decades and as per Third Advance Estimates, production of barley is estimated to be 15.9 lakh tonnes in 2019-20. India's share in world barley production is about one percent and India is insignificant player in world barley market. During last 10 years, the highest exports were 4.4 lakh tonnes in 2013-14 and exports have been negligible during the last four years (Chart 4.6). Imports of barley in India have also been negligible so far. Quantitative restrictions on exports of barley were removed in March 2002 and import restrictions were removed in November 2002.

Price Policy for Rabi Crops

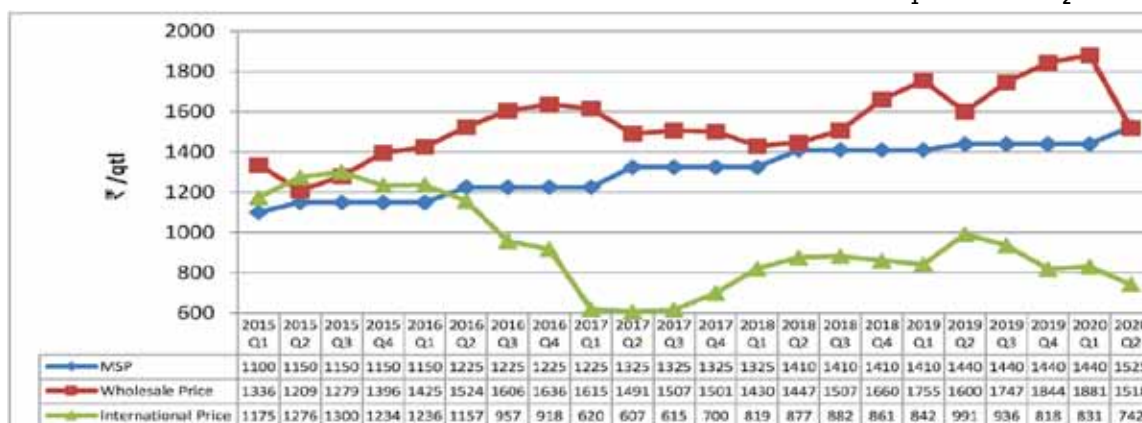
4.13 Trends in MSP, domestic wholesale prices, and international prices of barley are presented in Chart 4.7. The domestic wholesale prices are significantly higher than international prices. India exports small quantities of barley to neighbouring countries in the region where it enjoys freight advantage over other exporting countries like EU, Australia and Russia. Malting industry in India requires about 5-6 lakh tonnes of barley for beer and distilled beverages but these Industries import barley mainly from Argentina due to lower domestic production of required quality. Barley is also used in malted beverages. Thus, there is a need to increase barley production in the country and promote varieties having better malting and brewing performance as it has good demand from domestic FMCG sector and malting industry.

Chart 4.6: India's Exports of Barley, 2010-11 to 2019-20



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

Chart 4.7: MSP, Domestic and International Prices of Barley, 2015 (Q₁) to 2020 (Q₂)



Note: 1. International prices are of the variety (US) feed, No. 2, spot, 20 days To-Arrive, delivered Minneapolis from May 2012 onwards; during 1980-2012 April Canadian, feed, Western No. 1, Winnipeg Commodity Exchange, spot, World Bank wholesale farmers' price.

2. Wholesale prices are weighted average wholesale price of Haryana, Rajasthan and UP, which cover 79 percent of production.

3. International prices of quarter 2020 (Q₂) are of April & May months only.

Sources: DES, Ministry of Agriculture & Farmers Welfare for domestic wholesale prices and World Bank for International prices.

**Trade Performance, Competitiveness and Outlook for
Indian Agriculture**



Pulses

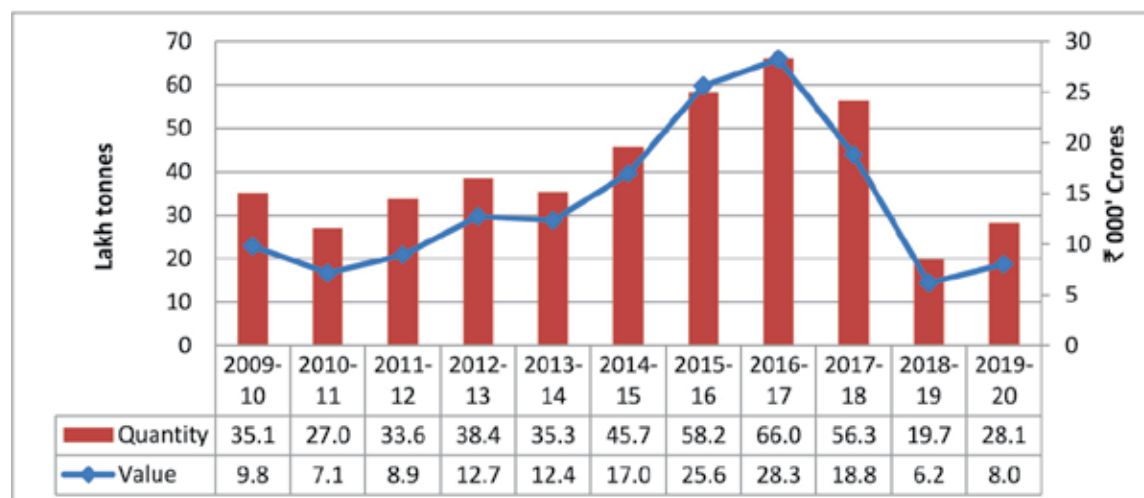
- 4.14 As per DGCIS trade data, pulses imports in the country witnessed a significant increase during 2010-11 and 2016-17 and volume of imports increased from 35.1 lakh tonnes in 2009-10 to 66 lakh tonnes in 2016-17 (Chart 4.8). However, due to record production of pulses in the country and other interventions such as high import tariffs and quantitative restrictions (QRs) to safeguard interest of Indian farmers, imports showed a steady decline after 2016-17 and were 19.7 lakh tonnes in 2018-19. Pulses imports increased to 28.1 lakh tonnes in 2019-20 due to fall in domestic production during 2018-19. However, despite record production of pulses (25.4 million tonnes) in 2017-18, India still imported about 5.6 million tonnes in 2017-18 and about 2.6 million tonnes in 2018-19, which had adverse impact on domestic market prices. In 2019-20, imports of lentil sharply rose to 8.1 lakh tonnes, from 2.5 lakh tonnes in 2018-19 and chickpea imports increased from 1.9 lakh tonnes to 3.7 lakh tonnes during the corresponding period. Lentil imports were mainly from Canada, Australia and USA, whereas, imports of peas were from Canada, Ukraine and Russia. Mozambique, Myanmar and Tanzania were major suppliers of tur (arhar) while chickpea imports were mainly from Russia, Tanzania and Turkey and urad from Myanmar and UAE.
- 4.15 In 2019-20, lentil constituted the largest share (28.9%) in total imports of pulses, followed by peas (23.7%), tur (arhar) (15.7%) and chickpea (3.7%) (Table 4.1). Canada, Myanmar and Mozambique were major exporters of pulses to India and accounted for nearly 60 percent total imports in the country in 2019-20. Other important suppliers were Russia, Australia, Tanzania, Ukraine and USA. The share of Myanmar in total imports has declined from 28.7 percent in TE2008-09 to 18.0 percent in TE2019-20 while share of Canada has decreased from 43.8 percent to 29.6 percent during the corresponding period. Canada is the largest exporter of peas (62.5%) and lentils (75.9%) to India, while 42.9 percent of tur (arhar) imports are from Mozambique, Russia supplies 26.8 percent of chickpea and more than 97 percent of urad imports in the country are from Myanmar.

Table 4.1: Leading Country Sources of India's Pulses Imports, 2019-20

Name	Imports (Lakh tonnes)	Share (%) in total pulses imports	Key Origin (%)
Lentil	8.1	28.9	Canada (75.9), Australia (13.1), USA (7.7)
Peas	6.7	23.7	Canada (62.5), Ukraine (12.9), Russia (10.1)
Tur (arhar)	4.4	15.7	Mozambique (42.9), Myanmar (32.2), Tanzania (11.5)
Chickpea	3.7	13.0	Russia (26.8), Tanzania (26.4), Turkey (14.4),
Urad	2.4	8.6	Myanmar (97.1), UAE (1.6), Singapore (0.9)
Moong	0.7	2.4	Tanzania (26.0), Mozambique (23.9), Brazil (13.7)
Others	2.2	7.6	-
Total	28.1	100	Canada (37.2), Myanmar (15.0), Mozambique (7.4)

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

Chart 4.8: India's Imports of Pulses, 2009-10 to 2019-20



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

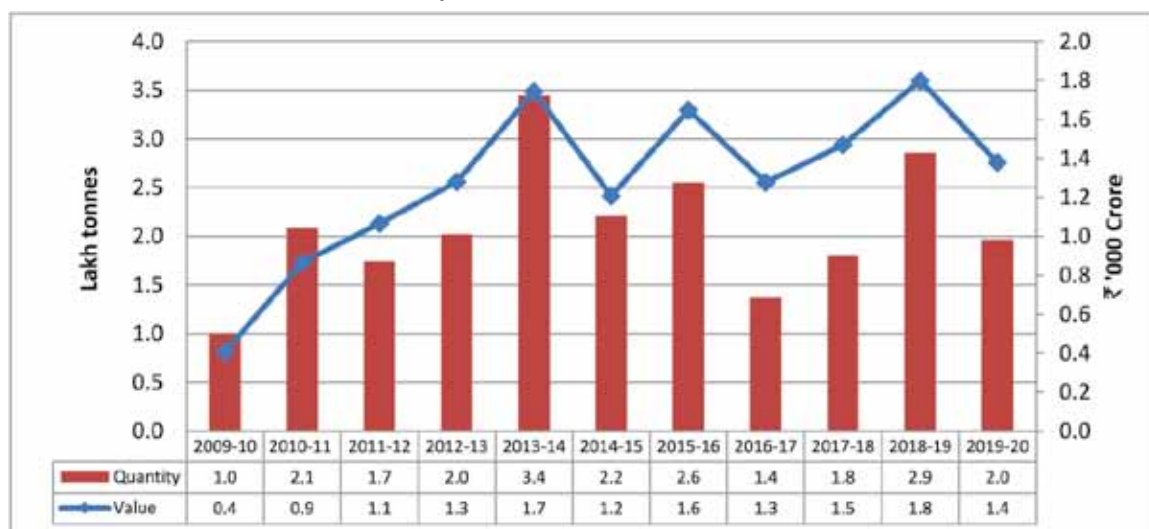
4.16 Before 1991, imports of pulses, like most agricultural products, were subjected to licensing and quantitative restrictions (QRs) but QRs were withdrawn and Imports were regulated through tariff rates subject to bound rates. Due to gap in demand and availability of pulses in the country, India was one of the largest importers of pulses in the world. Therefore, imports of pulses were placed under OGL with a lower import duty for a long time. An import duty of 5 percent was levied on pulses from 29th June 2001, which was increased to 10 per cent from 1st March, 2003 and reduced to zero percent from 8th June 2006. However, due to bumper production in 2016-17 and 2017-18 and high imports, domestic prices of most pulses fell below MSP in the country. With a view to incentivise pulses production and ensure remunerative prices to farmers, Government imposed import duty and quantitative restrictions on imports of pulses. An import duty of 10 percent was imposed from 28th March 2017 on tur (arhar) in a bid to check falling domestic prices and to support farmers. Government imposed quantitative restrictions on import of tur (arhar), moong and urad from 5th August 2017. In anticipation of a bumper crop of gram and falling domestic prices, the Government increased import duty on gram to 40 percent on 6th February 2018 and 60 percent on 1st March 2018. Import duty on lentil was also raised to 30 percent on 21st December 2017, which was further increased to 50 percent on 15th June 2019. In order to curb the cheap imports of pulses, Government imposed quota restrictions for 2020-21 wherein annual import quota for tur (arhar) and urad is fixed at 4 lakh tonnes each, while quota for moong and peas is fixed at 1.5 lakh tonnes. These quota restrictions will not apply to Government's import commitments under any bilateral/regional Agreement/Memorandum of Understanding. Annex Table 4.2 (a) presents key changes in trade policy for pulses since April 2019.

4.17 Exports of pulses were prohibited on 28th June 2006, initially for a period of six months, which was extended from time to time. The export prohibition on pulses was removed on 22nd November 2017 after bumper production of pulses in the



country and to ensure remunerative prices to farmers in domestic and export markets. It is evident from the data that exports of pulses increased after removal of export restrictions and exports increased from 1.4 lakh tonnes in 2016-17 to 2.9 lakh tonnes in 2018-19 but dropped to 2 lakh tonnes in 2019-20 (Chart 4.9). Major export destinations for Indian pulses are Bangladesh, China and Algeria.

Chart 4.9: Trends in Exports of Pulses from India, 2009-10 to 2019-20



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

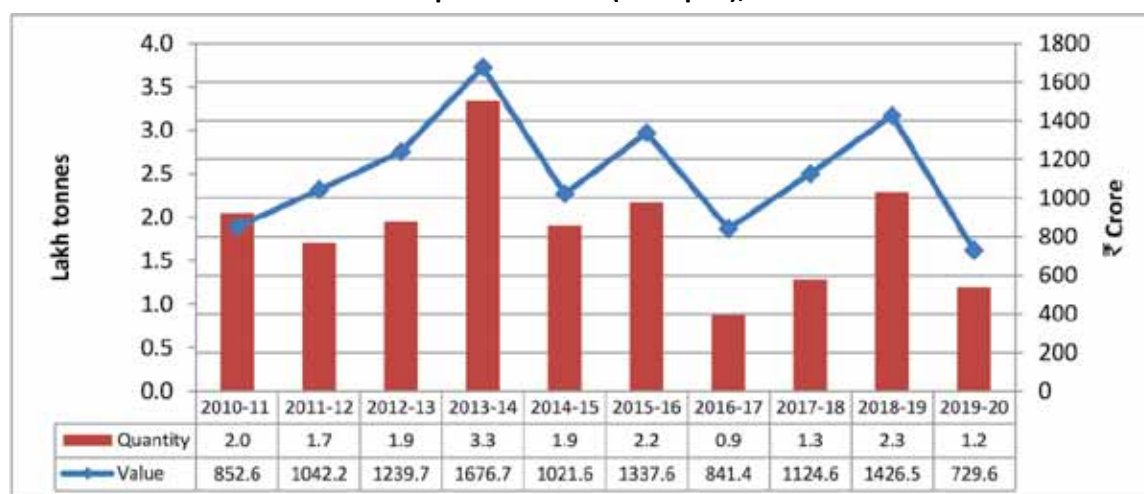
Gram (Chickpea)

4.18 Gram has the single largest share in India's export basket of pulses with 80 percent share in the total pulses export during 2018-19. India's exports (mostly kabuli chana) increased from about one lakh tonnes in 2009-10 to 3.3 lakh tonnes in 2013-14 but declined about 90 thousand tonnes in 2016-17. Exports of gram rose to 1.3 lakh tonnes in 2017-18 and 2.3 lakh tonnes in 2018-19 but fell to 1.2 lakh tonnes in 2019-20 (Chart 4.10). In order to incentivise exports Government of India announced 7 percent export incentive for Bengal gram (chana) on 1st March 2018 under the Merchandise Export from India Scheme (MEIS) for a period of three months until June 20, 2018 and raised import duty on kabuli chana to 60 percent to restrict imports. Imports of gram increased from one lakh tonnes in 2010-11 to 7 lakh tonnes in 2012-13 before declining to 2.8 lakh tonnes in 2013-14 due to higher production during 2013-14. Imports of gram increased to 4.2 lakh tonnes in 2014-15 and reached a peak of 10.8 lakh tonnes in 2016-17 due to low domestic production during 2014-15 and 2015-16. Record domestic production in 2017-18 and increase in import duty to 60 percent led to decline in imports of gram to 1.9 lakh tonnes in 2018-19 but imports increased to 3.7 lakh tonnes in 2019-20 (Chart 4.11). Yellow peas being a close substitute for gram, India imports large quantities of yellow peas. Imports of yellow peas peaked at 31.7 lakh tonnes in 2016-17 but dropped to 28.8 lakh tonnes in 2017-18, 8.5 lakh tonnes in 2018-19 and reached 6.7 lakh tonnes in 2019-20. In a bid to arrest declining prices of pulses, peas imports

Price Policy for Rabi Crops

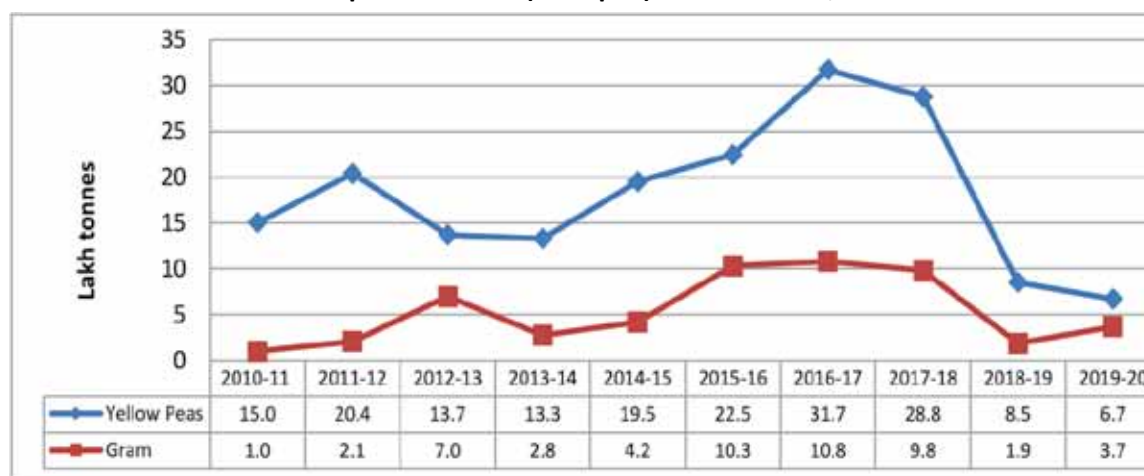
have been restricted for 2020-21 and 1.5 lakh tonnes imports shall be allowed and allotted only to millers/refiners. The import policy conditions such as Minimum Import Price (MIP) of ₹200/kg and port restriction through Kolkata sea port only for all peas as notified vide Notification No. 37, dated 18th December 2019 remain unchanged.

Chart 4.10: India's Exports of Gram (Chickpea), 2010-11 to 2019-20



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

Chart 4.11: India's Imports of Gram (Chickpea) & Yellow Peas, 2010-11 to 2019-20



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

Lentil (Masur)

4.19 India's exports of lentil increased from 11.2 thousand tonnes in 2017-18 to 15.1 thousand tonnes in 2018-19 and were 18.3 thousand tonnes in 2019-20 although its share in total exports of pulses declined from 6.2 percent to 5.5 percent and then increased to 9.3 percent during the same period due to rise in total export of pulses due to removal of export restrictions. Lentil imports increased from about 1.6 lakh

tonnes in 2010-11 to 12.6 lakh tonnes (21.6 percent of total pulses imports) in 2015-16 due to high domestic demand and fluctuating domestic production. However, imports declined to 8 lakh tonnes in 2017-18 due to higher domestic production and increase in import duty in December 2017. Imports of lentil further declined to 2.5 lakh tonnes in 2018-19 but increased to 8.1 lakh tonnes in 2019-20 due to fall in domestic production and restrictions on imports of other major pulses (Chart 4.12).

- 4.20 Prices of pulses led to inflationary pressure with pulses and products inflation based on CPI rising considerably from (-) 0.8 percent in April 2019 to 22.78 per cent in April 2020. Among rabi pulses, inflation rate of lentil increased from (-) 0.72 percent in January 2019 to 13.07 percent in February 2020. This reflected a decline in total pulses production by more than 13 percent and lentil production by 24.1 percent in 2018-19 over 2017-18. Pulses production is estimated to increase by 4.3 percent in 2019-20 but lower than 2016-17 and 2017-18 level. In order to check rising prices of pulses in general and lentil in particular, Government amended notification No. 50/2017-Cus dated 30.06.2017 and reduced import duty on lentil (masur) from 30 percent to 10 percent and lentils (masur) originating in or exported from USA from 50 percent to 30 percent till 31st August 2020. However, market prices of all major pulses have been ruling below MSP and reduction in import duty will have adverse impact on domestic prices. The Commission recommends that such decisions of allowing imports and/or reduction in import duties should not coincide with procurement season of the crops.

Chart 4.12: India's Imports of Lentil, 2010-11 to 2019-20



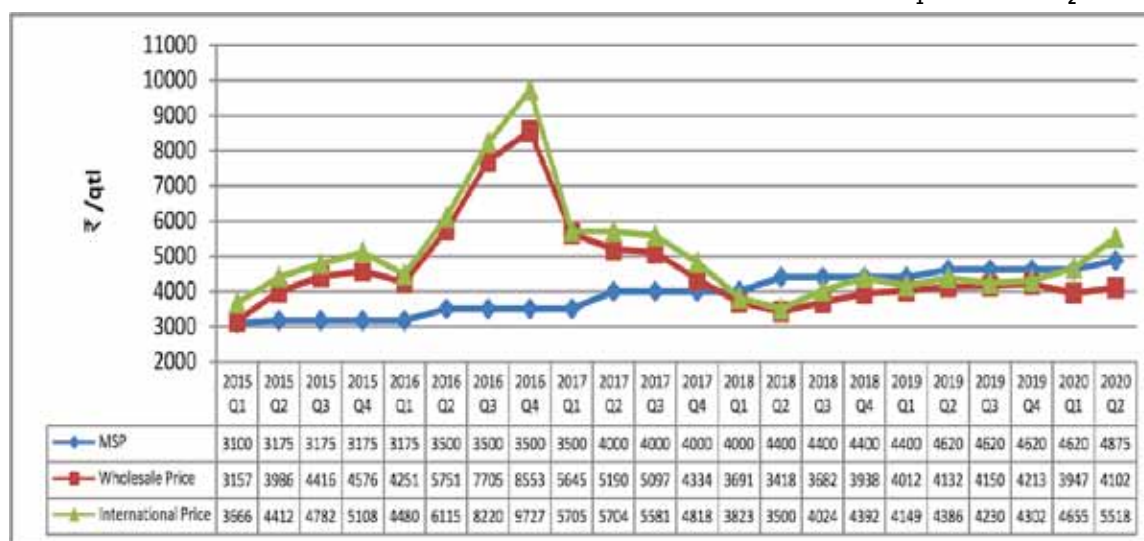
Source: Directorate General of Commercial Intelligence and Statistics, Ministry of Commerce & Industry

- 4.21 During the last five years, domestic wholesale prices of gram have been lower than international prices (Chart 4.13). Domestic prices and international prices of gram were higher than MSP from 2015(Q₁) onwards till 2017(Q₄) but international prices fell below MSP in 2018(Q₁) and remained below the MSP up to 2019(Q₄). International prices moved up during the last two quarters 2020(Q₁) and 2020(Q₂) and were above MSP. On the other hand, domestic wholesale prices remained well below the MSP from 2018(Q₁) to 2020(Q₂).

Price Policy for Rabi Crops

- 4.22 In case of lentil, both domestic and world prices showed an increasing trend during 2015 but recorded steep decline during 2016 and 2017. Domestic prices which were significantly higher than MSP during 2015-2017, fell below MSP during 2018(Q₁) to 2019(Q₁). MSP was higher than domestic and international prices in 2019(Q₂) but both domestic and international prices rose and were above MSP during 2020 (Q₁ & Q₂) (Chart 4.14).
- 4.23 In order to promote domestic pulses production, producers need to be protected through suitable tariff levels and other restrictions when international prices of pulses are below domestic wholesale prices. On the other hand, exports should be promoted in neighbouring countries and in the Gulf countries, Europe and the USA for Indian diaspora. There is also a need to have timely and effective procurement policy when market prices fall below MSP.

Chart 4.13: MSP, Domestic and International Prices of Gram, 2015 (Q₁) to 2020 (Q₂)



Note: 1. International prices are C&F Prices at Mumbai port.

2. Wholesale prices are weighted wholesale price of AP, Bihar, Karnataka, MP, Maharashtra, TN, UP and WB, which cover 88 percent of production. MSPs are inclusive of Bonus

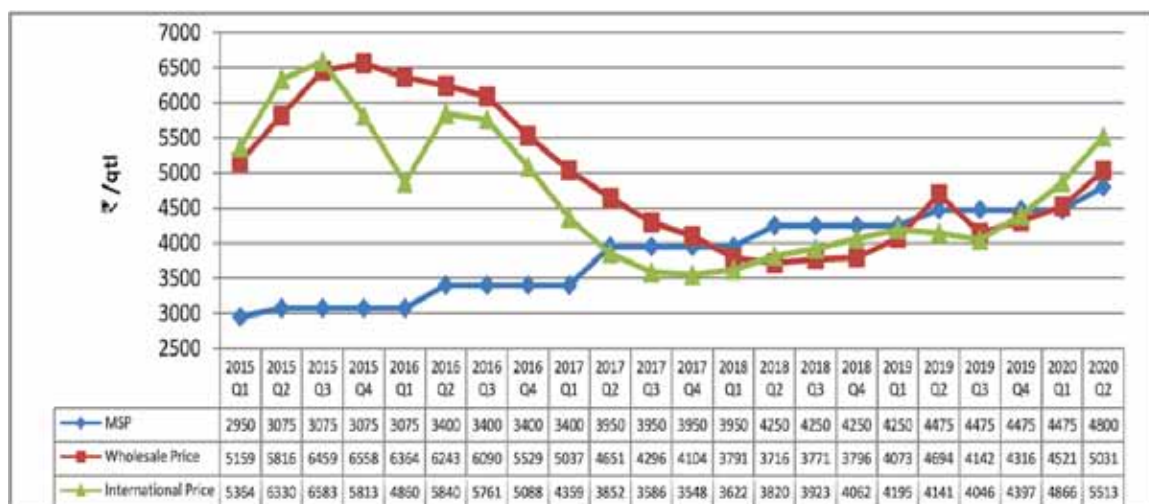
3. International prices of quarter 2020 (Q₂) are average prices of only two months (April & May)

Source: 1. Directorate of Economics & Statistics, Ministry of Agriculture & Farmers Welfare for domestic wholesale prices

2. Agriwatch for International prices.

**Trade Performance, Competitiveness and Outlook for
Indian Agriculture**

Chart 4.14: MSP, Domestic and International Prices of Lentil, 2015 (Q₁) to 2020 (Q₂)



Note: 1. International prices are C&F Prices at Mumbai port. 2. Wholesale prices are weighted average wholesale price of Bihar, MP, UP and West Bengal, which covers 88 percent of production in 2016-17, which cover 88 percent of production 3. MSPs are inclusive of Bonus 4. International prices of quarter 2020 (Q₂) are average prices of only two months (April & May)

Source: 1. Directorate of Economics & Statistics, Ministry of Agriculture & Farmers Welfare for domestic wholesale prices
2. Agriwatch for International prices.

Edible Oils and Oilseeds Complex

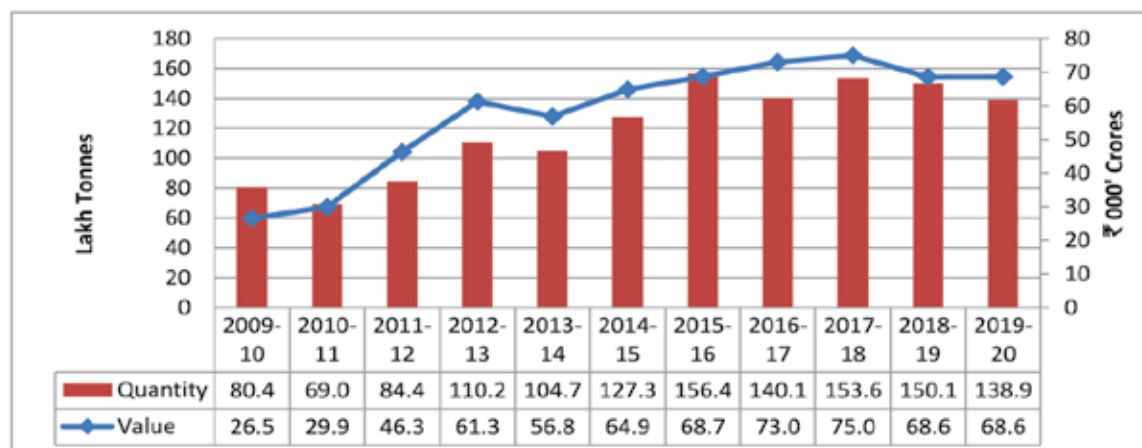
4.24 India is heavily dependent on imports to meet its edible oil requirements and is the largest importer of vegetable oils in the world. As per Press Information Bureau (PIB) of India's release dated 7th February, 2020, the annual requirement of edible oils is about 25 million tonnes (at current consumption level of 19 kg per person per year) out of which 10.5 million tonnes are produced domestically and remaining 60 percent is met through imports. Production and productivity of oilseeds in India has remained stagnant over last many years and there exists a large gap between demand and supply of edible oils, which has necessitated sizeable quantities of imports. The major challenges in oilseeds production in the country is low productivity as oilseed crops are largely grown under rainfed conditions and on marginal lands. There is an urgent need to address the issue of low productivity in oilseeds collectively by public and private sector.

4.25 As per USDA 2020 (July), global production of major oilseeds was 586.6 million tonnes in TE2019-20, out of which 29.9 percent was traded. In 2020-21, world oilseeds production is forecast at 604.2 million tons while exports are forecast to increase marginally (180.5 million tons) and global stocks are marginally lower (109.4 million tons) due to higher consumption. In 2019-20, Brazil was the largest producer, producing 131.2 million tonnes, with a share of about 22.7 percent. Other major producers were USA (18.5%), China (10.9%) and Argentina (9.6%). Brazil and USA accounted for about 74 percent of the global exports, with a share of 48.7

percent and 25.1 percent, respectively. The other major exporter is Canada (7.5%) and Argentina (5.5%). China is the single largest importer of oilseeds (100.2 million tonnes) with a share of 55.4 percent, followed by EU (12.6%), Mexico (4.2%) and Japan (3.2%).

- 4.26 According to USDA 2020(July), global production of vegetable oils was 202.2 million tonnes during TE2019-20, out of which 40.1 percent was traded. Indonesia was the largest producer with 48.3 million tonnes production accounting for 23.6 percent of world production in 2019-20, followed by China (13.2%), Malaysia (10.1%) and EU (8.9%). Indonesia (35.5%) and Malaysia (20.8%) account for 56.2 percent of global exports. India was the largest importer of vegetable oils with a share of about 18.8 percent, followed by China (14%) and EU (13.6%).
- 4.27 As per DGCIS trade statistics, India's imports of edible oils increased from 80.4 lakh tonnes (valued at ₹26.5 thousand crore) in 2009-10 to a record of 156.4 lakh tonnes (₹68.7 thousand crore) in 2015-16. However, imports declined by about 10 percent to 140.1 lakh tonnes in 2016-17 but increased in 2017-18 subsequently to 153.6 lakh tonnes (valued at ₹75 thousand crore) declined marginally to 150.1 lakh tonnes valued at ₹68.6 thousand crore in 2018-19 and were 138.9 lakh tonnes valued at ₹68.6 thousand crore in 2019-20 (Chart 4.15). International prices of edible oils particularly palm oil and soybean oil were at its peak during 2011 and 2012 during the last ten years. In 2019, prices of these oils have fallen to fifty to sixty percent of their peak prices in the preceding decade. Average prices of crude palm oil in 2019 were about US\$ 602 per tonne while crude soybean oil was about US\$765 per tonne. The fall in global prices of these oils, have eased the drain on exchange reserves of India. During the 10 years, imports of edible oils have more than doubled indicating a significant drain on foreign exchange reserves apart from severe adverse impact on domestic growers. To increase domestic availability of edible oils and to reduce of import dependency, a National Mission on Edible Oils (NMEO) covering both primary and secondary source of edible oils is proposed for next five years (2020-21 to 2024-25).

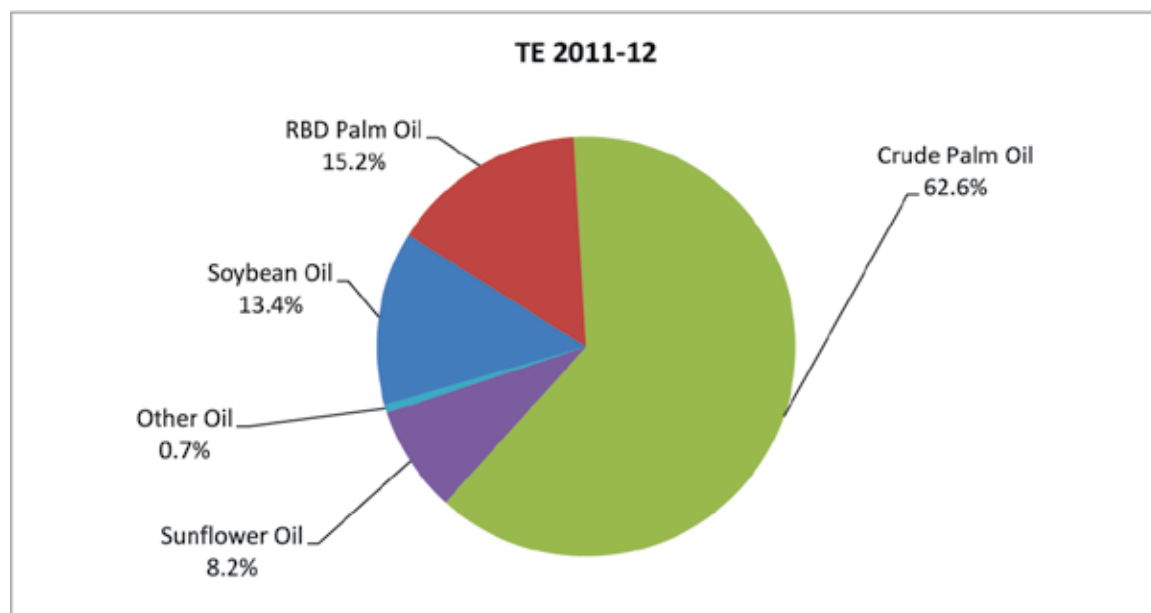
Chart 4.15: India's Imports of Edible Oils, 2009-10 to 2019-20



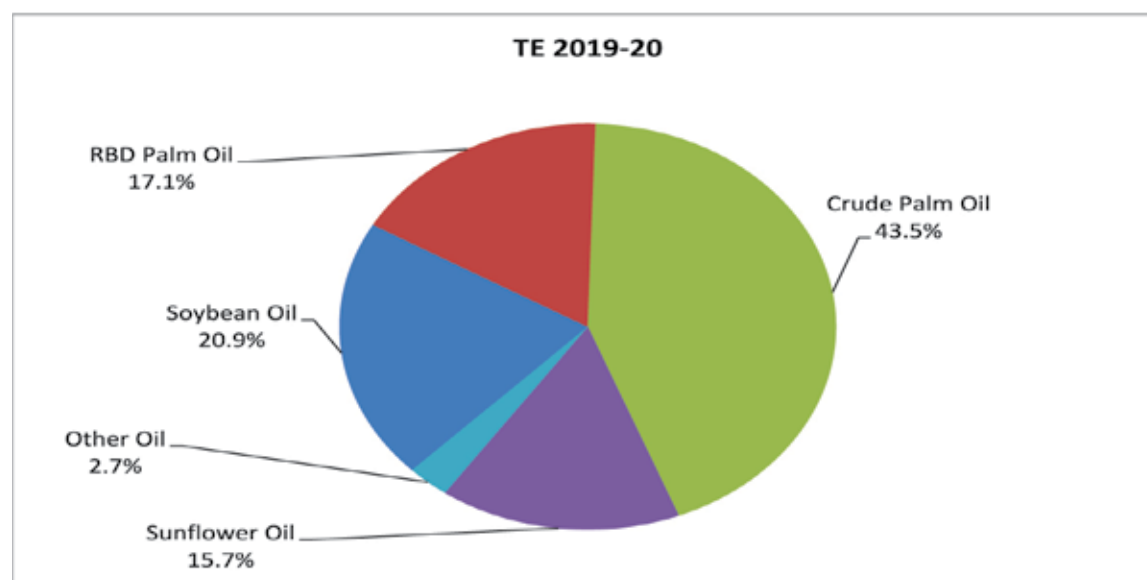
Source: Directorate General of Commercial Intelligence and Statistics, Ministry of Commerce & Industry

4.28 A closer look at trends in edible oil imports reveals a change in the pattern of imports. Total imports of edible oil increased from 77.9 lakh tonnes in TE2011-12 to 139.8 lakh tonnes in TE2019-20 and the share of crude palm oil declined significantly from 62.6 percent in TE2011-12 to 43.5 percent in TE2019-20 whereas, share of RBD palm oil has increased from 15.2 percent to 17.1 percent and soybean oil from 13.4 percent to 20.9 percent during this period (Chart 4.16). The share of sunflower has increased from 8.2 percent in TE2011-12 to 15.7 percent in TE2019-20. The share of soft oil has increased from 21 percent in early 2010s to above 39 percent in 2019-20 (Chart 4.17). It is evident from the charts that imports of refined palm oil, soybean oil and sunflower oil have increased faster compared with crude palm oil, which has adversely affected domestic refining industry. It is desirable for India to import crude edible oils instead of refined edible oils because crude oil imports can help in generating domestic employment by improving capacity utilization of domestic refinery industry, which currently is under-utilised. The Commission suggests that duty differential between crude and refined oils should be sufficiently large (at least 10-15%) to encourage import of crude oil and discourage refined oil, imports.

Chart 4.16: Share of Major Edible Oils in Total Imports: TE2011-12 and TE 2019-20

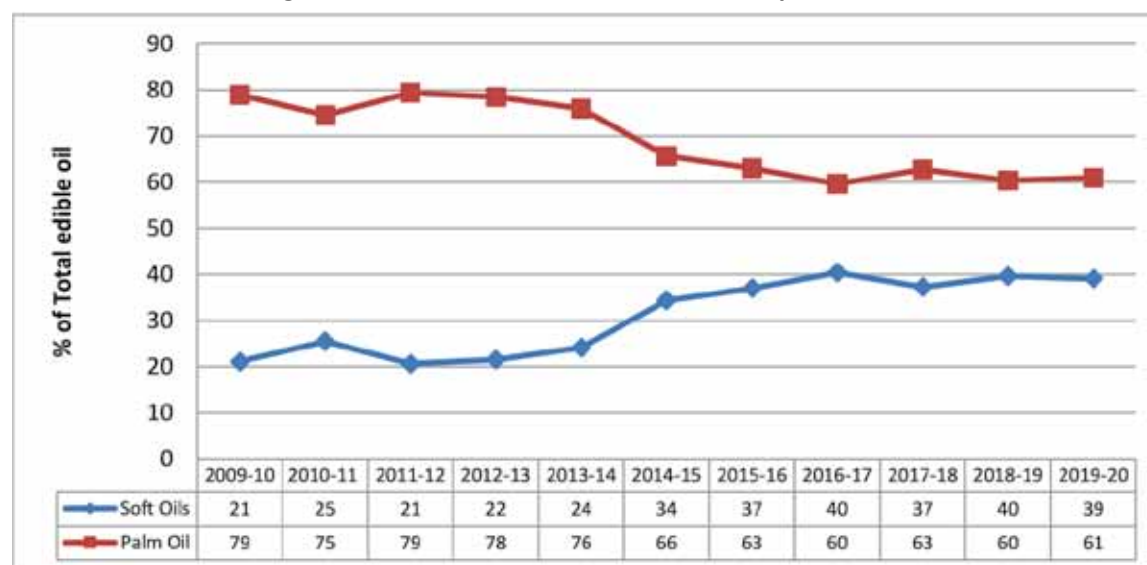


Price Policy for Rabi Crops



Source: Directorate General of Commercial Intelligence and Statistics

Chart 4.17: Rising Shares of Soft Oils in Total Edible Oil Imports: 2009-10 to 2019-20



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

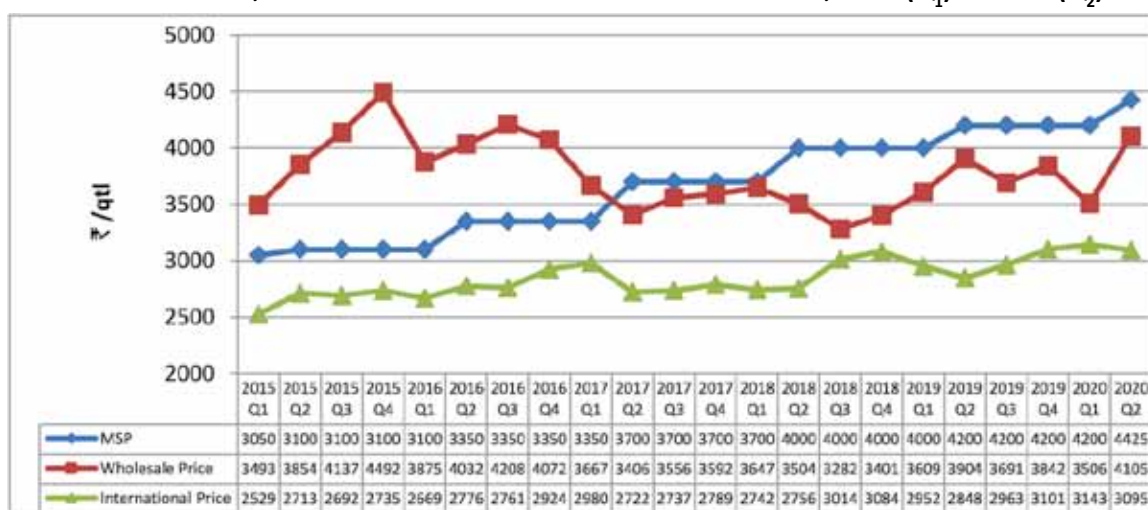
Rapeseed & Mustard (R&M) Seed

4.29 According to USDA 2020 (July), global production of R&M was 71.8 million tonnes in TE2019-20, out of which 21 percent was traded. In 2019-20, Canada was the largest producer with a share of 27.9 percent, followed by EU (24.7%), China (19.2%) and India (11.3%). Canada was also the largest exporter with a share of 62.6 percent, while EU was the largest importer with a share of 39.3 percent, followed by China (18.3%) and Japan (14.9%). In 2020-21 (July), rapeseed production is projected at 69.8 million tonnes, almost nearly same as previous year.

Trade Performance, Competitiveness and Outlook for
Indian Agriculture

- 4.30 During 2015(Q₁) to 2020(Q₂), domestic wholesale prices of R&M seeds have been consistently higher than international prices (Chart 4.18). The wholesale prices were higher than MSP from 2015(Q₁) to 2017(Q₁), but fell below the MSP in 2017(Q₂) and have remained lower than the MSP thereafter. However, domestic prices witnessed an upward trend during 2018(Q₃) to 2019 (Q₂). Wholesale price recorded a significant increase during 2020 (Q₂) but remained below the MSP. The MSP of R&M seed has increased by more than 7 percent per year during the last five years and one of the reasons for higher MSP is to incentivise farmers to shift from wheat cultivation and increase production of R&M to meet domestic edible oils demand.

Chart 4.18: MSP, Domestic and International Prices R&M Seeds, 2015 (Q₁) to 2020 (Q₂)



Note: 1. International prices are R&M Oilseed, Hamburg CIF.

2. Wholesale prices are weighted average wholesale price of Gujarat, Haryana, Rajasthan, UP and West Bengal, which cover 76 percent of production 3. MSPs are inclusive of Bonus.

4. International prices of quarter 2020 (Q₂) are of April-May month only.

Source: 1. Directorate of Economics & Statistics, Ministry of Agriculture & Farmers Welfare for domestic wholesale prices

2. Agriwatch for International prices.

Rapeseed/Mustard Oil

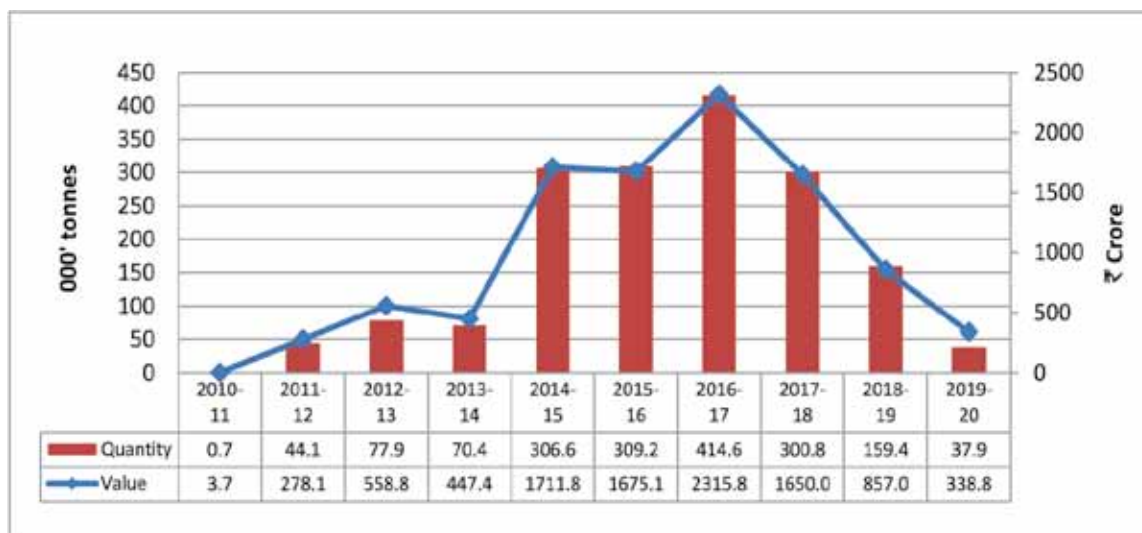
- 4.31 According to USDA 2020(July), global production of rapeseed/mustard oil was 27.8 million tonnes in TE2019-20, out of which about 17.7 percent was traded. In 2019-20 EU was the largest producer of rapeseed/mustard oil producing 9.5 million tonnes with a share of 34.5 percent, followed by China (21.9%), Canada (15.8%) and India (9.7%). Canada was the largest exporter with a share of 63.4 percent, followed by EU (5.0%). China was the largest importer with a share of 32.7 percent, followed by EU (5.1%) and India (0.8%). Global rapeseed oil production has remained stagnant during the last three years and is forecast at about 27.2 million tons in 2020-21.

- 4.32 India's exports of rapeseed/mustard oil are negligible but imports have increased substantially from 70.4 thousand tonnes in 2013-14 to 414.6 thousand tonnes

Price Policy for Rabi Crops

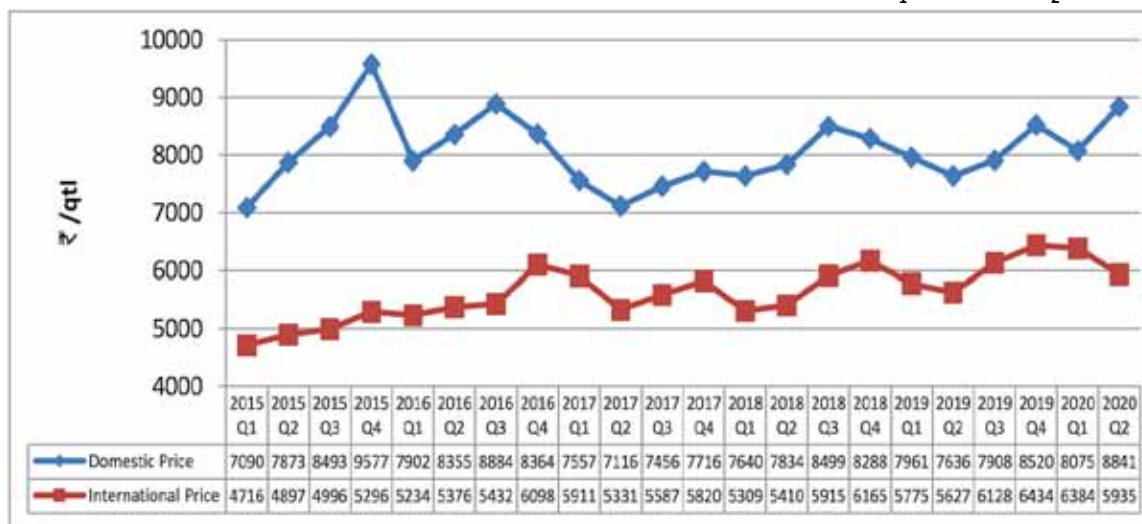
in 2016-17. However, with increase in import duty in November 2017, imports of rapeseed/mustard oil fell to 159.4 thousand tonnes in 2018-19, which further declined to 37.9 thousand tonnes in 2019-20 (Chart 4.19). The domestic prices of rapeseed/mustard oil have continuously been higher than international prices from 2015(Q₁) to 2020(Q₂) (Chart 4.20). Both domestic and international prices showed fluctuating trends during the period and volatility was slightly higher in world prices. In 2020(Q₂), domestic price increased by 9.5 percent while international price declined by 7 percent, resulting in wide gap between two prices.

Chart 4.19: India's Imports of R&M Oil, 2010-11 to 2019-20



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

Chart 4.20: Domestic and International Prices of R&M Oil, 2015 (Q₁) to 2020 (Q₂)



Note: 1. International Prices are Rotterdam, Dutch FOB Ex-Mill; Oil World.

2. International prices of quarter 2020 (Q₂) and wholesale prices are average prices of two months (April & May)

Source: 1. Solvent Extractors Association of India (SEAI) for domestic prices

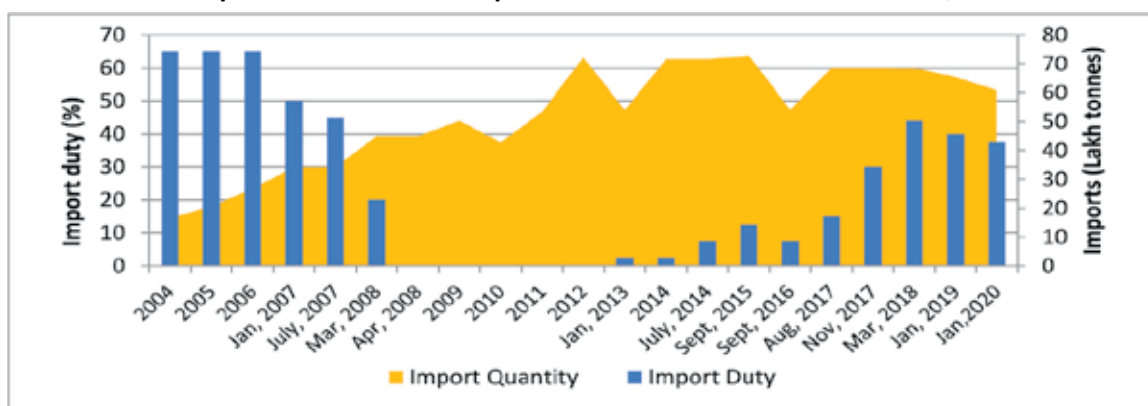
2. World Bank for International prices

Trade Performance, Competitiveness and Outlook for
Indian Agriculture



4.33 As discussed earlier, imports of edible oils have increased manifold over the last two decades, as India has not been able to increase oilseeds production to meet domestic demand. India is likely to remain world's leading importer of edible oils to fill supply-demand gap in the coming years. Under this situation, it is desirable to import crude oils instead of refined edible oils to improve capacity utilization of domestic refineries and generate additional employment in the country. The relationship between import duties and import quantities of edible oils, are depicted in Chart 4.21, Chart 4.22, and Chart 4.23. Quantified degree of association in terms of correlation coefficients between import tariffs and import quantities of three varieties of oils depicted in the three graphs are observed to be (-) 0.5, (-)0.17 and 0.02 respectively displaying either an inverse correlation or no significant correlations between tariff levels and quantities imported.

Chart 4.21: Import Tariffs vis-a-vis Imports of Crude Palm Oil and Fractions, 2004 to 2020



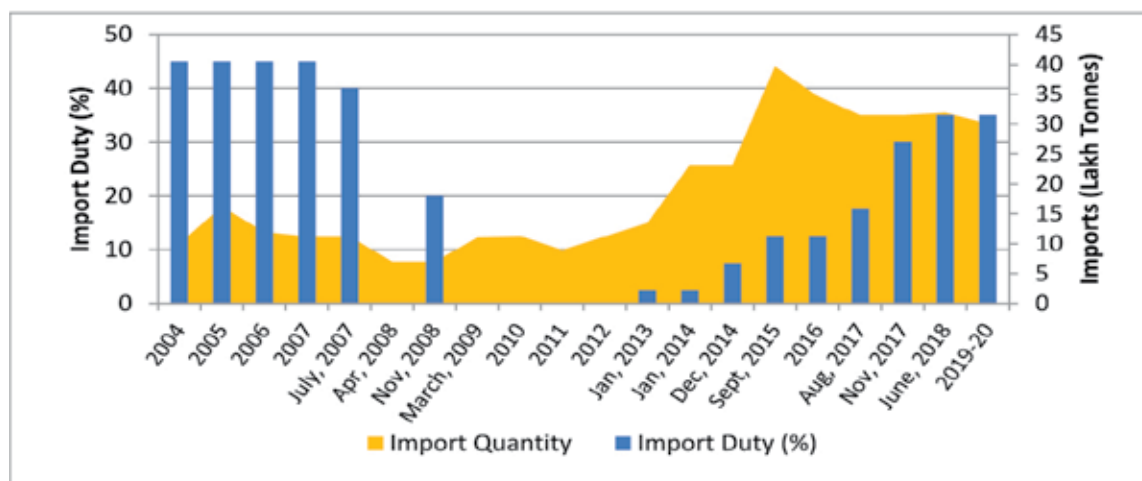
Source: 1. Directorate General of Commercial Intelligence and Statistics, Ministry of Commerce & Industry for import quantity
2. Central Board of Indirect Taxes and Customs, Ministry of Finance for import duty

Chart 4.22: Import Tariffs vis-a-vis Imports of Refined Palm Oils and Fractions, 2004 to 2020



Source: 1. Directorate General of Commercial Intelligence and Statistics, Ministry of Commerce & Industry for import quantity
2. Central Board of Indirect Taxes and Customs, Ministry of Finance for import duty

Chart 4.23: Import Tariffs vis-a-vis Imports of w/n De-Gummed Soy Oil, 2004 to 2020



Source: 1. Directorate General of Commercial Intelligence and Statistics, Ministry of Commerce & Industry for import quantity
2. Central Board of Indirect Taxes and Customs, Ministry of Finance for import duty

Trade Policy

- 4.34 Exports of oilseeds are free, while imports are under OGL with an import duty of 30 percent since January 2003 subject to quarantine conditions. Edible oils were under negative list of imports until April 1994 when imports of palmolein were placed under OGL with 65 percent import duty. Subsequently, import of other edible oils was also placed under OGL. Import duty was as high as 80 percent on crude oil and 90 percent on refined edible oils during early-2000s but was reduced to zero percent on crude and 7.5 percent on refined edible oils in April 2008. Import duty on crude edible oils was increased to 2.5 percent in January 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 also increased to 10 percent in January 2014, 15 percent in December 2014 and to 20 percent in September 2015. However, import duty was reduced on crude palm oil to 7.5 percent and on refined palm oil to 15 percent in September 2016. In order to reduce imports of edible oils and to support domestic oilseeds farmers and oil industry, major changes in the import duty structure of edible oils were introduced in November 2017. The import duty on crude palm oil (CPO) was increased to 30 percent in November 2017, which was further revised to 44 percent in March 2018 but reduced to 40 percent in January 2019. The basic custom duty on CPO was further reduced to 37.5 percent from January 1, 2020.
- 4.35 Import duty on RBD palmolein was raised from 25 percent to 40 percent in November 2017, which was further increased to 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 Free Trade Agreement between the Governments of Member States of the Association of South East Asian Nations (ASEAN FTA) did not attract 5 percent safeguard duty. Government reduced basic custom duty on RBD palmolein from 50 percent to 45 percent under the ASEAN FTA and CECA from January 1, 2020. Import duty on CPO was also reduced from 40 to 37.5 percent w.e.f 1st January 2020, which resulted in reduction in difference between CPO and RBD palmolein from 10 to 7.5 percent. This is likely to have unfavourable impact on domestic refining industry as imports of RBD palmolein would increase and capacity utilisation of industry would be adversely affected. Government amended the import policy of Refined Bleached Deodorised Palm oil (HS Code 1511 90 10) and Refined Bleached Deodorised Palmolein (HS Code 1511 90 20) and HS Code 1511 90 90 (others) and placed these oils under “Restricted” category from 8th January 2020. However, in order to improve self-sufficiency in edible oils, import duty needs to be linked to domestic demand-supply situation, domestic prices linked to MSP of edible oils and international prices. Duty differential between crude and refined oil should be at least 10-15 percent to discourage import of refined oil and encourage domestic refinery industry through import of crude oil.

- 4.36 Export of edible oils was initially prohibited for a period of one year in March 2008, which was extended from time to time and is still prohibited. However, there are certain exemptions, namely (a) castor oil (b) coconut oil from all EDI Ports and through all Land Custom Stations (LCS) (c) Deemed export of edible oils (as input raw material) from Domestic Tariff Area (DTA) to 100 percent Export Oriented Units (EOUs) for production of non-edible goods to be exported (d) Edible oils from DTA to Special Economic Zones (SEZs) to be consumed by SEZ Units for manufacture of processed food products, subject to applicable value addition norms (e) edible oils produced out of minor forest produce (f) organic edible oils subject to export contracts being registered and certified as ‘Organic’ by APEDA (g) rice bran oil in bulk and (h) groundnut oil, sesame oil, soybean oil and maize (corn) oil in bulk. At present exports of all agricultural commodities are free without any quantitative restriction (except mustard oil of packaging restriction of up to 5 kg with Minimum Export Price (MEP) of US \$900 per tonne. India’s Trade policy for major Rabi Crops is summarized in Table 4.2. Annexure Table 4.2 (b) presents key changes in trade policy for oilseeds/oils since April 2019.

Price Policy for Rabi Crops

Table 4.2: India's Trade Policy - Rabi Crops

Crop/ Commodity	Trade Policy				
	Import Policy			Export Policy	
	OGL/Restricted/ Prohibited	Import duty (%)	Bound duty (%)	OGL/Restricted/ Prohibited	Export duty (%)
Cereals					
Wheat	OGL	40	100	OGL	Zero
Barley	OGL	Zero	100	OGL	Zero
Pulses					
Gram (Chickpea)	OGL	60	100	OGL	Zero
Masur (Lentil)	OGL	30*& 10**	100	OGL	Zero
Oilseeds & Oils					
R&M Seed	OGL	30	100	OGL	Zero
R&M Oil (Crude)	OGL	35	75	Export ban#	
R&M Oil (Refined)	OGL	45	75	Export ban#	
Palm Oil (Crude)	OGL (Tariff value -US \$628 per metric tonne) ##	37.5	300	Export ban#	
RBD Palmolein	Restricted [§] (Tariff value -US \$656 per metric tonne) ##	45	300	Export ban#	
RBD Palm Oil	Restricted [§] (Tariff value -US \$648 per metric tonne) ##	54			

Note: 1. # Export of edible oils in branded, consumer packs up to 5 kg is permitted with a MEP of US \$ 900 per tonne.

2. ##Price on 30th June, 2020.

3. *Duty of 30 percent on lentils originating in or exported from USA and ** duty of 10 percent on lentils imported from any country other than USA.

4. [§]RBD Palmolein and RBD Palm Oil placed under "Restricted" list w.e.f. 8th January 2020

Source: Central Board of Indirect Taxes & Customs, Ministry of Finance

India's Trade Outlook

Wheat

4.37 FAO's first forecasts for the 2020/21 season point to a comfortable global cereal supply and demand situation and early prospects suggest cereal production in 2020 to be 2.6 percent higher than the previous year. World cereal utilization in 2020/21

Trade Performance, Competitiveness and Outlook for
Indian Agriculture



is forecast to expand by 1.6 percent while ending stocks are forecast to reach a new record leading to rise in the global cereal stock-to-use ratio pointing towards a generally comfortable supply situation of cereals. The FAO Cereal Price Index (2014-16=100) averaged 96.9 points in June, down 0.6 points from May and 1.9 points below the corresponding month last year.

- 4.38 According to the U.S. Department of Agriculture (USDA) and International Grain Council, world production of wheat is forecast to be slightly higher in 2020-21 while, FAO forecasts for global wheat production is pegged at par with last year's production. Although wheat consumption is set to increase, the stocks-to-use ratio remains high. Modest increase in world wheat trade in 2020-21 is expected to improve international wheat prices as per World Bank Commodity Markets Outlook (April 2020), wheat prices increased nearly 6 percent in 2020(Q₁) due to some weather concerns earlier in the quarter but growing conditions have turned favourable in major producing countries. India is set to harvest a record wheat production of above 107 million tonnes in 2019-20 and has record wheat stocks. As per FAO's June 2020 Food Price Index, downward pressure on wheat prices intensified in June due to new harvests in the northern hemisphere and improved production prospects in a number of major exporting countries. Wheat price in India is significantly higher than international price (<US\$200/MT in June 2020) and market trends indicate that this position is unlikely to change in 2020-21. Therefore, Indian wheat will remain uncompetitive in the global market, limiting prospects for Indian wheat exports in 2020-21.
- 4.39 According to FAO's Food Outlook Report (June 2020), after a significant slowdown in demand in 2020, use of coarse grains is forecast to pick up in 2020/21 but remain below total production, leading to higher stocks and putting downward pressure on world prices under. World barley production in 2020 is forecast to decline by about 2.4 percent compared to 2019 while global barley trade in 2020-21 is expected to be 3.9 percent higher than in 2019-20. International prices of barley in 2020 were generally below last year and as global stocks are forecast to rise by about 6.6 percent in 2020-21, global prices are expected to be under downward pressure.

Pulses

- 4.40 According to the U.S. Department of Agriculture (USDA), Myanmar's bean and pulse production (2nd largest exporter of pulses to India) is forecast to increase by 3 percent in 2020-21 due to higher acreage under black matpe (urad) and tur (arhar) and exports are estimated to be 1.5 million metric tons with anticipated higher demand from India. Production of peas in Canada, which is the largest exporter of pulses to India, increased significantly in 2019 compared with the five-year average. Canada's lentil exports to India increased significantly as production of gram/pigeon peas in India and other producing countries declined.
- 4.41 As per Australian Crop Report (June 2020), area under cultivation of pulses as well

as production, which declined in 2018-19 and 2019-20, are expected to increase by about 22.7 percent and 43.8 percent, respectively, in 2019-20. The area under chickpeas is forecast to more than double while production is forecast to increase by 2.3 times. Similarly, production of other pulses like lentils, faba beans and lupins is also projected to increase in 2020-21, in anticipation of rising demand from importing countries.

- 4.42 After sharp increase in market prices of pulses in 2015-16, Indian farmers increased acreage under pulses and improved productivity resulting in record production of pulses in 2017-18. Imports of pulses declined from 6.6 million tonnes in 2016-17 to 2.6 million tonnes in 2018-19. Increased production and larger imports led to supply glut leading to significant fall in prices in the domestic market and hurting the farmers' interests. Decline in production in 2018-19 and level of production in 2019-20 below the target has resulted in increased imports of pulses in 2019-20. Prospects for larger exports of pulses is a remote possibility, as current production is lower than domestic consumption. Imports of pulses are expected to increase in the coming year due to demand-supply imbalance. Therefore, untapped potential for higher productivity of pulses should be exploited to reduce imports and ensure remunerative prices to farmers. Regulation of imports is also important to avoid to farmers' distress.

Edible Oils and Oil Seeds Complex

- 4.43 Despite subdued global demand conditions, FAO's latest forecast for oilseeds and products point towards a tightening supply-demand situation in 2019-20, driven primarily by lower production. Preliminary forecasts for 2020-21 suggest relatively tight supplies compared to demand. Based on anticipated modest fall in production compared to global utilization, world ending stocks of oil/fats in 2019/20 are forecast to be at a 7-year low of 34 million tonnes. International prices of oilseeds and derived products, which improved in the first half of 2019-20, recorded a declining trend since February 2020 due to market uncertainties created by coronavirus (COVID-19) outbreaks. For example, price of soybean oil (Dutch - fob ex-mill) declined from US\$ 820 per tonne in January 2020 to US\$ 663 per tonne in May 2020. International trade in oils/fats is forecast to be slightly lower in 2019/20 and share of oil palm is likely to decline due to reduced demand from major importing countries driven by narrow price spread between palm oil and competing soft oils. Soybean and sunflower oil trade is expected to rise significantly, while rapeseed oil trade will remain at last season's level, due to the anticipated weakening of global demand from biodiesel producers. The market share of palm oil is expected to decline but would maintain its leading position in trade.
- 4.44 Edible oils is the largest item in India's agri-imports basket, with a volume of 14.8 million tonnes worth ₹77.7 crore in TE2019-20. Government has substantially increased MSP of oilseeds as well as import duty on edible oils during the last few years to protect domestic growers. However, long-term solution lies in improving productivity and efficiency of the sector to make it globally competitive. There



is significant scope to improve productivity of R&M, soybean, sunflower and groundnut. In addition, the potential of secondary sources like cottonseed oil, rice bran oil, palm oil, etc. also needs to be fully exploited. Oil palm has great potential as it can give 3-8 times more oil than any other oil crop. Therefore, efforts are needed to address technological and institutional constraints and pricing of fresh fruit bunches to promote oil palm cultivation in order to reduce import dependency and achieve self-sufficiency in edible oils.

Costs, Returns and Inter-Crop Parity

- 5.1 While recommending the MSPs of mandated crops, the Commission considers the cost of production and various other factors such as demand and supply conditions in domestic and global market, domestic and international prices, inter-crop price parity, terms of trade between agriculture and non-agriculture sectors, the likely effect of the price policy on rest of the economy, ensure rational utilization of land, water and other production resources, and a minimum of 50 percent as the margin over cost of production.
- 5.2 The Commission uses crop-wise, State-wise cost estimates provided by the Directorate of Economics & 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 year 2018-19, it needs to be projected for crop season 2020-21. Based on CS data, crop-wise and State-wise projections of cost of cultivation (CoC) are made for the ensuing season.
- 5.3 For Rabi Marketing Season (RMS) 2021-22, projected CoC estimates for wheat, barley, gram, lentil and rapeseed & mustard are based on actual estimates available for the latest three years viz. 2016-17, 2017-18 and 2018-19, for each State, whereas, for safflower, CoC projections are based on actual estimates available for 2017-18 and 2018-19, for each State as data for 2016-17 were not available. However, CoC estimates are not projected for the State/crop, where share of the State in all-India production and share of a particular crop in the State total production of the crop group is negligible or number of sample holdings under CS for the crop is inadequate. The estimates of CoC projections capture movement in overall input cost separately over each of the past three years (2016-17, 2017-18 and 2018-19) for wheat, barley, gram, lentil and rapeseed & mustard; and two years (2017-18 and 2018-19) for safflower, for the crop season 2020-21.

- 5.4 An assessment of likely changes in input costs for the crop year 2020-21 with reference to each of the above mentioned three consecutive years ending with 2018-19 in respect of wheat, barley, gram, lentil and rapeseed & mustard, and two consecutive years ending with 2018-19 in respect of safflower, is made by constructing the Composite Input Price Indices (CIPIs) (base 2011-12=100). The CIPIs are based on latest prices of major inputs like human labour, bullock labour, machine labour, fertilisers, manures, seeds, pesticides and irrigation as per data available from Labour Bureau, Ministry of Labour and Employment, State Governments and Office of the Economic Adviser, Ministry of Commerce & Industry. Based on CIPIs thus constructed, the Commission projects crop-wise, State-wise CoC A_2 , A_2+FL and C_2 .
- 5.5 The State-wise cost of production (CoP) A_2 , A_2+FL and C_2 estimates for the mandated crops are then derived from the projected CoCs using projected crop yields. Subsequently, all-India estimates of CoP A_2 , A_2+FL and C_2 are derived based on State-wise CoPs of the crops and their production shares in total production. These projected all-India estimates of CoP are considered by the Commission while formulating price policy recommendations.
- 5.6 The Commission has undertaken cost projection exercise based on the latest three year actual cost estimates for wheat, barley, gram, lentil and rapeseed & mustard, and two year actual cost estimates for safflower, for each State under certain implicit assumptions. One, since projections for each crop in a State are made two years ahead, 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 costs are available and the crop year 2020-21 for which cost projections are made. Two, since yield varies from year to year due to multiplicity of factors, three-year average in case of wheat, barley, gram, lentil and rapeseed & mustard and two-year average in case of safflower, has been taken to smoothen out fluctuations in yield and hence in CoP. However, in cases where there are wide fluctuations in yield, Olympic average yield (Olympic average 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 barley in Himachal Pradesh and gram in Andhra Pradesh have been projected based on yield data published in 'Agricultural Statistics at a Glance 2019' by Directorate of Economics & Statistics, Ministry of Agriculture and Farmers Welfare, Government of India.

Costs and Returns of Rabi Crops during TE2018-19

- 5.7 The all-India average costs and gross returns during 2016-17 to 2018-19, the latest years for which cost data is available, in case of wheat, barley, gram, lentil and rapeseed & mustard, and 2017-18 and 2018-19 in respect of safflower have been analysed and are given in Table 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 the village/cluster of villages where the crops are grown and harvested.

- 5.8 It is evident from Table 5.1 that per hectare gross returns over A_2 +FL are the highest for wheat at ₹40,749 per ha, followed by rapeseed & mustard at ₹30,834 per ha, barley at ₹27,280 per ha and lowest for safflower at ₹3406 per ha during TE2018-19. While, per hectare gross returns over CoC A_2 are the maximum for wheat (₹48,663), followed by barley (₹41,751), rapeseed & mustard (₹41,220) and minimum for safflower (₹8,702).
- 5.9 It can also be seen that all-India average gross returns as percentage of CoC A_2 +FL are highest at 110.4 percent for wheat, followed by lentil (107%), rapeseed & mustard (101.7%), gram (88.2%), barley (69.2%) and the lowest at 11.9 percent in safflower. The all-India average gross returns as percentage of CoC A_2 are highest at 203.7 percent in rapeseed & mustard, followed by lentil (171.2%), wheat (167.7%), barley (167.4%), gram (131.9%) and the lowest at 37.3 percent in safflower. Chart 5.1 represents the gross returns on A_2 and A_2 +FL cost for six rabi crops. The analysis of per hectare gross returns indicates the need for enhancing productivity of safflower and lentil relative to that for wheat and rapeseed-mustard for improving profitability. The details of State-wise average gross returns over actual CoC A_2 and A_2 +FL of mandated rabi crops during TE2018-19 are given in Annex Table 5.1.
- 5.10 Among cereals, per hectare all-India average gross returns over CoC A_2 +FL for barley at ₹27,280 are substantially lower than returns for wheat, mainly due to lower yield and price of barley than wheat. Among pulses, all-India average gross returns per hectare over both CoC A_2 and CoC A_2 +FL are higher for gram at ₹31,446 and ₹25,920, respectively than lentil at ₹28,808 and ₹23,588, respectively due to low price and yield. All pulses and oilseeds have lower CoC A_2 +FL and higher prices than that of cereals, but have lower average gross returns mainly due to lower productivity. Among oilseeds, per hectare average gross returns over CoC A_2 and CoC A_2 +FL are significantly higher for rapeseed and mustard at ₹41,220 and ₹30,834, respectively than safflower mainly due to very low productivity and high paid-out costs. Due to reasonably high productivity, rapeseed & mustard gives higher average gross returns than pulses. Due to assured MSP and high profitability, production of wheat has increased significantly in the country, while production of oilseeds has remained stagnant due to lower yields and market prices. In order to enhance farmers' income, efforts are needed to reduce cost of cultivation, improve yield and ensure remunerative prices to farmers, particularly in barley, gram and safflower.

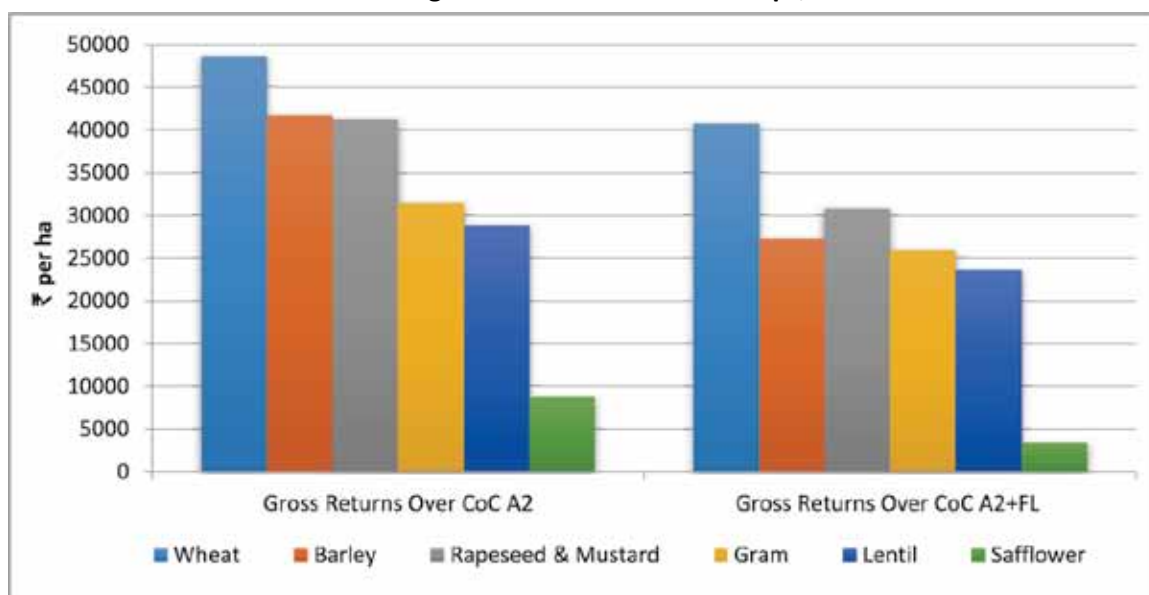
Table 5.1: Average Gross Returns of Rabi Crops, TE2018-19

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							
Wheat	29010	36924	77673	48663	167.7	40749	110.4
Barley	24936	39406	66687	41751	167.4	27280	69.2
B. Pulses							
Gram	23848	29375	55295	31446	131.9	25920	88.2
Lentil	16831	22051	45639	28808	171.2	23588	107.0
C. Oilseeds							
Rapeseed & Mustard	20236	30622	61456	41220	203.7	30834	100.7
Safflower	23317	28613	32019	8702	37.3	3406	11.9

Note: Average gross returns of safflower are for 2017-18 and 2018-19 for Karnataka, and for 2017-18 for Maharashtra, due to unavailability of data

Source: CACP using CS data

Chart 5.1: Average Gross Returns of Rabi Crops, TE2018-19



Note: Average gross returns of safflower are for 2017-18 and 2018-19 for Karnataka, and for 2017-18 for Maharashtra, due to unavailability of data

Source: CACP using CS data

Movement in Agricultural Wages and Farm Inputs Prices

5.11 Average annual growth in daily wage rates of agricultural labour during rabi season in major States and at all-India level at current prices and constant prices (2019-20=100) during 2017-18 to 2019-20 are given in Table 5.2. At all-India level, at current prices, agricultural wage rate has increased by 4.6 percent in 2017-18, 5.6 percent in 2018-19 and 6 percent in 2019-20; while at constant prices, it has increased by 2.9 percent in 2017-18, 2.6 percent in 2018-19 and declined by 3.3 percent in 2019-20. Chart 5.2 reflects State-wise average daily wages of agricultural labour during rabi season in 2019-20 and growth in wages in rabi season during 2019-20 over corresponding period in 2018-19. At all-India level, average daily wage rate was ₹318, while, it was maximum (₹741) in Kerala and the minimum in Madhya Pradesh (₹221) in 2019-20. The highest growth in average daily wage rate in 2019-20 over 2018-19 was recorded in Assam at 14.9 percent, while it was lowest in Kerala (0.7%). Andhra Pradesh, Assam, Bihar, Himachal Pradesh, Maharashtra and Tamil Nadu recorded higher growth in average daily wage rate than all-India average, while Gujarat, Haryana, Karnataka, Madhya Pradesh, Kerala, Odisha, Punjab, Rajasthan, Uttar Pradesh and West Bengal recorded lower growth than all-India level during 2019-20 over 2018-19. The State-wise and all-India details of 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 by Major States and at All-India Level during Rabi Season

State	Change (%) at Current Prices			Change (%) at Constant Prices (2019-20=100)		
	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20
Andhra Pradesh	7.1	9.0	11.7	3.5	4.8	0.6
Assam	8.4	-0.5	14.9	3.8	-2.8	5.4
Bihar	6.7	5.4	9.7	6.9	2.3	-2.0
Gujarat	5.4	3.2	2.5	4.7	-0.3	-7.4
Haryana	0.6	3.6	1.8	-1.0	1.0	-5.6
Himachal Pradesh	7.8	-0.8	7.6	6.1	-2.9	1.7
Karnataka	6.1	7.8	3.7	2.1	10.6	-4.3
Kerala	2.9	6.4	0.7	-1.9	5.0	-4.6
Madhya Pradesh	4.2	1.4	2.6	3.4	-0.6	-3.2
Maharashtra	4.3	4.7	9.0	3.6	1.5	-4.7
Odisha	3.3	2.8	4.5	-0.9	-1.5	-3.5
Punjab	9.1	2.7	1.7	6.7	0.5	-5.6
Rajasthan	0.4	7.9	5.7	1.9	2.2	-3.0
Tamil Nadu	4.7	9.4	6.4	-2.2	6.0	-4.2

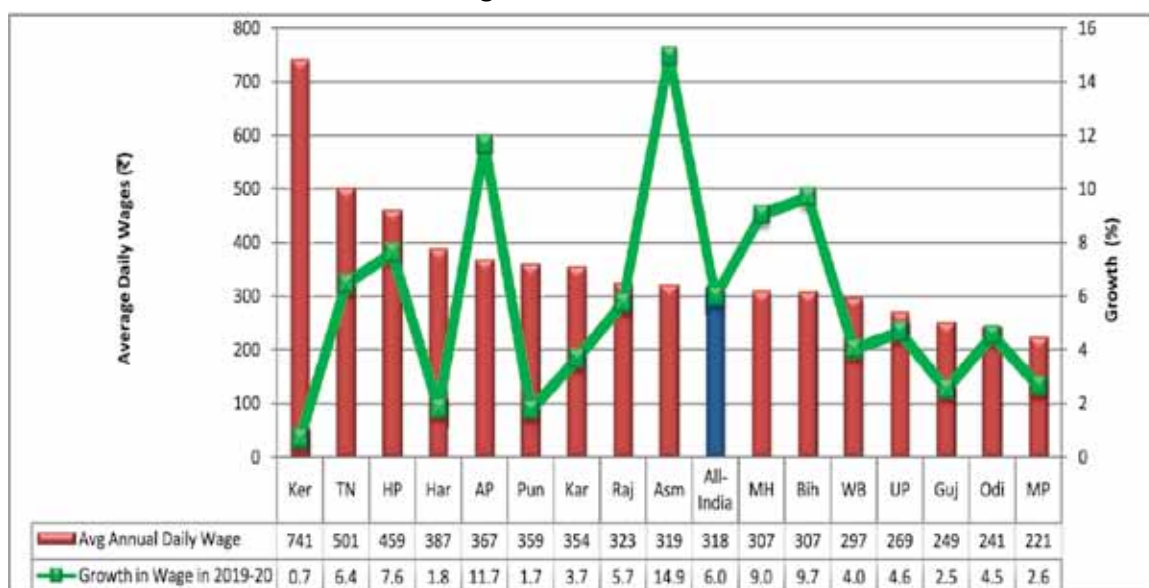
State	Change (%) at Current Prices			Change (%) at Constant Prices (2019-20=100)		
	2017-18	2018-19	2019-20	2017-18	2018-19	2019-20
Uttar Pradesh	4.2	6.1	4.6	5.5	0.8	-4.0
West Bengal	7.3	3.0	4.0	0.9	3.3	-1.8
All-India	4.6	5.6	6.0	2.9	2.6	-3.3

Note: 1. Averages for 2017-18 and 2018-19 are from October to April

2. Average for 2019-20 is from October, 2019 to March, 2020

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

Chart 5.2: Average Daily Wage Rates and Growth in Wages in Selected States during Rabi Season 2019-20



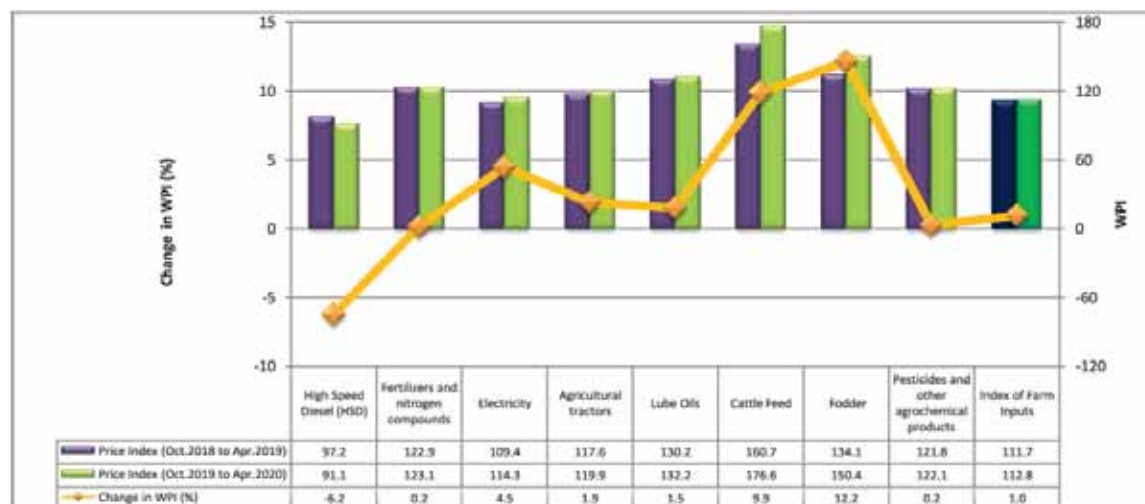
Note: Average from October to March

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

5.12 The changes in Wholesale Price Index (WPI) with base 2011-12 of major farm inputs during rabi season 2019-20 over 2018-19 are given in Chart 5.3. The price index for HSD declined from 97.2 in 2018-19 to 91.1 in 2019-20, registering a negative growth of 6.2 percent in 2019-20. The WPI of other major farm inputs increased in 2019-20 and ranged from 0.2 percent in 'fertiliser and nitrogen compounds' and 'pesticides and other agrochemical products' to 12.2 percent in fodder. The indices for electricity, agricultural tractor, lube oils and cattle feed moved up to 4.5 percent, 1.9 percent, 1.5 percent, and 9.9 percent, respectively in 2019-20 over 2018-19. The weighted index of above mentioned selected farm input prices in 2019-20 registered an increase of 1 percent. The monthly wholesale price indices of various farm inputs from 2012 to 2020 are given in Annex Table 5.3.

Price Policy for Rabi Crops

Chart 5.3: Movement in Prices of Farm Inputs during Rabi Season in 2019-20 over 2018-19



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

Cost Projections for Rabi Marketing Season, 2021-22

5.13 The Commission has computed farm input-wise all-India weighted 'input weights' for crop season 2018-19 and composite input price Indices (CIPIs) for crop season 2019-20 and 2020-21 (RMS 2021-22) for mandated rabi crops with base 2011-12=100, and are given in Table 5.3. For this, based on actual 'weights' and 'input price indices' for crop season 2018-19, and using latest input prices; 'input price indices' and 'CIPIs' for crop season 2019-20 and 2020-21 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', respectively, 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 rabi crops, with weights being relative shares of crops in total production of mandated rabi 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 rabi crops. It may be observed from the Table that all-India CIPi for rabi crops showed an increase of 7.7 percent in crop 2018-19, 6.1 percent in 2019-20 and 6.6 percent in 2020-21, while CIPi for rabi crops for crop season 2020-21 registered the lowest increase (4.3%) in insecticides and highest increase (8.0%) in seed over 2019-20. As human labour accounted for more than one-third of total cost of production of mandated rabi crops during 2018-19, it is imperative to encourage farmers to adopt farm mechanization to improve their profitability.

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

Inputs	Weights (2018-19)	Crop Input Price Index (CIPi)				Percentage Change in Input Price Index 2020- 21 over 2019-20
		2017- 18	2018- 19	2019- 20	2020- 21	
Human Labour (HL)	0.35	176.6	187.7	199.6	213.3	6.9
Bullock Labour (BL)	0.02	237.3	289.7	311.3	336.1	7.9
Machine Labour (ML)	0.25	119.6	127.5	136.2	146.0	7.2
Seeds	0.09	155.0	165.8	177.5	191.8	8.0
Fertilizers	0.12	115.5	133.5	139.0	145.5	4.7
Manures	0.00	144.7	171.4	178.0	186.6	4.8
Insecticides	0.02	129.0	134.3	139.8	145.7	4.3
Irrigation Charges	0.14	131.0	137.1	143.8	151.4	5.2
Composite Input Price Index (CIPi)		146.8	158.1	167.8	178.9	6.6
Percentage Change (year-on-year)		-	7.7	6.1	6.6	-

Source: CACP Calculations

- 5.14 Based on State-wise actual cost estimates and projected CIPIs, State-wise estimates of CoC A_2 , A_2 +FL and C_2 for each of mandated crop are projected. Using these estimates of CoC and projected yields, State-wise CoP A_2 , A_2 +FL and C_2 for each crop are projected. Subsequently, crop-wise all-India weighted average projected CoP A_2 , A_2 +FL and C_2 , with weights being the respective share of the State in all-India production during TE2019-20, have been worked out for rabi crops for marketing season 2021-22, and are given in Table 5.4.
- 5.15 As shown in Table, A_2 +FL CoP varied from ₹960 per quintal in case of wheat to ₹3,551 per quintal in safflower, while A_2 ranged from ₹629 per quintal in barley to ₹2,939 per quintal in safflower. Cost C_2 was the lowest in barley (₹1,404/ql) and the highest for safflower (₹4,908/ql). Among all rabi crops, projected A_2 , A_2 +FL and C_2 CoP per quintal were highest for safflower due to low yield and prices.
- 5.16 In cereals, A_2 and C_2 CoP per quintal were higher in wheat while A_2 +FL cost was more in case of barley. In case of pulses, A_2 and A_2 +FL cost of production for gram at ₹2,296 per quintal and ₹2,866 per quintal were higher than respective CoP at ₹2,169 per quintal and ₹2,864 per quintal for lentil. While, C_2 CoP for lentil (₹4,204/ql) was lower than for gram at ₹4,012 per quintal. The cost of production of rapeseed-mustard was substantially lower than safflower.
- 5.17 State-wise and all-India projected costs of mandated rabi crops for RMS 2021-22 and production shares during TE2019-20 are given in Annex Table 5.4. State-wise break-up of actual CoC estimates for 2016-17, 2017-18 and 2018-19 in respect of wheat, barley, gram, lentil and rapeseed & mustard, and 2017-18 and 2018-19 for

safflower, are given in Annex Tables 5.5a to 5.5f, respectively. The all-India projected costs of production for crop season 2020-21 and 2019-20 are given in Annex Table 5.6.

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

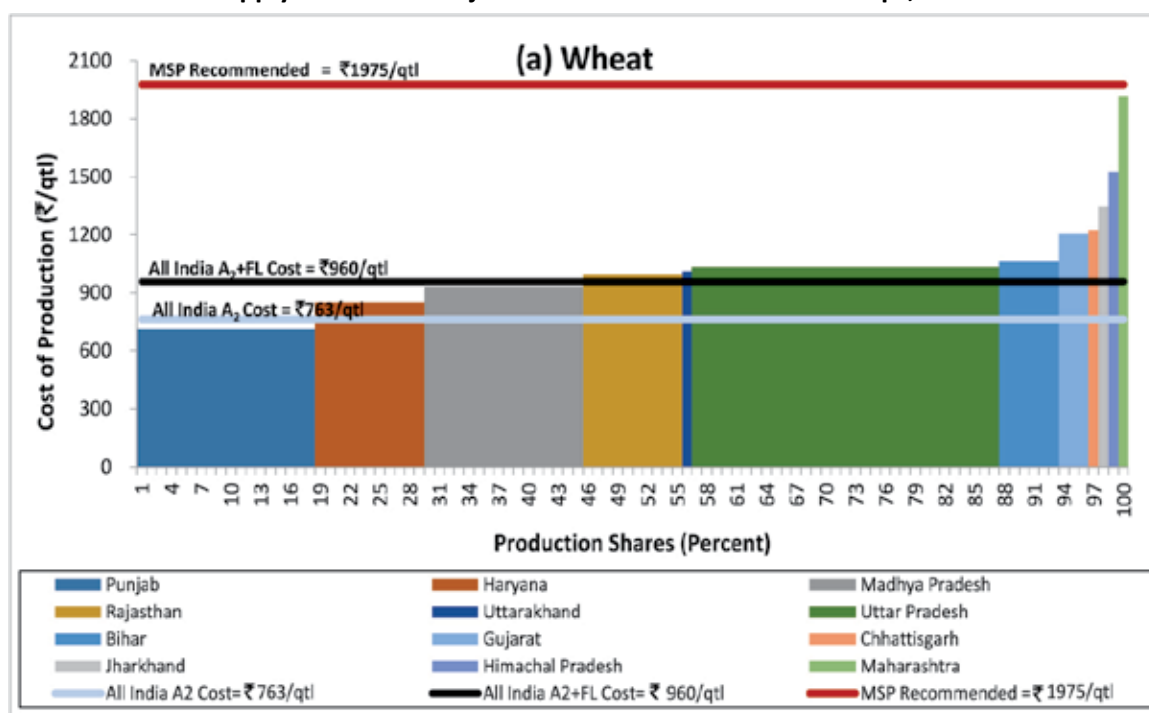
Crops	Cost of Production (₹/qtl)		
	A ₂	A ₂ +FL	C ₂
Wheat	763	960	1467
Barley	629	971	1404
Gram	2296	2866	4012
Lentil	2169	2864	4204
Rapeseed & Mustard	1603	2415	3470
Safflower	2939	3551	4908

Source: CACP Calculation

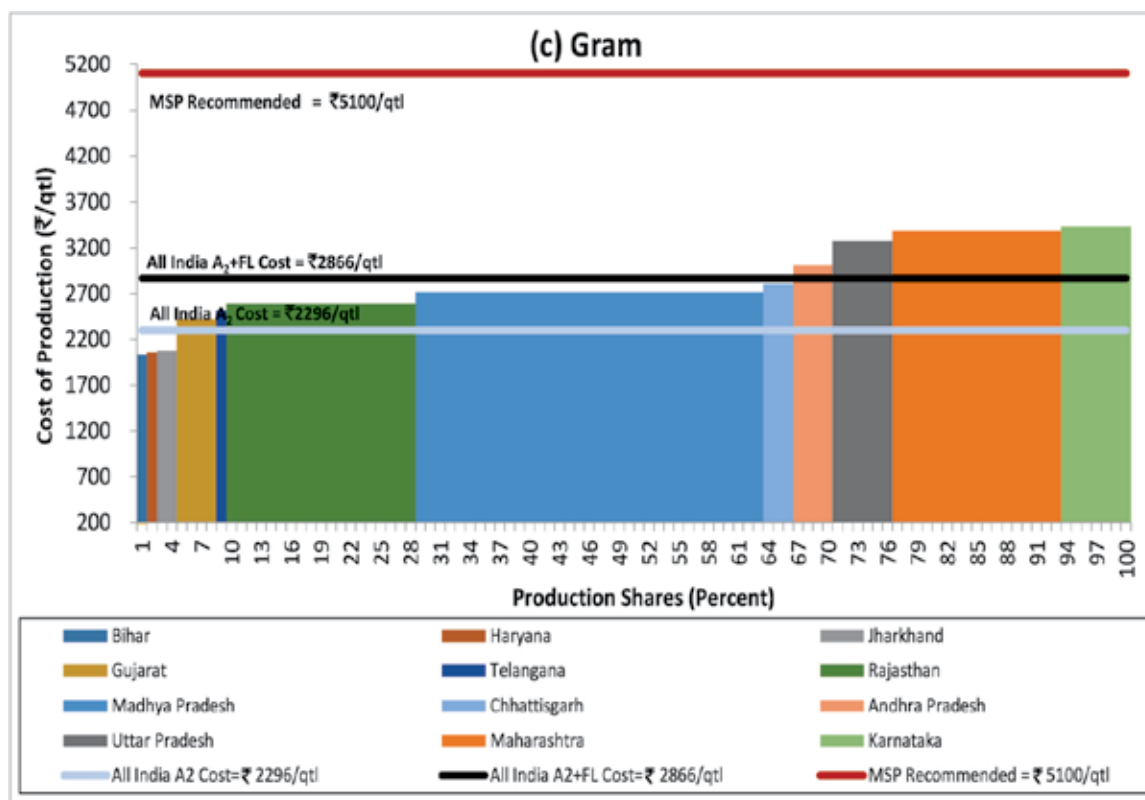
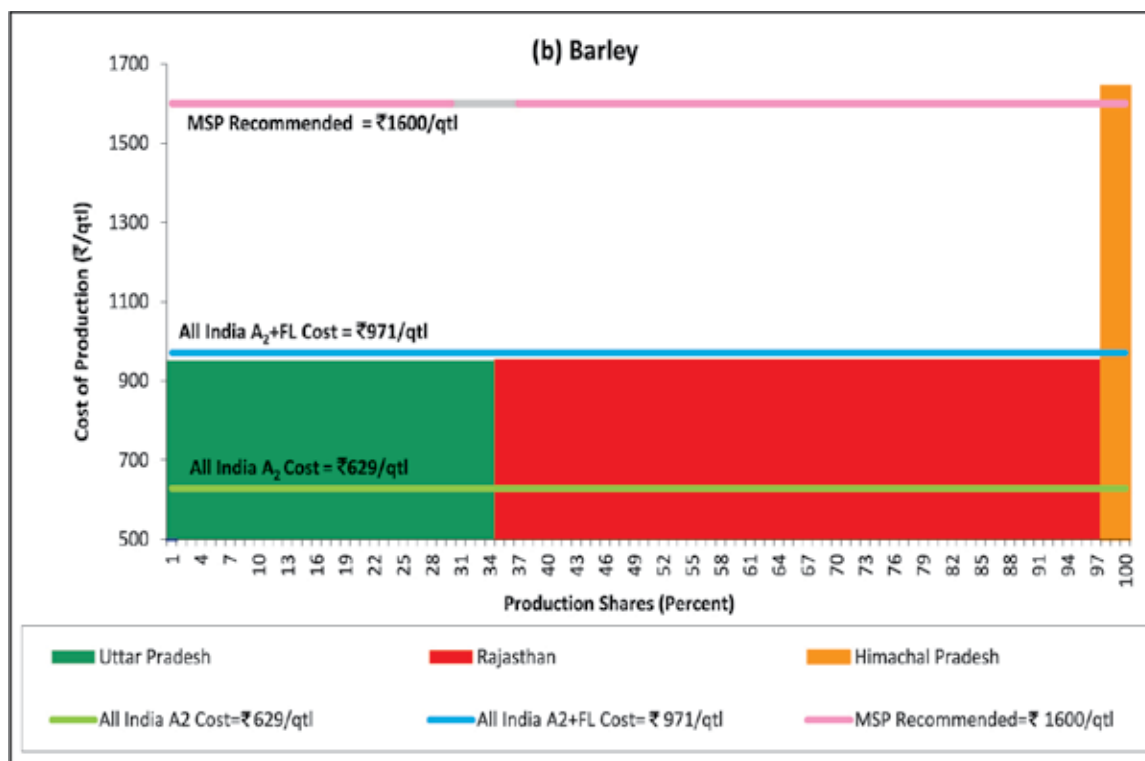
- 5.18 Charts 5.4 (a) to (f) show crop-wise supply curves for A₂+FL CoP by States in ascending order with their corresponding relative shares in all-India production. Production shares to derive all-India CoP of a crop are related to projected States. Supply curves for different crops are graphical representation of CoP, which represent the quantum of production of crop produced at different levels of CoP in various States. The supply curve presented in Chart 5.4 (a) shows that A₂+FL for wheat is the lowest at ₹714 per quintal in Punjab, followed by Haryana (₹850/qtl), Madhya Pradesh (₹928/qtl), Rajasthan (₹997/qtl), and the highest (₹1,916/qtl) in Maharashtra. Among top-five producers of wheat in the country, which account for over 87 percent production of projected States, Punjab has the lowest cost of production while Uttar Pradesh has the highest CoP (₹1033/qtl). In the case of barley, A₂+FL at ₹951 per quintal is the lowest in Uttar Pradesh, followed by Rajasthan (₹954/qtl), the largest producer, and the highest (₹1,645/qtl) in Himachal Pradesh (Chart 5.4 (b)).
- 5.19 In case of gram as presented in Chart 5.4 (c), Bihar has the lowest A₂+FL CoP at ₹2034 per quintal, followed by Haryana (₹2,059/qtl), Jharkhand (₹2,077/qtl), Gujarat (₹2,416/qtl), and the highest (₹3,428/qtl) in Karnataka. Among top-three producers of gram in the country, which account for about 71 percent of production of projected States, Rajasthan has the lowest CoP (₹2590/qtl) and Maharashtra has the highest CoP (₹3,379/qtl). Supply curve for lentil presented in Chart 5.4 (d) shows that A₂+FL CoP is lowest (₹2,149/qtl) in Bihar and the highest (₹3,489/qtl) in Uttar Pradesh. Among top-two producers of lentil in the country, which account for nearly 77 percent of production of projected States, Madhya Pradesh has lower CoP (₹2,490/qtl) than Uttar Pradesh.

- 5.20 In the case of rapeseed & mustard as shown in Char 5.4 (e), Madhya Pradesh has the lowest CoP at ₹1,640 per quintal, followed by Haryana (₹1,913/qtl), Punjab (₹2,003/qtl), Bihar (₹2,097/qtl) and the highest (₹4,586/qtl) in Assam. Among top-five producers of rapeseed & mustard in the country, which account for nearly 92 percent of production of projected States, Madhya Pradesh has the lowest CoP and West Bengal has the highest CoP (₹3,257/qtl). For safflower, CoP (₹2,767/qtl) in Karnataka is lower than in Maharashtra (₹4,544/qtl) (Chart 5.4 (f)). Higher cost of production is mainly due to very low yields, therefore, efforts are needed to improve productivity to reduce cost of production and improve profitability, especially for pulses and oilseeds of rabi season.
- 5.21 The projected A_2 +FL cost of production is lower than all-India weighted CoP A_2 +FL in 3 out of 12 States for wheat, 2 out of 3 States for barley, 8 out of 12 States for gram, 2 out of 4 States for lentil, 5 out of 9 States for rapeseed & mustard, and 1 out of 2 States for safflower. Therefore, holistic and coordinated efforts are needed to reduce costs and improve productivity in high-cost States to remain competitive and profitable.
- 5.22 The share of production covered at the recommended MSP is 100 percent for all rabi crops except barley. The MSP margins over all-India projected A_2 +FL cost of production is highest for wheat at 106 percent, followed by rapeseed & mustard (93%), lentil (78%), gram (78%), barley (65%) and 50 percent for safflower. The highest MSP margin over projected CoP A_2 +FL for wheat was in Punjab (177%), barley in Uttar Pradesh (68%), gram (151%) and lentil (137%) in Bihar, rapeseed & mustard in Madhya Pradesh (184%), safflower in Karnataka (93%).

Chart 5.4: Supply Curve and Projected CoP for Mandated Rabi Crops, RMS 2021-22

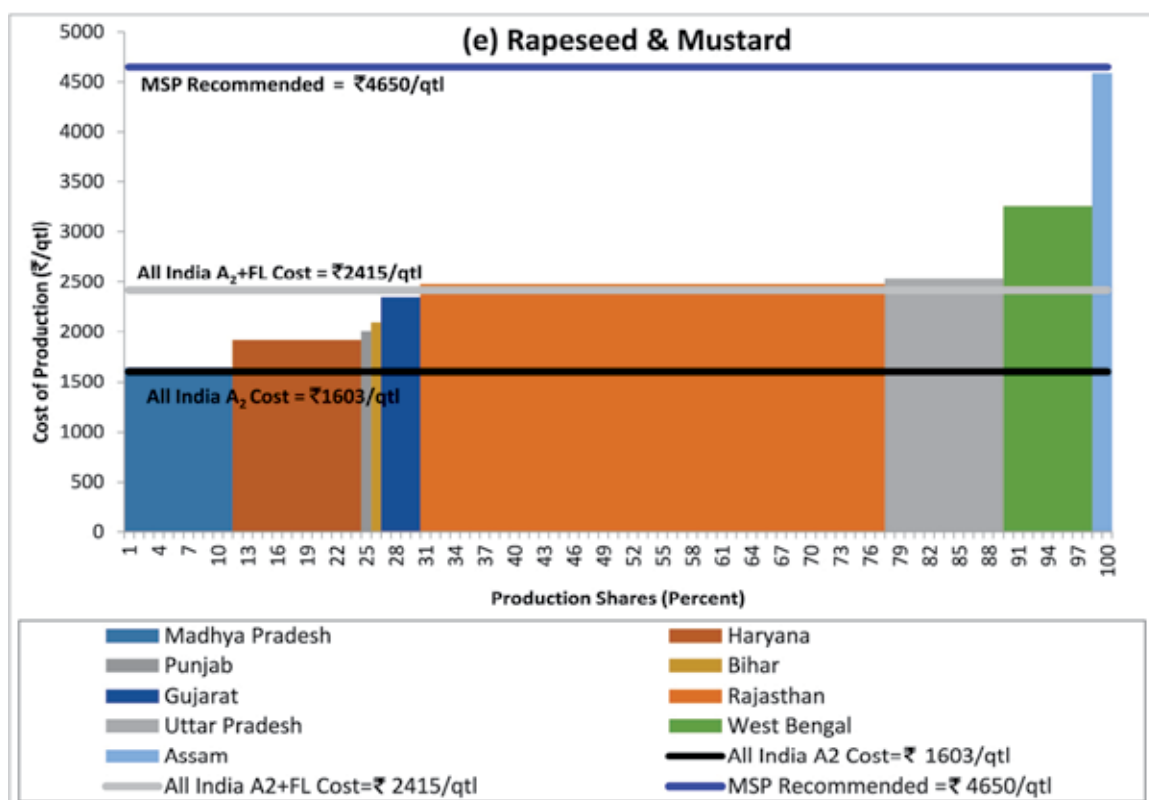
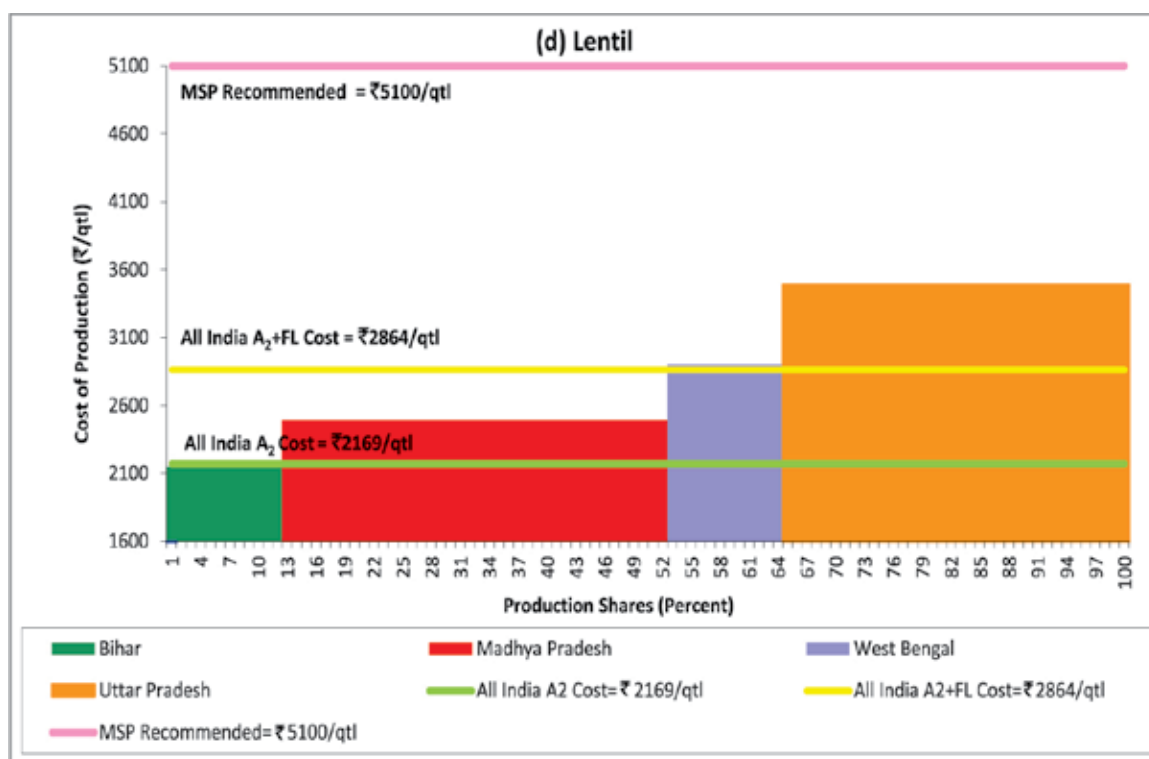


Price Policy for Rabi Crops

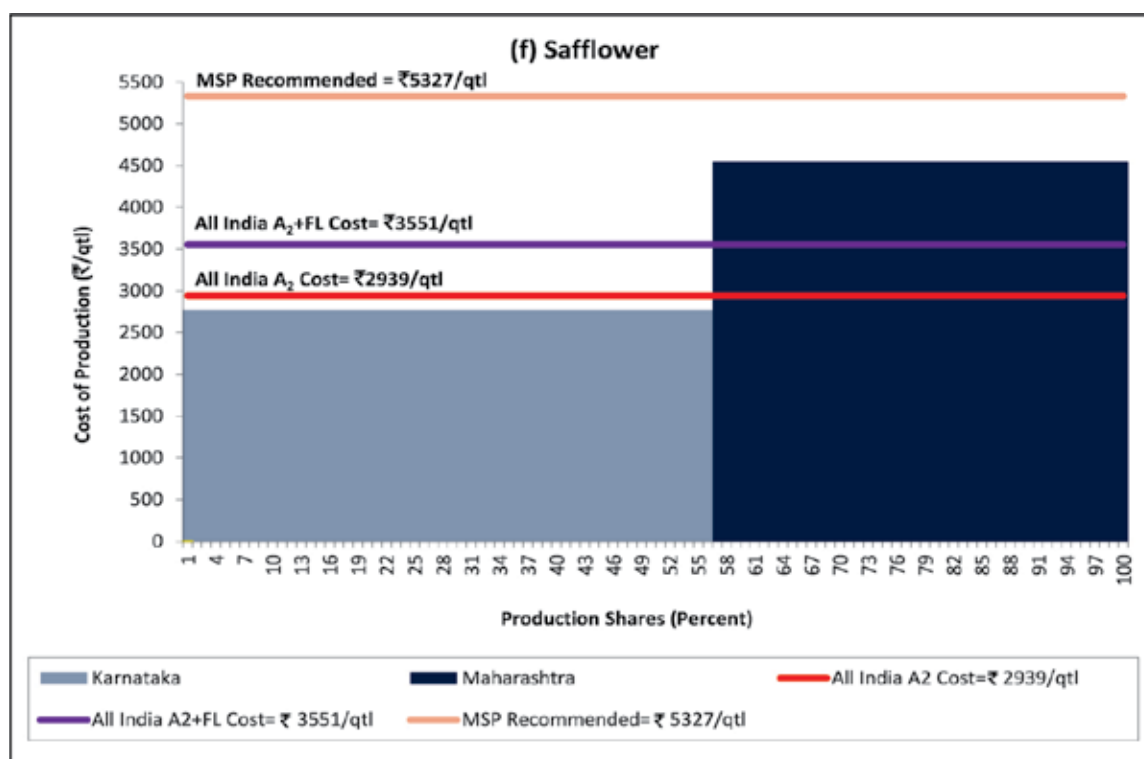


Costs, Returns and Inter-Crop Parity

Costs, Returns and Inter-Crop Parity



Price Policy for Rabi Crops



Note: Production shares to derive all-India CoP of a crop are related to projected States

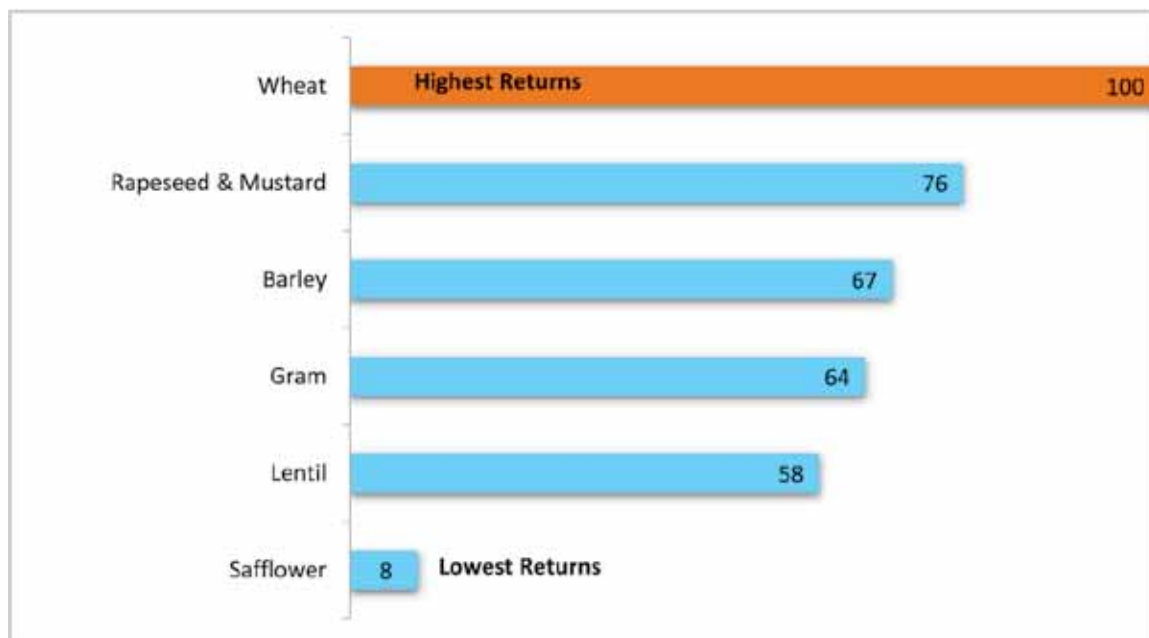
Inter-Crop Parity in Returns of Rabi Crops

5.23 Inter-crop parity being an important factor for determination of MSP, the Commission analysed per hectare relative average gross returns from different competing crops. The basic idea is that area allocation amongst different crops be such that their respective per hectare returns are more or less balanced and help in developing a production pattern keeping in view changing demand patterns. Chart 5.5 shows per hectare relative average gross returns over CoC A₂+FL in percentage terms for each of mandated rabi crops with reference to wheat during TE2018-19. It is revealed that wheat has the highest relative average gross returns, while safflower has lowest returns at 8 percent only. Cereals have higher returns than pulses and safflower. Among the pulses, gram has higher returns at 64 percent than lentil (58%). Rapeseed & mustard has lower return at 76 percent than wheat but higher than other competing crops. The relative gross returns on per hectare basis show that wheat has comparatively much higher returns than pulses and oilseeds, which reveals that the cultivation of pulses and oilseed is less profitable than the cultivation of wheat. This implies that if gram or lentil or rapeseed-mustard is to be promoted, the relative incentive structure has to be changed, or yields should be increased or both.

5.24 Due to lower returns, high production risks and lack of assured market and remunerative prices in barley, pulses and oilseeds, farmers prefer to grow wheat. By improving relative returns through higher MSP, assured markets, reducing costs

and improving yields, farmers should be encouraged to grow pulses and oilseeds in rabi season.

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



Note: Average Gross Returns of safflower are for 2017-18 and 2018-19 for Karnataka, and for 2017-18 for Maharashtra, due to unavailability of data

Source: CACP using CS data

Comparison of CACP Cost Estimates with State Estimates

- 5.25 The estimates of cost of cultivation/production were provided by various States. The projected cost of production/cultivation and yields provided by States and CACP cost projections for mandated rabi crops are given in Annex Table 5.7. It is observed that there are variations in cost estimates provided by the States and CACP estimates. The main reason for variations in these two sets of estimates is different methodologies and cost concepts used by the States and CACP.
- 5.26 The projected CoP for wheat by Bihar, Gujarat, Haryana and Punjab was higher than CACP projections while estimates of Chhattisgarh, Rajasthan and Uttar Pradesh were lower than CACP estimates. For barley, the projected CoPs by Rajasthan and Uttar Pradesh were lower than CACP estimates. In case of pulses, cost of production estimates of Andhra Pradesh, Gujarat, Haryana, Karnataka in gram, and Bihar for gram and lentil were higher than CACP cost of production projections while Chhattisgarh and Rajasthan for gram, and Uttar Pradesh for gram and lentil were lower. For rapeseed & mustard, cost of production estimates of Bihar, Gujarat and Punjab were more than CACP estimates while Haryana, Rajasthan and Uttar Pradesh estimates were less than CACP costs.

- 5.27 The main reasons for higher cost projection estimates of wheat by Bihar were inclusion of risk cost of ₹5,009 per hectare and 28.5 percent higher cost of labour (human, bullock, machine), 40.3 per cent higher on seed, fertiliser & manure, insecticides and irrigation, and 191.1 percent higher on interest on working and fixed capital than the CS data used by CACP. Similarly, Karnataka had included marketing expenses and managerial cost amounting to ₹8,813 per hectare for gram, while labour (human, bullock, machine) cost was 71.8 percent higher, cost on seed, fertiliser & manure and rental value of owned land was 51.8 percent higher, and interest on working and fixed capital was 223.6 percent higher than CACP estimates.
- 5.28 In case of Haryana and Punjab for barley, Odisha and Punjab for gram, and Andhra Pradesh, Chhattisgarh and Odisha for rapeseed & mustard, States have provided cost estimates but comparison could not be done, as cost projections for these crops in the States have not been undertaken by CACP due to either non-availability of cost data under the Comprehensive Scheme or negligible share of the State in all-India production and small share of a particular crop in the State total production of the crop group. On the other hand, Jharkhand, Madhya Pradesh and Maharashtra for wheat and gram; Himachal Pradesh for wheat and barley; Uttarakhand for wheat; Telangana for gram; Madhya Pradesh and West Bengal for lentil and rapeseed & mustard; Assam for rapeseed & mustard; and Karnataka and Maharashtra for safflower have not provided cost projections for RMS 2021-22.

Issue Related to Sample Size under Comprehensive Scheme

- 5.29 Presently, the cost data for rabi crops collected by DES are available with a time lag, which reduces its relevance in cost projection exercise. The Commission recommends that the time lag in furnishing of cost estimates to CACP should be minimised as web based software, Farm Analysis Package (FARMAP 2.0) has reduced time lag between data collection and generation of cost estimates.
- 5.30 The Commission has analysed the actual cost estimates under Comprehensive Scheme for making projections for the RMS 2021-22 at Annex Table 5.8, and observed that there are certain crops in some States whose share 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 were also instances, where sample size for certain crops in the State and all-India was inadequate, and may not be a representative sample for cost projections. The Commission suggests that additional villages/clusters should be selected for such crops and States, so that sample size of barley in Madhya Pradesh, gram in Haryana and Jharkhand, lentil in Rajasthan, rapeseed & mustard in Chhattisgarh and safflower in Karnataka, may be increased. The sample size of safflower at all-India level is too small and can undermine the reliability and representativeness of cost of production projections. Therefore, sample size must be increased immediately for safflower by selecting additional villages/clusters.
- 5.31 The Commission has also analyzed State-wise area and production of the mandated rabi 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 would improve representation and reliability of cost projections at all-India level. Therefore, the Commission recommends inclusion of such States under the CS. The Commission also suggests that Comprehensive Scheme may be implemented in Jammu & Kashmir for wheat and rapeseed & mustard.

Recapitulation

- 5.32 During TE2018-19, average gross returns over CoC A_2 +FL were highest (₹40,749/ha) in wheat, followed by rapeseed & mustard (₹30,834/ha), barley (₹27,280/ha), gram (₹25,920/ha), lentil (₹23,588/ha), and the lowest (₹3,406/ha) in safflower. The rate of gross returns over CoC A_2 +FL was the highest (110.4%) in wheat, followed by lentil (107%), rapeseed & mustard (100.7%), gram (88.2%), barley (69.2%), and the lowest (11.9%) in safflower.
- 5.33 The all-India average daily wage rate of agricultural labour (at current prices) during rabi season of 2019-20 registered an increase of 6 percent, while weighted index of farm inputs such as HSD, fertiliser & nitrogen compounds, electricity, agricultural tractors, lube oils, cattle feed, fodder, and pesticides & other agrochemical products increased by 1 percent. The all-India CIPI for rabi crops registered a growth of 6.6 percent in crop season 2020-21 (RMS 2021-22). As all-India weighted share of human labour in rabi crops during 2018-19 was reasonably high (35%), the farmers should be encouraged to adopt farm mechanisation to reduce cost of cultivation and improve profitability.
- 5.34 The all-India per quintal A_2 +FL cost of production for crop season 2020-21 (RMS 2021-22) is projected at ₹960 for wheat, ₹971 for barley, ₹2,866 for gram, ₹2,864 for lentil, ₹2,415 for rapeseed & mustard, and ₹3,551 for safflower. All-India per quintal C_2 cost of production is projected at ₹1,467 for wheat, ₹1,404 for barley, ₹4,012 for gram, ₹4,204 for lentil, ₹3,470 for rapeseed & mustard, and ₹4,908 for safflower. The increase in projected CoP A_2 +FL during crop season 2020-21 over 2019-20 varied from 2.3 percent in gram and safflower to 5.7 percent in barley. The relative average gross returns were highest for wheat, followed by rapeseed & mustard, barley, gram, lentil, and the lowest for safflower. As wheat production has increased substantially in the country and resulted in excessive stocks, farmers may be encouraged to grow oilseeds and pulses by improving relative returns through assured market and prices, reducing cost of cultivation and improving yields of these crops.



Chapter 6

Considerations and Recommendations for Price Policy

Chapter 6

- 6.1 The Commission for Agricultural Costs and Prices (CACP) has a mandate to recommend the Minimum Support Price (MSP) for six rabi crops, namely, wheat, barley, gram, lentil, rapeseed-mustard and safflower and suggest non-price policy measures to incentivise farmers for adopting improved technologies, developing crop production pattern in line with changing demand and ensuring rational utilisation of land, water and other production resources. As a part of price policy recommendations, the Commission considered the cost of production, one of the important factors in the determination of MSP of mandated crops, estimated based on the cost estimates furnished by DES, Ministry of Agriculture & Farmers Welfare under “Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in India”. Besides cost of production, the Commission also considered other important market related factors such as demand-supply situation, domestic and world price trends, inter-crop price parity, terms of trade between agriculture and non-agriculture sector, likely impact of price policy on the Indian economy and utilization of land, water and other production resources and a minimum of 50 percent as the margin over the cost of production. The Commission had wide-ranging consultations and examined comments and suggestions received from State Governments, Central Ministries/Departments, farmers/farmers associations, research institutions, industry/industry associations, etc. before finalizing its recommendations.

Global Outlook

- 6.2 Global wheat supply is forecast to increase in 2020-21 on account of higher production in several key wheat-producing regions and higher carry-over stocks from previous year. Trade is forecast to be stagnant, while utilization is expected to decline marginally due to likely contraction in demand for feed and industrial use.

Wheat prices are expected to be subdued due to dual effect of record supplies and high carryover stocks with competitive prices of corn and coarse grains owing to their bumper production.

- 6.3 Canada, Myanmar and Australia are major exporters of pulses to India, with Canada being the largest exporter to India. Total production and supply of pulses in Canada, which exports 90 percent of its production, is forecast to marginally decline in 2020-21 though supply of dry peas is forecast to remain stagnant at 2019-20 level. Exports from Canada are estimated to increase marginally based on strong demand from China, Bangladesh and India. In Myanmar, which exports about 80-90 percent of its tur production and 70-80 percent of urad/black gram to India, production of beans and pulses, which fell in 2019-20 due to low rainfall and low prices, is expected to increase by 3 percent in 2020-21. Although India was one of the world's largest importers of pulses but imports have declined during the last 2-3 years due to higher domestic production. Prices of pulses are expected to increase moderately in 2020 due to increased demand from India and tighter supply due to lower production in 2019-20 and low stocks.
- 6.4 Global oilseed production is estimated to increase in 2020-21 due to higher production of soybean in USA and Brazil and canola in Australia and Ukraine. Similarly global production of vegetable oils is also likely to increase due to increase in palm oil production in Indonesia and Malaysia. However, subdued bio diesel demand from European Union due to COVID-19 pandemic and depressed crude oil prices are likely to result in lower demand for oilseeds and edible oil. Thus oilseed prices are forecast to fall in 2020-21 due to cumulative impact of higher supply and lower demand.

Domestic Demand-Supply Scenario

- 6.5 Wheat production is estimated to reach a record level of 106.2 million tonnes in 2019-20, while wheat stocks in central pool were about 55 million tonnes on June 30, 2020, nearly double the stocking norm of 27.6 million tonne on 1st July 2020. The record production of wheat and larger stocks will put downward pressure on wheat prices since wheat production has outstripped demand and export opportunities are limited as domestic price is higher than world price.
- 6.6 Pulses production in the country is estimated to increase in 2019-20 compared to 2018-19 but lower than the target. Among rabi pulses, lentil production is forecast to show a large jump in 2019-20 but still lower than 2017-18 level, while production of gram is expected to increase marginally. Although the rate of inflation for pulses based on both WPI and CPI, which was in negative zone during 2017 and 2018, increased significantly during 2019 and 2020 but currently market prices of most pulses are below the MSP. Pulses were a significant source of inflationary pressure since June 2019. The high inflation for pulses is the result of lower production of tur, urad, moong and lentil during the last two years due to unfavourable weather conditions.

- 6.7 Rapeseed and mustard accounts for about 83 percent of total production of rabi oilseeds but production of rapeseed and mustard has grown by only about 2 percent annually in the last 10 years. Market price of mustard seed has remained well below the MSP during last four seasons, as there has been low procurement by public agencies. Prices of safflower have also remained substantially lower than the MSP in the recent years.

Non-Price Policy Recommendations

Managing Grain Stocks: Review Open-Ended Procurement Policy

- 6.8 The procurement of cereals, pulses and oilseeds can continue with strong momentum in every marketing season provided the procurement operations are followed with consonant liquidation of stocks at remunerative prices by the procurement agencies. Public procurement of rice and wheat at MSP has led to large public stocks, which are costly to maintain. This year the stocks of wheat and rice are expected to see a higher offtake owing to additional allocation under Atmanirbhar Bharat Abhiyan and Pradhan Mantri Garib Kalyan Anna Yojna (PMGKAY). However, stocks would continue to be much higher than the stocking norms. The Commission fears that open-ended procurement policy for rice and wheat will lead to significant stock build-up and maintaining these stocks may be unsustainable. The Commission reiterates its earlier recommendation for urgent liquidation of excess stocks of wheat, given limited scope for exports. The Commission also recommends that open-ended procurement policy for rice and wheat should be reviewed and farmers should be incentivised to shift to oilseeds, pulses and nutri-cereals through effective procurement policy for these crops under PM-AASHA.
- 6.9 Wheat procurement in Uttar Pradesh, Rajasthan and Bihar is much lower than their shares in total marketed surplus and production. The Commission, therefore, recommends that efforts should be made to strengthen procurement operations in these States and create adequate scientific storage infrastructure to ensure remunerative price to farmers.

Promoting Oilseeds Production

- 6.10 While the country has achieved remarkable success in pulses production and India's import dependence on pulses has reduced substantially, oilseeds production shortfall continues to be a major concern as regards self-sufficiency. Edible oil consumption has been rising steadily in India and to meet growing demand, the country continues to rely primarily on imports. Edible oil imports have increased manifold over the last two decades as domestic oilseed production has failed to keep pace with rising demand. Edible oils constitute the largest item in India's agricultural imports basket. Therefore, significant efforts are needed to improve productivity of oilseeds as well as increase area under oilseeds in the rice fallow areas of Eastern States and high oil content crop like oil palm. Productivity of oilseeds can also be enhanced by taking measures to bridge the yield gap. The Commission recommends that National



Mission on Edible Oils covering both primary and secondary source of edible oils should be launched to boost domestic production of oilseeds.

Remunerative Prices for Oilseeds and Pulses

- 6.11 In keeping with the Government's objective of achieving self-sufficiency in pulses and oilseeds production and to keep pace with rising demand in Indian dietary pattern, the Commission has endeavoured to induce a shift in cropping pattern from cereals to pulses and oilseeds by recommending substantially higher MSP for these crops. However, the objective of promoting these crops will be effective only when announcement of high MSP is backed by robust procurement system. Low procurement by public agencies in times of higher production forces farmers to sell their produce at low prices depriving them of the benefit of assured remunerative returns. The Commission is of the view that the institutional and infrastructural constraints that hinder price support linked procurement should be addressed urgently.
- 6.12 Price Support Scheme (PSS) has made a significant progress in terms of procurement of pulses and oilseeds in the last few years but Price Deficiency Payment Scheme (PDPS) and Private Procurement & Stockist Scheme (PPSS) are yet to take off. Procurement of oilseeds by public agencies is not feasible as oilseeds procured under the PSS are eventually sold in open market at a discounted price, which discourages private trade to procure directly from farmers at MSP. The Commission recommends that special efforts should be made to persuade States to implement Price Deficiency Payment Scheme and Private Procurement & Stockist Scheme for oilseeds as these Schemes can address the procurement issue of commercial crops in a sustainable manner.

Investment in Agricultural Research, Development and Extension

- 6.13 Investment in agriculture is a primary driver of productivity growth and competitiveness. Notwithstanding the importance of agricultural research and development (R&D) and infrastructure, there has been persistent underinvestment in agriculture. For example, expenditure on research as percentage of agricultural GDP has stagnated at less than 0.5 percent in the country for last two decades. Shortage of extension staff has adversely affected agricultural information and extension services in most of the States. With about 80 per cent share, households dominate the investment in agriculture, while the share of public sector is about 17 percent and private corporate sector is less than 3 percent. The private sector should play a larger role in agricultural R&D and infrastructure development. The Commission recommends that private sector should invest more in agricultural R&D and sustain those higher funding levels over the next 2-3 decades to meet the challenge of ensuring food and nutritional security. However, private sector investment does not replace public investment as public and private investment particularly in R&D are complementary. Public sector investment in agricultural research, development and extension services need to be increased for improving

long-term productivity growth and competitiveness of the sector. There is an urgent need to fill vacancies in extension services on priority basis and promote use of information and communications technology (ICT) for providing timely extension and advisory services to farmers.

Enhance Crop Productivity

- 6.14 Since potential for area expansion is limited, further increase in production in the coming years has to come from productivity enhancements. Improving agricultural productivity is crucial in order to meet rising demand for food as well as to make agriculture globally competitive. Enhancing productivity is also critical to reduce cost of production and increase profitability of farmers. In many States, yield levels are still far behind their full potential. Attention, hence, may be given to the lagging States in terms of timely availability of quality seed and other inputs, improved farm practices, assured minimum support price through procurement operations etc. In the absence of major breakthrough in oilseeds, production and productivity growth has either remained stagnant or declined. The yield levels in India are below the world average and much lower than other producing countries having the highest yield of various crops. Hence, concerted efforts are needed to increase productivity and reduce yield gaps through various yield gap-bridging strategies like research, quality inputs, improved agricultural practices, and extension activities with special attention on States with low productivity.
- 6.15 Seed Replacement Rate (SRR) and Varietal Replacement Rate (VRR) are quite low in the country due to various reasons such as lack of awareness about potential of quality seed, non-availability, high seed price, etc. The Commission recommends that the States should prepare Seed Rolling Plan to provide quality seed to farmers and increase the SRR to 33 percent for self-pollinated crops and 50 percent for cross-pollinated crops.

Historic Reforms in Agricultural Marketing System

- 6.16 The trading and marketing infrastructure in agriculture has been long-awaiting guided liberalization that has been implemented by promulgating “The Farmers’ Produce Trade and Commerce (Promotion and Facilitation) Ordinance, 2020”, “The Essential Commodities (Amendment) Ordinance, 2020” and “The Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Ordinance, 2020”. The implementation of these reforms could be a game-changer for Indian agriculture over the medium-term as it will remove existing market restrictions, eliminate trade barriers in agriculture, empower farmers to engage directly with buyers, create a common agricultural market and promote investment, productivity and competitiveness. However, smooth implementation of the Ordinances will be contingent on active participation of private sector and States, seamless functioning of electronic trading platforms for agricultural commodities, scientific assaying and grading infrastructure at the backend and hand holding of farmers.



Reforms in Fertilizer Pricing and Subsidy

- 6.17 Fertiliser is one of the crucial inputs for increasing agricultural productivity. However, the current pricing policy has resulted in imbalanced use of chemical fertilizers and micronutrient deficiencies in soil leading to overall depletion of soil health in the long run. Fertiliser subsidy has succeeded in achieving its objective of increasing fertiliser consumption and hence, increasing agricultural production, but it has become financially unsustainable. Since the majority of Indian farmers are small and marginal, there is a need to continue subsidizing consumption of fertilizers. However, there is a need to revisit the subsidy structure for fertilisers and promote a balanced use of macronutrients along with secondary nutrients and micronutrients. Thus, to address the issue of imbalance in use of fertilizers and financial viability of fertilizer industry, the Commission is of the opinion that fertiliser subsidy should be directly transferred to farmers through DBT, based on database generated under PM-KISAN, so that farmers can make choices about use of different nutrients based on soil nutrient status. The Commission recommends that subsidy of about ₹5,000 per year (average farm size of 1.08 ha x average subsidy of ₹4,585/ha) should be transferred to all farmers in two instalments of ₹2,500/- each at the beginning of kharif and rabi season. However, the DBT of subsidy should be linked to the actual purchase of fertilizers by beneficiary farmers.

Promote Farm Mechanization

- 6.18 Given the fact that there is labour shortage in agriculture and wage rates have been increasing, it is appropriate time to respond to this situation by promoting farm mechanization. Since, majority of farm holdings are small and fragmented, there is a need to promote farm mechanization through Custom Hiring Centres. The Government has launched a multi-lingual mobile app-based aggregator platform 'CHC Farm Machinery' to facilitate easy access to farm machinery to farmers at their doorstep. Both public and private sector should join hands with farmers to support innovations in mechanization and disseminate knowledge through demonstrations on agricultural mechanization to promote mechanization at the field level. In the long run, use of such technological solutions will secure farmers' patronage and result in a stronger agricultural ecosystem.

Strengthen Risk Management Measures

- 6.19 Given the high risks of weather, pests, diseases, etc. in agriculture, crop insurance is commonly used mechanism for the management of the risks associated with crop production. In February 2016, Government of India launched Pradhan Mantri Fasal Bima Yojana (PMFBY) to provide insurance coverage and financial support to farmers in the event of failure of crop due to natural calamities, pests and diseases. The Scheme aimed at strengthening resilience of farmers through reducing risk and vulnerabilities. The Scheme has made good progress as number of farmers and area insured under the Scheme has increased although there have been many challenges like timely crop loss assessment, delay in settlement of claims, delay in payment of State share of premium, compulsory enrolment of loanee farmers, etc. Addressing these concerns, the Government revamped the Scheme in February

2020 and inter-alia made the Scheme voluntary for farmers. While the modifications have made PMFBY more suitable for farmers but efforts are needed to encourage farmers to enrol in the crop insurance scheme to efficiently manage risks and make farming sector more resilient.

Promotion of Farmer Producer Organizations (FPOs)

- 6.20 Government of India launched a Central Sector Scheme “Formation and Promotion of Farmer Produce Organizations (FPOs)” in February 2020 to form and promote 10,000 new FPOs. Significant progress has already been made by NABARD, SFAC, Ministry of Rural Development, NGOs and other developmental organizations in promoting FPOs. In order to provide fillip to this Scheme, there is a need to facilitate improved networking and to develop synergies amongst FPOs promoted by various agencies and provide financial and technical support to these FPOs as most of these are at nascent stage.

Pest and Disease Management

- 6.21 The disease and pest infestation is considered as one of the major constraints and pose serious risk for farmers as they can adversely affect production and yield. Apart from common diseases and pests, India experienced serious desert locust outbreak after more than two decades. The Commission suggests that systematic research on desert locust and its control in the country should be undertaken and appropriate preventive control strategies for management of desert locust should be implemented. International collaboration in research, control and information dissemination is required for effective management and control of locust.

Rationalizing Mandi Fees and Other Charges

- 6.22 Some States charge high mandi fee and various other charges on the sale and purchase of agricultural produce. Such fees/charges lead to distortions and fragmentation of agricultural market. In order to achieve the objective of ‘one nation-one market’ the Commission reiterates its earlier recommendation of rationalization of such charges to encourage market competition and promote free interstate trade in agriculture.

Rational Agricultural Trade Policy

- 6.23 To harness export potential of Indian agriculture, it is important to integrate farmers into the global value chains and markets directly. With the easing of trade restrictions, establishing product specific clusters and promoting private sector participation, export potential can be realised. However, the trade policy need to be stable and predictable but must safeguard the interests of farmers.
- 6.24 In order to check rising prices of pulses in general and lentil in particular, the Government reduced import duty on lentils on 2nd June 2020 when local lentil production was arriving in the market and boosted total domestic availability. Since prices of all major pulses are ruling below MSP, reduction in import duty is likely to have further adverse impact on domestic prices. The Commission, therefore,

recommends that such decisions of allowing imports and/or reduction in import duties should not coincide with procurement season of crops.

- 6.25 India is highly dependent on imports to meet its edible oil requirements and imports have increased significantly. On the other hand, domestic market prices of oilseeds have generally remained well below the MSP during the last few years. The Commission recommends that to promote domestic production, farmers need to be protected against uncontrolled imports through dynamic tariff structure linked to world prices, domestic demand-supply situation and domestic prices linked to MSP of oilseeds. Since, imports of refined edible oils have increased faster compared with crude oils, which has adversely affected domestic refining industry, the duty differential between crude and refined oils should be at least 10 percent to discourage import of refined oils.

Price Policy Recommendations

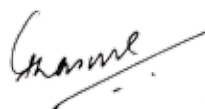
- 6.26 Keeping various factors in mind, the commission recommends the following MSPs of different rabi crops.

Table 6.1: Minimum Support Price (MSP) Recommendations for Rabi Marketing Season (RMS), 2021-22

Crops	Projected Cost A ₂ +FL for RMS 2021-22	MSP for RMS 2020-21	MSP Recommendation for RMS 2021-22	MSP as Percent of A ₂ +FL
Wheat	960	1925	1975 (2.6)	206
Barley	971	1525	1600 (4.9)	165
Gram	2866	4875	5100 (4.6)	178
Lentil (Masur)	2864	4800	5100 (6.3)	178
Rapeseed/Mustard	2415	4425	4650 (5.1)	193
Safflower	3551	5215	5327 (2.1)	150

Note: Figures in parentheses are percentage increase over the previous year

The Commission is of the considered view that above price policy and non-price policy recommendations would help in reforming agricultural landscape and incentivise farmers to adopt rational and ecologically sustainable cropping pattern that is capable of meeting the changing dietary patterns and improve farmers' income.



(Vijay Paul Sharma)
Chairman



(Anupam Mitra)
Member Secretary



Annex Tables

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

(Million hectares)

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*
Rice	Kharif	40.81	37.62	38.05	40.14	38.91	39.45	39.83	39.66	39.85	39.35	39.96	38.95
	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
	Total	45.54	41.92	42.86	44.01	42.75	44.14	44.11	43.50	43.99	43.77	44.16	43.60
Wheat	Rabi	27.75	28.46	29.07	29.86	30.00	30.47	31.47	30.42	30.79	29.65	29.32	30.55
	Total	27.75	28.46	29.07	29.86	30.00	30.47	31.47	30.42	30.79	29.65	29.32	30.55
Jowar	Kharif	2.89	3.24	3.07	2.62	2.43	2.28	2.27	2.14	2.06	2.06	1.75	1.68
	Rabi	4.64	4.55	4.31	3.63	3.79	3.52	3.89	3.94	3.57	2.96	2.34	2.98
	Total	7.53	7.79	7.38	6.25	6.21	5.79	6.16	6.08	5.62	5.02	4.09	4.66
Bajra	Kharif	8.75	8.90	9.61	8.78	7.30	7.81	7.32	7.13	7.46	7.48	7.11	7.41
	Total	8.75	8.90	9.61	8.78	7.30	7.81	7.32	7.13	7.46	7.48	7.11	7.41
Maize	Kharif	6.89	7.06	7.28	7.38	7.21	7.31	7.56	7.18	7.84	7.43	7.33	7.53
	Rabi	1.28	1.20	1.27	1.40	1.46	1.76	1.62	1.63	1.79	1.95	1.70	1.75
	Total	8.17	8.26	8.55	8.78	8.67	9.07	9.19	8.81	9.63	9.38	9.03	9.27
Ragi	Kharif	1.38	1.27	1.29	1.18	1.13	1.19	1.21	1.14	1.02	1.19	0.89	0.98
Barley	Rabi	0.71	0.62	0.71	0.64	0.70	0.67	0.71	0.59	0.66	0.66	0.58	0.62
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	18.06
	Rabi	6.62	6.37	6.29	5.67	5.94	5.95	6.22	6.15	6.01	5.57	4.61	5.34
	Total	27.45	27.68	28.34	26.42	24.76	25.22	25.17	24.39	25.01	24.29	22.15	23.41
Cereals	Kharif	61.64	58.92	60.10	60.89	57.73	58.72	58.78	57.89	58.84	58.06	57.50	57.01
	Rabi	39.10	39.13	40.17	39.40	39.78	41.11	41.97	40.42	40.95	39.65	38.12	40.55
	Total	100.74	98.05	100.27	100.29	97.52	99.83	100.75	98.31	99.79	97.71	95.62	97.56
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	4.23
Gram	Rabi	7.89	8.17	9.19	8.30	8.52	9.93	8.25	8.40	9.63	10.56	9.55	9.68
Urad	Kharif	2.02	2.23	2.51	2.36	2.44	2.35	2.49	2.72	3.48	4.35	4.73	3.64
	Rabi	0.65	0.73	0.74	0.86	0.69	0.72	0.76	0.90	1.00	0.93	0.88	0.80
	Total	2.67	2.96	3.25	3.22	3.13	3.06	3.25	3.62	4.48	5.28	5.60	4.44
Moong	Kharif	2.24	2.46	2.85	2.61	1.97	2.34	2.03	2.76	3.37	3.26	3.83	3.44
	Rabi	0.60	0.63	0.76	0.78	0.74	1.04	0.99	1.07	0.96	0.98	0.92	0.90
	Total	2.84	3.07	3.51	3.39	2.72	3.38	3.02	3.83	4.33	4.24	4.75	4.34
Lentil (Masur)	Rabi	1.38	1.48	1.60	1.56	1.42	1.34	-	-	-	1.55	1.36	1.43
Pulses	Kharif	9.81	10.58	12.32	11.19	9.95	10.33	9.99	11.31	14.36	13.93	14.83	13.08
	Rabi	12.29	12.70	14.08	13.27	13.30	14.88	13.56	13.60	15.08	15.88	14.33	14.36
	Total	22.09	23.28	26.40	24.46	23.26	25.21	23.55	24.91	29.45	29.81	29.16	27.44
Foodgrains	Kharif	71.45	69.51	72.42	72.08	67.69	69.05	68.77	69.21	73.20	72.00	72.33	70.09
	Rabi	51.39	51.83	54.25	52.67	53.09	55.99	55.53	54.01	56.03	55.53	52.45	54.91
	Total	122.83	121.33	126.67	124.75	120.78	125.04	124.30	123.22	129.23	127.52	124.78	125.00
Groundnut	Kharif	5.29	4.62	4.98	4.32	3.93	4.65	4.01	3.84	4.58	4.14	4.13	4.10
	Rabi	0.88	0.86	0.88	0.95	0.79	0.86	0.76	0.76	0.76	0.75	0.60	0.70
	Total	6.16	5.48	5.86	5.26	4.72	5.51	4.77	4.60	5.34	4.89	4.73	4.80
Sesamum	Kharif	1.81	1.94	2.08	1.90	1.71	1.68	1.75	1.95	1.67	1.58	1.42	1.56
Nigerseed	Kharif	0.39	0.38	0.37	0.36	0.31	0.30	0.23	0.25	0.26	0.22	0.16	0.23
Soybean	Kharif	9.51	9.73	9.60	10.11	10.84	11.72	10.91	11.60	11.18	10.33	11.13	12.08
Sunflower	Kharif	0.66	0.57	0.32	0.26	0.30	0.25	0.22	0.16	0.17	0.14	0.12	0.11
	Rabi	1.15	0.91	0.61	0.47	0.53	0.42	0.37	0.33	0.21	0.15	0.14	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	0.24
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	6.14
Safflower	Rabi	0.29	0.29	0.24	0.25	0.18	0.18	0.17	0.13	0.17	0.08	0.05	0.04
Nine Oilseeds	Kharif	18.53	17.97	18.23	18.42	18.32	19.65	18.21	18.86	18.67	17.23	17.71	19.11
	Rabi	9.03	7.99	9.00	7.89	8.16	8.40	7.39	7.22	7.51	7.28	7.09	7.20
	Total	27.56	25.96	27.22	26.31	26.48	28.05	25.60	26.09	26.18	24.51	24.79	26.31
Sugarcane		4.42	4.17	4.88	5.04	5.00	4.99	5.07	4.93	4.44	4.74	5.06	4.54
Cotton		9.41	10.13	11.24	12.18	11.98	11.96	12.82	12.29	10.83	12.59	12.61	13.33
Jute		0.79	0.81	0.77	0.81	0.78	0.76	0.75	0.71	0.71	0.69	0.67	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	0.05
Jute & Mesta		0.90	0.91	0.87	0.90	0.86	0.84	0.81	0.78	0.76	0.74	0.70	0.68

Note: *Third Advance Estimates (2019-20)

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

Price Policy for Rabi Crops

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

(Million tonnes)

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*
Rice	Kharif	84.91	75.92	80.65	92.78	92.37	91.50	91.39	91.41	96.30	97.14	102.04	101.70
	Rabi	14.27	13.18	15.33	12.52	12.87	15.15	14.09	13.00	13.40	15.62	14.44	16.24
	Total	99.18	89.09	95.98	105.30	105.24	106.65	105.48	104.41	109.70	112.76	116.48	117.94
Wheat	Rabi	80.68	80.80	86.87	94.88	93.51	95.85	86.53	92.29	98.51	99.87	103.60	107.18
Jowar	Kharif	3.05	2.76	3.44	3.29	2.84	2.39	2.30	1.82	1.96	2.27	1.74	1.69
	Rabi	4.19	3.94	3.56	2.69	2.44	3.15	3.15	2.42	2.60	2.53	1.74	2.95
	Total	7.25	6.70	7.00	5.98	5.28	5.54	5.45	4.24	4.57	4.80	3.48	4.63
Bajra	Kharif	8.89	6.51	10.37	10.28	8.74	9.25	9.18	8.07	9.73	9.21	8.66	10.31
Maize	Kharif	14.12	12.29	16.64	16.49	16.20	17.14	17.01	16.05	18.92	20.12	19.41	20.18
	Rabi	5.61	4.43	5.09	5.27	6.05	7.11	7.16	6.51	6.98	8.63	8.30	8.80
	Total	19.73	16.72	21.73	21.76	22.26	24.26	24.17	22.57	25.90	28.75	27.72	28.98
Ragi	Kharif	2.04	1.89	2.19	1.93	1.57	1.98	2.06	1.82	1.39	1.99	1.24	1.69
Barley	Rabi	1.69	1.35	1.66	1.62	1.75	1.83	1.61	1.44	1.75	1.78	1.63	1.59
Nutri/Coarse Cereals	Kharif	28.54	23.83	33.08	32.44	29.80	31.20	30.94	28.15	32.44	34.03	31.38	34.21
	Rabi	11.49	9.72	10.32	9.58	10.25	12.09	11.92	10.37	11.33	12.94	11.67	13.33
	Total	40.04	33.55	43.40	42.01	40.04	43.29	42.86	38.52	43.77	46.97	43.06	47.54
Cereals	Kharif	113.49	99.78	113.77	125.22	122.16	122.70	122.34	119.56	128.74	131.16	133.42	135.91
	Rabi	106.40	103.65	112.48	116.98	116.63	123.09	112.53	115.66	123.24	128.44	129.71	136.75
	Total	219.89	203.44	226.24	242.20	238.78	245.79	234.87	235.22	251.98	259.60	263.13	272.66
Tur (Arhar)	Kharif	2.27	2.46	2.86	2.65	3.02	3.17	2.81	2.56	4.87	4.29	3.32	3.75
Gram	Rabi	7.06	7.48	8.22	7.70	8.83	9.53	7.33	7.06	9.38	11.38	9.94	10.90
Urad	Kharif	0.84	0.81	1.40	1.23	1.43	1.15	1.28	1.25	2.18	2.75	2.36	1.72
	Rabi	0.33	0.43	0.36	0.53	0.47	0.55	0.68	0.70	0.66	0.74	0.70	0.61
	Total	1.17	1.24	1.76	1.77	1.90	1.70	1.96	1.95	2.83	3.49	3.06	2.33
Moong	Kharif	0.78	0.44	1.53	1.24	0.79	0.96	0.87	1.00	1.64	1.43	1.78	1.78
	Rabi	0.26	0.25	0.27	0.40	0.40	0.65	0.64	0.59	0.52	0.59	0.67	0.56
	Total	1.03	0.69	1.80	1.63	1.19	1.61	1.50	1.59	2.17	2.02	2.46	2.34
Lentil (Masur)	Rabi	0.95	1.03	0.94	1.06	1.13	1.02	-	-	-	1.62	1.23	1.44
Pulses	Kharif	4.69	4.20	7.12	6.06	5.92	5.99	5.73	5.53	9.58	9.31	8.09	8.05
	Rabi	9.88	10.46	11.12	11.03	12.43	13.25	11.42	10.82	13.55	16.11	13.98	14.97
	Total	14.57	14.66	18.24	17.09	18.34	19.25	17.15	16.35	23.13	25.42	22.08	23.01
Foodgrains	Kharif	118.14	103.95	120.85	131.27	128.07	128.69	128.06	125.09	138.33	140.47	141.52	143.96
	Rabi	116.33	114.15	123.64	128.01	129.06	136.35	123.96	126.47	136.78	144.55	143.69	151.72
	Total	234.47	218.11	244.49	259.29	257.13	265.04	252.02	251.57	275.11	285.01	285.21	295.67
Groundnut	Kharif	5.62	3.85	6.64	5.13	3.19	8.06	5.93	5.37	6.05	7.60	5.39	7.81
	Rabi	1.55	1.58	1.62	1.84	1.51	1.66	1.47	1.37	1.41	1.66	1.34	1.54
	Total	7.17	5.43	8.26	6.96	4.69	9.71	7.40	6.73	7.46	9.25	6.73	9.35
Sesamum	Kharif	0.64	0.59	0.89	0.81	0.69	0.71	0.83	0.85	0.75	0.76	0.69	0.75
Nigerseed	Kharif	0.12	0.10	0.11	0.10	0.10	0.10	0.08	0.07	0.09	0.07	0.05	0.07
Soybean	Kharif	9.91	9.96	12.74	12.21	14.67	11.86	10.37	8.57	13.16	10.93	13.27	12.24
Sunflower	Kharif	0.36	0.21	0.19	0.15	0.19	0.15	0.11	0.07	0.10	0.08	0.09	0.08
	Rabi	0.80	0.64	0.46	0.37	0.36	0.35	0.32	0.23	0.15	0.14	0.13	0.12
	Total	1.16	0.85	0.65	0.52	0.54	0.50	0.43	0.30	0.25	0.22	0.22	0.20
Rapeseed/ Mustard	Rabi	7.20	6.61	8.18	6.60	8.03	7.88	6.28	6.80	7.92	8.43	9.26	8.70
Safflower	Rabi	0.19	0.18	0.15	0.15	0.11	0.11	0.09	0.05	0.09	0.06	0.02	0.03
Nine Oilseeds	Kharif	17.81	15.73	21.92	20.69	20.79	22.62	19.22	16.70	21.53	21.01	20.68	23.01
	Rabi	9.91	9.15	10.56	9.11	10.15	10.13	8.29	8.55	9.75	10.45	10.85	10.50
	Total	27.72	24.88	32.48	29.80	30.94	32.75	27.51	25.25	31.28	31.46	31.52	33.50
Sugarcane		285.03	292.30	342.38	361.04	341.20	352.14	362.33	348.45	306.07	379.90	405.42	358.14
Cotton\$		29.00	30.50	33.90	36.70	37.00	39.80	38.60	33.20		0.00	0.00	0.00
Cotton\$S		22.28	24.02	33.00	35.20	34.22	35.90	34.81	30.01	32.58	32.81	28.04	36.05
Jute#		9.63	11.23	10.01	10.74	10.34	11.08	10.62	9.94	10.43	9.59	9.50	9.43
Mesta#		0.73	0.59	0.61	0.66	0.59	0.61	0.51	0.58	0.53	0.44	0.32	0.49
Jute & Mesta#		10.37	11.82	10.62	11.40	10.93	11.69	11.13	10.52	10.96	10.03	9.82	9.92

Note: * Third Advance Estimates (2019-20)

\$: CAB estimates of million bales of 170 kgs each

\$S : E&S estimates of Million bales of 170 kgs each

: Million bales of 180 kgs each

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

2. Cotton Advisory Board.

Annexure

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*
Rice	Kharif	2081	2018	2120	2311	2374	2319	2295	2305	2417	2469	2553	2611
	Rabi	3019	3064	3185	3238	3353	3232	3291	3382	3230	3531	3444	3490
	Total	2178	2125	2239	2393	2462	2416	2391	2400	2494	2576	2638	2705
Wheat	Rabi	2907	2839	2989	3177	3117	3145	2750	3034	3200	3368	3533	3508
Jowar	Kharif	1055	853	1119	1257	1171	1050	1014	849	954	1104	989	1005
	Rabi	904	865	827	741	644	896	808	615	730	853	744	989
	Total	962	860	949	957	850	957	884	697	812	956	849	995
Bajra	Kharif	1015	731	1079	1171	1198	1184	1255	1132	1305	1231	1219	1391
Maize	Kharif	2048	1740	2285	2234	2246	2346	2249	2236	2413	2706	2648	2682
	Rabi	4387	3694	4003	3765	4152	4050	4414	4006	3896	4436	4893	5036
	Total	2414	2024	2540	2478	2566	2676	2632	2563	2689	3065	3070	3126
Ragi	Kharif	1477	1489	1705	1641	1396	1661	1706	1601	1363	1662	1390	1719
Barley	Rabi	2394	2172	2357	2516	2521	2718	2280	2439	2663	2695	2837	2573
Nutri/Coarse Cereals	Kharif	1371	1119	1500	1563	1583	1619	1633	1544	1708	1818	1790	1894
	Rabi	1735	1525	1641	1689	1725	2034	1915	1686	1885	2323	2532	2495
	Total	1459	1212	1531	1590	1617	1717	1703	1579	1750	1934	1944	2031
Cereals	Kharif	1841	1693	1893	2056	2116	2089	2081	2065	2188	2143	2172	2253
	Rabi	2721	2649	2800	2969	2931	2995	2681	2862	3010	3074	3170	3165
	Total	2183	2075	2256	2415	2449	2462	2331	2393	2525	2609	2671	2709
Tur (Arhar)	Kharif	671	711	655	662	776	813	729	646	913	967	729	888
Gram	Rabi	895	915	895	928	1036	960	889	840	974	1078	1041	1127
Urad	Kharif	419	363	557	523	586	490	516	459	626	632	500	473
	Rabi	506	587	489	621	679	768	891	773	656	798	796	763
	Total	440	418	542	549	606	555	604	537	632	662	546	525
Moong	Kharif	348	180	538	475	398	410	428	363	488	440	466	519
	Rabi	423	397	354	508	539	620	640	554	546	600	727	619
	Total	364	226	514	483	436	475	498	416	500	477	516	540
Lentil (Masur)	Rabi	693	697	591	678	797	758	-	-	-	1047	901	1009
Pulses	Kharif	478	397	578	541	594	580	573	489	667	668	546	615
	Rabi	804	823	790	831	934	891	842	796	898	1015	976	1042
	Total	659	630	691	699	789	763	728	656	786	853	757	839
Foodgrains	Kharif	1654	1496	1669	1821	1892	1864	1862	1808	1890	1951	1957	2054
	Rabi	2264	2203	2279	2430	2431	2435	2232	2342	2441	2603	2740	2763
	Total	1909	1798	1930	2078	2129	2120	2028	2042	2129	2235	2286	2365
Groundnut	Kharif	1063	835	1335	1188	811	1735	1478	1399	1321	1834	1304	1906
	Rabi	1764	1830	1846	1938	1908	1926	1948	1801	1861	2222	2238	2204
	Total	1163	991	1411	1323	994	1764	1552	1465	1398	1893	1422	1949
Sesamum	Kharif	354	303	429	426	402	426	474	436	448	478	485	477
Nigerseed	Kharif	297	266	290	269	325	328	328	295	332	321	290	320
Soybean	Kharif	1041	1024	1327	1208	1353	1012	951	738	1177	1058	1192	1014
Sunflower	Kharif	540	378	608	566	622	621	512	420	567	627	766	718
	Rabi	696	700	748	783	674	826	866	698	737	924	874	940
	Total	639	576	701	706	655	750	736	608	660	782	826	841
Rapeseed/ Mustard	Rabi	1143	1183	1185	1121	1262	1185	1083	1183	1304	1410	1511	1417
Safflower	Rabi	642	621	617	580	591	638	515	416	567	673	537	608
Nine Oilseeds	Kharif	961	875	1203	1123	1135	1151	1054	884	1153	1219	1168	1204
	Rabi	1097	1146	1174	1155	1244	1207	1126	1186	1300	1436	1531	1457
	Total	1006	958	1193	1133	1168	1168	1075	968	1195	1284	1271	1273
Sugarcane		64553	70020	70091	71667	68254	70520	71512	70720	69001	80198	80105	78844
Cotton \$		524	512	513	496	525	566	504	415	512			
Cotton \$\$		403	403	499	491	486	510	462			443	378	460
Jute		2207	2492	2329	2389	2396	2639	2549	2457	2660	2517	2569	2679
Mesta		1141	1122	1115	1248	1237	1338	1525	1945	1664	1420	1471	1872
Jute & Mesta		2071	2349	2192	2268	2281	2512	2473	2421	2585	2435	2508	2624

Note: * Third Advance Estimates (2019-20)

\$: CAB estimates

\$\$: F&S estimates

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

Price Policy for Rabi Crops

Annex Table 1.4: Share of Major Producing States in Total Production of Rabi Crops (under MSP) TE2019-20

Wheat		Barley		Gram		Lentil		R&M		Safflower	
State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)	State	Share (%)
UP	31.1	Raj	50.4	MP	34.8	MP	36.3	Raj	44.6	Kar	50.2
Pun	17.5	UP	26.8	Raj	18.5	UP	33.1	Har	13.0	MH	39.6
MP	16.4	MP	10.3	MH	17.0	WB	10.7	UP	11.2	TG	4.8
Har	11.4	Har	3.4	Kar	6.7	Bih	10.5	MP	10.5	JH	1.6
Raj	9.7	HP	2.1	UP	6.4	JH	3.9	WB	8.4	WB	1.0
Bih	6.2	UK	1.9	AP	4.2	Raj	2.0	Guj	4.0	Others *	2.9
Guj	2.8	Pun	1.8	Guj	3.6	Asm	1.4	JH	2.3		
MH	1.6	Bih	1.4	CG	3.0	Others *	2.0	Asm	2.1		
Others *	3.3	MH	1.4	JH	2.5			Bih	1.1		
		Others *	0.5	TG	1.6			Others *	2.9		
				Others *	1.8						

Note: * States having less than 1 percent share in total production has been clubbed as others

Source: Calculated from DES, MoA&FW data



Annex Table 1.5: Likely Situation of Wheat Stocks in Central Pool

Name of the Scheme	in Lakh Tonnes
TPDS/NFSA Allocation (Jul – Dec 2020)	126.28
Other Welfare Schemes (Jul – Dec 2020)	0.42
Additional Allocation under PMGKAY (Jul – Nov 2020)	91.14
Total Allocation till Dec 2020	217.84
Stocks in Central Pool as on 30 th Jun 2020	549.91
Estimated Stocks on 30 th Dec 2020	332.07
Stocking Norms (1 st January)	138.00

Source: CACP Calculations

Annex Table 1.6: Inflation Rate (y-o-y) of selected Food Articles based on Wholesale Price Index (WPI) (Base 2011-12=100) (in %)

Commodity Name/Year	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018
All Commodities	3.0	2.7	2.7	3.6	4.8	5.7	5.3	4.6	5.2	5.5
Food Articles	3.2	1.0	-0.2	0.9	1.7	1.9	-2.1	-4.0	-0.2	-1.4
Foodgrains	-8.2	-6.9	-4.3	-4.2	-2.8	-1.7	-0.4	1.5	1.0	2.5
Cereals	-2.0	-2.4	-0.4	0.2	1.7	2.6	3.5	5.1	5.5	6.2
Paddy	4.6	3.4	3.3	3.9	4.2	3.7	4.0	4.8	4.6	4.1
Wheat	-6.9	-6.2	-1.2	-0.1	3.1	5.1	6.4	8.4	8.9	9.5
Jowar	-10.6	-14.8	-10.6	-10.3	-10.3	-6.0	-5.3	-2.1	-3.7	2.0
Bajra	-13.3	-15.5	-16.9	-17.4	-16.4	-13.5	-8.6	-3.9	1.6	11.8
Maize	-13.5	-13.5	-13.2	-12.9	-12.4	-8.4	-5.9	-3.5	0.5	4.5
Barley	-12.4	-12.9	-10.3	-3.9	1.5	2.6	1.2	4.2	4.6	6.4
Ragi	-14.3	-11.5	-14.4	-15.5	-13.8	-12.3	-16.4	-17.4	-15.6	-8.4
Pulses	-30.4	-24.5	-20.6	-22.5	-21.1	-20.2	-17.2	-14.1	-18.1	-13.5
Gram	-40.3	-32.8	-28.4	-30.8	-30.7	-30.1	-27.1	-23.2	-29.1	-23.7
Arhar	-18.3	-12.5	-7.5	-9.4	-4.7	-4.3	-2.5	-4.0	-6.4	-3.9
Moong	-6.3	-3.3	-1.1	-7.7	-5.9	-3.8	1.8	5.6	6.1	5.9
Masur	-21.4	-21.8	-21.7	-22.2	-18.7	-18.5	-14.3	-11.0	-11.9	-9.0
Urad	-31.5	-28.8	-25.8	-26.1	-25.6	-24.8	-20.3	-13.7	-16.7	-13.1
Oilseeds	2.0	7.3	7.8	6.5	8.2	8.8	9.9	10.2	8.2	7.5
Groundnut Seed	-15.4	-13.2	-17.0	-21.6	-21.1	-17.6	-11.9	-3.5	0.2	1.6
Rape & Mustard Seed	-6.8	-4.6	0.6	4.7	4.7	5.8	7.5	7.9	8.2	8.6
Cotton Seed	-9.8	-10.1	-12.0	-13.0	-9.6	-6.1	-3.5	-1.6	-1.3	2.1
Safflower (Kardi Seed)	21.6	19.0	11.4	9.4	5.3	6.6	0.5	-2.4	-0.6	4.6
Sunflower	-9.3	-7.3	-2.2	2.9	-3.6	3.1	8.3	12.1	13.2	17.7
Soybean	6.9	20.8	24.9	24.2	26.3	26.3	23.4	19.8	14.5	11.3

Cont..

Annexure

Annexure

Annex Table 1.6: Inflation Rate (y-o-y) of selected Food Articles based on Wholesale Price Index (WPI) (Base 2011-12=100) (in %)

Commodity Name/Year	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019
All Commodities	4.5	3.5	2.8	2.9	3.1	3.2	2.8	2.0	1.2	1.2
Food Articles	-3.2	-0.4	2.4	4.2	5.2	6.4	7.3	7.3	6.6	7.8
Foodgrains	4.9	7.0	8.1	9.9	9.2	9.3	9.6	10.2	10.4	9.7
Cereals	7.2	8.0	8.3	9.8	8.9	8.4	7.9	7.9	8.7	8.5
Paddy	4.2	4.6	3.6	3.4	2.6	2.4	2.2	2.9	3.2	3.3
Wheat	9.2	9.6	9.9	12.3	10.1	7.5	6.4	5.4	5.8	5.3
Jowar	16.2	17.3	20.9	26.5	27.3	27.9	29.1	26.7	31.8	34.2
Bajra	24.2	23.3	30.0	39.4	43.5	48.0	52.0	50.8	50.2	45.0
Maize	10.7	18.1	27.1	35.5	39.6	45.2	45.7	43.2	49.3	50.0
Barley	9.3	8.3	12.4	15.9	16.4	14.5	15.1	17.9	19.9	19.6
Ragi	-2.7	-2.2	7.5	4.7	0.3	3.8	5.6	5.8	7.2	5.9
Pulses	-5.4	2.1	7.5	10.8	10.6	14.3	18.4	23.1	20.0	16.4
Gram	-14.7	-4.1	4.7	8.8	8.6	13.5	17.6	20.5	13.7	6.9
Arhar	2.2	10.0	11.2	14.7	13.6	18.6	24.0	32.1	35.1	38.1
Moong	10.7	11.1	12.1	13.5	12.0	15.0	15.8	20.6	19.2	15.4
Masur	-7.4	-4.4	0.6	6.1	7.9	9.1	11.8	16.4	16.6	13.5
Urad	-4.1	1.9	7.6	10.6	8.9	11.8	18.5	24.7	23.0	20.0
Oilseeds	10.7	9.0	8.6	6.3	4.9	6.8	7.3	9.2	8.7	8.3
Groundnut Seed	7.1	7.6	9.2	9.0	10.9	18.2	25.1	27.9	30.9	24.8
Rape & Mustard Seed	8.1	5.4	5.0	4.8	2.4	1.0	1.7	3.0	0.8	-0.4
Cotton Seed	-1.3	-3.2	-1.8	1.1	3.7	9.0	10.5	9.2	10.5	9.1
Safflower (Kardi Seed)	11.0	16.7	11.9	13.1	12.8	21.6	32.3	32.8	34.4	37.6
Sunflower	18.4	18.0	19.9	26.6	17.7	12.7	23.3	19.3	12.1	14.7
Soybean	15.9	14.8	10.9	5.0	1.0	3.0	2.1	5.7	4.5	7.3

Cont..

Annex Table 1.6: Inflation Rate (y-o-y) of selected Food Articles based on Wholesale Price Index (WPI) (Base 2011-12=100) (in %)

Commodity Name/Year	Sep 2019	Oct 2019	Nov 2019	Dec,2019	Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020
All Commodities	0.3	0.0	0.6	2.8	3.5	2.3	0.4	-1.6	-3.2	-1.8
Food Articles	7.5	9.8	11.2	13.3	11.3	7.7	4.6	3.8	1.1	2.0
Foodgrains	10.1	9.6	9.4	8.7	8.7	6.2	4.2	5.4	3.7	4.0
Cereals	8.7	8.3	8.0	7.8	7.9	5.2	2.7	3.6	2.0	2.7
Paddy	4.0	4.5	4.2	4.0	4.2	3.7	1.7	3.6	1.2	4.5
Wheat	5.7	6.2	8.1	8.4	9.0	6.4	4.8	6.4	6.0	5.2
Jowar	31.8	26.9	19.8	21.7	23.8	13.0	5.2	5.4	8.7	6.5
Bajra	38.2	24.4	16.5	17.9	17.8	8.6	3.0	0.5	-5.1	-9.8
Maize	47.8	42.0	30.7	26.1	20.9	5.1	-3.2	-9.3	-11.3	-14.7
Barley	19.6	16.1	13.9	14.2	13.3	11.2	11.2	11.8	3.7	-5.7
Ragi	9.4	6.0	4.5	0.3	-4.3	-5.8	-2.9	1.3	2.7	3.6
Pulses	17.9	16.6	16.7	13.2	12.8	11.4	11.9	14.6	11.9	10.1
Gram	9.8	8.0	5.3	-0.3	-1.2	-3.1	-2.1	1.8	-1.3	-1.8
Arhar	35.8	37.5	34.7	24.8	18.9	14.4	14.0	13.8	9.1	6.1
Moong	15.8	18.3	20.6	21.6	20.3	22.2	26.8	35.9	37.0	29.9
Masur	12.7	12.6	15.9	14.9	16.0	13.6	12.2	13.6	11.7	13.1
Urad	23.6	22.6	36.7	43.6	46.5	44.3	44.9	46.2	43.3	38.9
Oilseeds	11.6	10.0	6.3	8.5	9.0	4.6	2.9	1.9	3.8	3.2
Groundnut Seed	27.1	25.3	12.2	12.0	12.3	14.0	18.1	20.3	16.6	13.2
Rape & Mustard Seed	-1.1	-0.6	-0.1	3.0	5.8	5.0	6.3	6.6	6.8	7.3
Cotton Seed	8.0	7.7	5.4	6.6	5.8	0.1	6.9	4.4	4.3	7.4
Safflower (Kardi Seed)	34.9	35.7	30.2	26.2	29.0	18.5	4.9	-7.2	-11.7	-12.5
Sunflower	8.2	4.3	3.4	5.2	3.8	-3.0	-6.6	-9.1	-11.7	-4.8
Soybean	15.4	14.7	14.3	19.9	20.0	7.4	-0.2	-3.6	3.1	1.4

Annexure

Annexure

Annex Table 1.7: Inflation Rate (y-o-y) of selected Food Articles based on Consumer Price Index (CPI) (Base 2012=100) (in %)

Commodity Name/Year	Jan 2018	Feb 2018	Mar 2018	Apr 2018	May 2018	Jun 2018	Jul 2018	Aug 2018	Sep 2018	Oct 2018
All Commodities CPI	5.07	4.44	4.28	4.58	4.87	4.92	4.17	3.69	3.7	3.38
Consumer Food Price Inflation	4.7	3.26	2.81	2.8	3.1	2.91	1.3	0.29	0.51	-0.86
Food and Beverages	4.58	3.46	3.08	3	3.29	3.11	1.73	0.78	1.01	-0.14
Cereals and Products	2.41	2.1	2.18	2.56	2.78	2.7	2.92	2.98	2.9	2.59
Rice PDS	1.21	0.84	0.48	0.48	0.96	5.88	0.96	0.24	0.24	0
Rice Other Sources	5.03	4.79	4.63	4.37	4.36	3.9	3.88	3.79	2.78	0.92
Wheat/Atta PDS	-0.53	-0.92	1.34	1.34	1.21	2.3	6.68	0.68	2.57	1.74
Wheat/Atta Other Sources	-2.22	-2.64	-2.22	-0.66	0.37	0.74	1.55	2.43	3.61	4.79
Jowar and its products	5.42	3.98	4.14	3.38	0.89	-0.95	-1.02	-0.07	0.95	5.76
Bajra and its products	-2.44	-2.5	-0.48	0.07	-1.24	-0.62	-1.23	-0.54	1.08	1.51
Maize and its products	-1.15	-1.14	-1.7	-0.22	-0.22	-0.22	-0.29	-1.21	-1.42	-1.42
Ragi and its products	5.69	2.57	2.94	0.23	-0.73	-0.74	-0.84	-1.34	-4.25	-3.68
Pulses and Products	-20.19	-17.35	-13.41	-12.35	-11.57	-10.87	-8.91	-7.76	-8.65	-10.36
Gram Split	-25.55	-21.77	-15.84	-15.1	-15.08	-14.87	-13.8	-12.66	-14.12	-16.23
Gram Whole	-22.6	-19.16	-14.29	-13.68	-14.21	-15.07	-14.93	-14.06	-14.71	-16.2
Arhar	-24.67	-20.27	-13.86	-11.53	-9.93	-8.34	-5.75	-5.03	-6.79	-9.52
Moong	-11.26	-9.96	-7.25	-7.39	-6.4	-5.9	-4.17	-2.97	-3.47	-5.05
Masur/ Lentil	-16.87	-16.39	-14.95	-14.24	-14.18	-13.78	-11.74	-10.37	-10.35	-11.59
Urad	-23.02	-21.53	-19.33	-19.04	-18.33	-18.19	-15.23	-14.09	-14.49	-16.68
Oil and Fats	1.34	1.01	1.6	2.2	2.46	2.62	2.79	3.47	3.13	2.1
Groundnut Oil	-4.38	-4.06	-3.7	-3.88	-4.05	-3.62	-3.71	-2.1	-0.28	0.93
Mustard Oil	-3.08	-2.6	-1.69	-0.68	-0.26	0.34	1.04	2.35	2	1.39
Refined Oil [Sunflower; Soybean; Saffola etc.]	-0.63	-0.62	0.81	1.89	2.81	3.45	3.91	4.91	5.56	5.18

Cont..

Annex Table 1.7: Inflation Rate (y-o-y) of selected Food Articles based on Consumer Price Index (CPI) (Base 2012=100) (in %)

Commodity Name/Year	Nov 2018	Dec 2018	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019	Jul 2019	Aug 2019
All Commodities CPI	2.33	2.11	1.97	2.57	2.86	2.99	3.05	3.18	3.15	3.28
Consumer Food Price Inflation	-2.61	-2.65	-2.24	-0.73	0.3	1.1	1.83	2.25	2.36	2.99
Food and Beverages	-1.69	-1.64	-1.29	-0.07	0.66	1.38	2.03	2.37	2.33	2.96
Cereals and Products	1.25	1.25	0.81	1.25	1.17	1.17	1.24	1.31	1.31	1.3
Rice PDS	0	0.24	1.91	1.91	1.91	1.91	1.66	-6.91	-2.38	-2.38
Rice Other Sources	-1.48	-1.62	-2.11	-1.9	-1.96	-2.3	-2.37	-2.16	-2.21	-2.28
Wheat/Atta PDS	1.74	0.8	1.33	0.93	-0.4	0	0.13	-0.26	-3.7	1.48
Wheat/Atta Other Sources	4.85	5.43	5.48	6.08	6.29	6.91	7.06	7.12	6.7	6.26
Jowar and its products	3.79	4	4.43	3.97	2.6	3.49	5.66	7.24	8.87	11.71
Bajra and its products	4.99	3.44	3.61	4.72	5.88	7.08	9.93	11.83	12.77	12.86
Maize and its products	2.45	1.23	0	0.36	-0.07	1.22	3.32	3.1	4.39	5.38
Ragi and its products	-5.29	-2.26	-0.22	2.22	0.73	1.18	2.44	3.88	4.32	4.46
Pulses and Products	-9.22	-7.2	-5.5	-3.82	-2.25	-0.81	2.13	5.68	6.82	6.94
Gram Split	-15.16	-13.27	-11.53	-10.16	-8.91	-6.85	-4.23	-1.36	-0.76	-1.8
Gram Whole	-15.92	-13.8	-12.82	-10.91	-8.94	-6.9	-3.46	-0.15	1.01	0.23
Arhar	-9.05	-6.4	-4.37	-2.02	-0.09	2.22	6.72	12.34	14.36	15.44
Moong	-3.59	-1.87	-0.94	0.09	0.43	1.12	2.65	5.93	6.75	7.05
Masur/ Lentil	-11.66	-11.46	-9.84	-8.22	-7.31	-6.22	-3.81	-0.72	0.56	0.56
Urad	-13.36	-9.58	-7.02	-5.23	-3.45	-2.75	-0.56	2.64	3.67	3.74
Oil and Fats	1.59	1.24	0.91	1.33	1.08	0.74	0.83	0.74	0.91	0.57
Groundnut Oil	2.61	4.01	4.3	5.36	4.97	4.6	5.35	6.67	8.37	8.85
Mustard Oil	0.78	0.77	0.34	0.43	0.26	0.26	0.6	0.17	-0.09	-0.77
Refined Oil [Sunflower; Soybean; Saffola etc.]	5	4.5	3.77	4.04	3.2	2.47	2.38	1.75	1.66	1.04

Cont..

Annexure

Annexure

Annex Table 1.7: Inflation Rate (y-o-y) of selected Food Articles based on Consumer Price Index (CPI) (Base 2012=100) (in %)

Commodity Name/Year	Sep 2019	Oct 2019	Nov 2019	Dec 2019	Jan 2020	Feb 2020	Mar 2020	Apr 2020	May 2020	Jun 2020
All Commodities CPI	3.99	4.62	5.54	7.35	7.59	6.58	5.84	7.22	6.27	6.09
Consumer Food Price Inflation	5.11	7.89	10.01	14.19	13.63	10.81	8.76	10.49	9.28	7.87
Food and Beverages	4.7	6.93	8.73	12.16	11.72	9.45	7.82	8.61	7.38	7.29
Cereals and Products	1.66	2.16	3.71	4.36	5.25	5.23	5.3	7.75	7.45	6.49
Rice PDS	-8.19	-8.33	-8.33	-8.33	-9.84	-9.84				
Rice Other Sources	-1.32	0.35	2.86	3.51	4.18	3.87				
Wheat/Atta PDS	-5.42	-3.29	-3.29	-3.29	-3.8	-3.42				
Wheat/Atta Other Sources	5.84	5.41	5.81	6.2	7.07	7.32				
Jowar and its products	13.27	8.44	12.4	14.7	16.81	21.11				
Bajra and its products	12.16	14.31	12.44	15.2	19.76	19.81				
Maize and its products	7.78	9.08	7.95	11.52	14.84	15.07				
Ragi and its products	6.6	5.84	7.69	6.36	6.18	5.13				
Pulses and Products	8.4	11.72	13.94	15.44	16.71	16.61	15.8	22.8	21.1	16.7
Gram Split	-1.14	1.63	1.86	2.7	2.95	2.89				
Gram Whole	0.38	2.35	2.99	2.81	4.09	3.77				
Arhar	17.56	21.88	24.04	23.82	22.83	20.2				
Moong	8.48	11.08	13.68	16.09	19.35	21.85				
Masur/ Lentil	1.76	5.44	7.39	9.75	12.26	13.07				
Urad	6.13	12.65	20.77	27.3	31.19	32.36				
Oil and Fats	1.15	1.98	2.64	3.03	6.65	7.7	7.54	10.83	11.97	12.27
Groundnut Oil	8.89	8.36	7.46	6.82	8.78	9.29				
Mustard Oil	-0.6	-0.09	0.86	1.02	5.57	6.85				
Refined Oil [Sunflower; Soybean; Saffola etc.]	0.95	1.21	1.82	2.84	7.53	8.46				

Annex Table 2.1: Annual Average Wholesale Price Index of major Agricultural Commodities

Commodity Name	2015	2016	2017	2018	2019
Food Articles	133.7	139.7	142.8	142.3	152.9
Food Grains (Cereals+Pulses)	134.2	149.8	145.0	143.5	157.2
Cereals	129.9	139.9	143.6	147.8	160.3
Paddy	134.1	141.0	148.0	154.1	159.3
Wheat	126.4	138.7	140.5	145.6	156.6
Jowar	114.3	120.1	127.5	122.9	156.0
Bajra	128.6	153.3	144.8	138.3	189.5
Maize	121.7	137.0	129.2	123.3	172.6
Barley	127.7	150.1	145.3	144.6	168.1
Ragi	160.2	178.2	242.4	212.6	223.3
Pulses	153.6	193.7	151.2	124.3	143.5
Gram	132.7	204.3	182.5	133.2	145.8
Arhar	176.1	199.7	121.1	114.4	144.7
Moong	163.4	148.1	115.0	116.1	135.5
Masur	183.1	184.1	143.9	121.4	135.3
Urad	162.8	212.1	139.6	111.8	135.5
Oilseeds	135.3	136.8	128.0	138.3	149.4
Groundnut Seed	124.5	136.0	127.6	115.6	137.8
Rape & Mustard Seed	142.6	149.0	135.4	140.8	143.1
Cotton Seed	126.9	157.7	148.0	139.1	148.2
Safflower (Kardi Seed)	103.4	111.9	129.9	140.6	178.5
Sunflower	112.0	114.0	101.6	107.2	121.7
Soyabean	149.0	150.0	124.4	148.1	160.6

Source: Office of the Economic Advisor, Ministry of Commerce & Industry



Annex Table 2.2: List of Decentralized Procurement (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
Jharkhand (6 Districts)	Rice
Maharashtra	Rice
Gujarat	Rice/ Wheat

Source: Food Corporation of India

Annex Table 2.3: Number of farmers Benefitted during Last Three Rabi Marketing Seasons

Crop	State	Number of Farmers Benefitted		
		RMS 2018-19	RMS 2019-20	RMS 2020-21
Gram	Andhra Pradesh	55126	1677	71769
	Karnataka	103491	38	123254
	Telangana	36949	21833	30903
	Maharashtra	139792	17861	226759
	Rajasthan	22133	60458	237231
	Madhya Pradesh	624073	243188	262795
	Uttar Pradesh	10919	380	21758
	Haryana		199	6197
	Gujarat	52350	10796	126305
	Total	1044833	356430	1066971
Urad	Andhra Pradesh	54073	10302	
	Telangana	2151	601	
	Tamil Nadu	1309	3389	
	Odisha	5214	1056	
	Total	62747	15348	
Masoor	Madhya Pradesh	164940	45580	1898
	Uttar Pradesh	10401	120	1
	Total	175341	45700	1899
Moong	Andhra Pradesh	957	6805	
	Gujarat		1097	
	Odisha	4914	7386	4241
	Tamil Nadu		4092	79
	Total	957	19380	4320
Total		1283878	436858	1073190

Source: National Agricultural Cooperative Marketing Federation of India



Annex Table 2.4: Number of Mustard Farmers Benefitted during Last Three Rabi Marketing Seasons

State	RMS 2018-19	RMS 2019-20	RMS 2020-21
Haryana	114745	121211	120700
Rajasthan	170825	286895	138982
Madhya Pradesh	53489	65258	42603
Uttar Pradesh	794	808	197
Gujarat	25742	21950	15908
West Bengal	2170		
Total	367765	496122	318390

Source: National Agricultural Cooperative Marketing Federation of India

Annex Table 2.5: Various Components of Procurement Incidentals and Distribution Cost

(₹/qtl)

Particulars	2018-19	2019-20 (RE)	2020-21 (BE)
Procurement Incidentals			
<i>Statutory /Obligatory Costs</i>			
Arthiya commision	34.0	40.2	40.5
Mandi charges & taxes	77.4	76.8	78.1
Gunny cost	86.2	114.3	125.4
Sub-Total [A]	197.5	231.3	244.0
<i>Labour & Transport Charges</i>			
Mandi labour	14.6	21.4	21.7
Forwarding charges	0.6	1.5	1.6
Internal movement	20.4	32.5	36.3
Sub-Total [B]	35.7	55.4	59.5
<i>Storage & Interest Charges To State</i>			
Storage charges	2.0	3.1	3.0
Interest	12.6	39.1	38.0
Previous year arrears expenditure	6.3	0.0	0.0
Sub-Total [C]	20.9	42.2	41.0
<i>Others</i>			
Admin. charges to agencies	26.8	24.7	26.0
Other (Guarantee Fee etc.)	0.0	0.0	0.0
Sub-Total [D]	26.8	24.7	26.0
Total Proc. Incidentals [A+B+C+D]	280.9	353.5	370.6
Distribution Cost			
Freight	117.6	145.8	140.5
Handling charges	55.8	70.6	65.3
Storage charges	38.3	48.4	46.2
Interest	166.1	251.5	167.5
Shortages	-2.2	2.5	2.8
Admin. overheads	27.4	46.2	40.8
Total Distribution Cost	402.9	564.9	463.1

Source: Food Corporation of India



Annex Table 3.1: State-wise Sanctioned Strength, Working Strength and Vacancies in Extension Staff

State	Total Sanctioned Strength	Total Working Strength	Vacancy (%)
Andhra Pradesh	14472	11175	22.8
Bihar	16496	12406	24.8
Haryana	1444	578	60.0
Himachal Pradesh	2985	1896	36.5
Jharkhand	1154	482	58.2
Karnataka	4390	2279	48.1
Meghalaya	606	486	19.8
Rajasthan	7883	4530	42.5
Tamil Nadu	5291	4916	7.1
Uttar Pradesh	10559	4877	53.8

Source: State Governments

Annex Table-3.2 : Simulation-Impact of Oil Content on MSP of R&M

S. N.	Oil Content (%)	Oil Cake (%) {100-col(2)}	Realisation from oil cake on processing of 1 quintal of oilseeds, assuming price of cake/q= ₹1900	Cost of Oil Content i.e. oilseeds without cake (₹/qtl.), assuming MSP/qtl.= 4650	Cost of Oil Content i.e. oilseeds without cake for each 0.25 percent point of oil content (₹/qtl.) {col(5)/col(2)}*0.25	MSP at Oil Content given in col.(2) [MSP+(Average of col.(6)* percent points of oil content that is over & above 35%)]/(0.25)
			{col(3)*Price of Oil cake}/100	MSP-Col(4)		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	35.00	65.00	1235	3415	24.39	4650
2	35.25	64.75	1230	3420	24.25	4674
3	35.50	64.50	1226	3425	24.12	4699
4	35.75	64.25	1221	3429	23.98	4723
5	36.00	64.00	1216	3434	23.85	4747
6	36.25	63.75	1211	3439	23.72	4771
7	36.50	63.50	1207	3444	23.59	4794
8	36.75	63.25	1202	3448	23.46	4818
9	37.00	63.00	1197	3453	23.33	4841
10	37.25	62.75	1192	3458	23.21	4865
11	37.50	62.50	1188	3463	23.08	4888
12	37.75	62.25	1183	3467	22.96	4911
13	38.00	62.00	1178	3472	22.84	4934
14	38.25	61.75	1173	3477	22.72	4957
15	38.50	61.50	1169	3482	22.61	4979
16	38.75	61.25	1164	3486	22.49	5002
17	39.00	61.00	1159	3491	22.38	5025
18	39.25	60.75	1154	3496	22.27	5047
19	39.50	60.50	1150	3501	22.16	5069
20	39.75	60.25	1145	3505	22.05	5091
21	40.00	60.00	1140	3510	21.94	5113
22	40.25	59.75	1135	3515	21.83	5135
23	40.50	59.50	1131	3520	21.73	5157
24	40.75	59.25	1126	3524	21.62	5179
25	41.00	59.00	1121	3529	21.52	5201
26	41.25	58.75	1116	3534	21.42	5222
27	41.50	58.50	1112	3539	21.32	5243
28	41.75	58.25	1107	3543	21.22	5265
29	42.00	58.00	1102	3548	21.12	5286
30	42.25	57.75	1097	3553	21.02	5307

Cont..



Annex Table-3.2 : Simulation-Impact of Oil Content on MSP of R&M

S. N.	Oil Content (%)	Oil Cake (%) {100-col(2)}	Realisation from oil cake on processing of 1 quintal of oilseeds, assuming price of cake/q= ₹1900	Cost of Oil Content i.e. oilseeds without cake (₹/qtl.), assuming MSP/qtl.= 4650	Cost of Oil Content i.e. oilseeds without cake for each 0.25 percent point of oil content (₹/qtl.) {col(5)/col(2)}*0.25	MSP at Oil Content given in col.(2) [MSP+(Average of col.(6)* percent points of oil content that is over & above 35%)]/(0.25)
			{col(3)*Price of Oil cake}/100	MSP-Col(4)		
31	42.50	57.50	1093	3558	20.93	5328
32	42.75	57.25	1088	3562	20.83	5349
33	43.00	57.00	1083	3567	20.74	5370
34	43.25	56.75	1078	3572	20.65	5391
35	43.50	56.50	1074	3577	20.55	5411
36	43.75	56.25	1069	3581	20.46	5432
37	44.00	56.00	1064	3586	20.38	5452
38	44.25	55.75	1059	3591	20.29	5473
39	44.50	55.50	1055	3596	20.20	5493
40	44.75	55.25	1050	3600	20.11	5513
41	45.00	55.00	1045	3605	20.03	5533
42	45.25	54.75	1040	3610	19.94	5553
43	45.50	54.50	1036	3615	19.86	5573
44	45.75	54.25	1031	3619	19.78	5593
45	46.00	54.00	1026	3624	19.70	5613
46	46.25	53.75	1021	3629	19.61	5633
47	46.50	53.50	1017	3634	19.53	5652
48	46.75	53.25	1012	3638	19.46	5672
49	47.00	53.00	1007	3643	19.38	5691
50	47.25	52.75	1002	3648	19.30	5711
51	47.50	52.50	998	3653	19.22	5730
52	47.75	52.25	993	3657	19.15	5749
53	48.00	52.00	988	3662	19.07	5768
Average increase in MSP with 0.25 percent increase in oil content					21.46	

Annex Table 4.1 : Value of Top 10 Indian Export Markets for Agricultural Products in 2019-20

Product	Export Markets (₹ crore)
Marine Products	USA (17956), China (9532), Japan (2956)
Basmati Rice	Iran (8846), Saudi Arabia (6788), Iraq (3078)
Rice (Non- Basmati)	Nepal (1724), Benin (1376), UAE (931),
Spices	China (5412), USA (3620), Hong Kong (1684)
Meat	Vietnam (7563), Malaysia (2682), Egypt (2365)
Sugar	Iran (2180), Sudan (2093), Somalia (1694)
Oilmeals	USA (1233), Korea RP (1053), Iran (537)
Cotton (Raw)	Bangladesh (4459), China (1337), Vietnam (508)
Plywood and Products	USA (3019), Germany (578), Netherlands (506)
Castor Oil	China (2411), Netherlands (1041), USA (702)

Source : Central Board of Indirect Taxes and Customs



Annex Table 4.2(a): Trade Policy for Pulses, April 2019 to June 2020

Date	Trade Policy	Product	Description
April 01, 2019	Quantitative Restrictions	Peas (Yellow, Green, Dun and Kaspas), Moong* and Urad*	Annual quota of 1.5 lakh tonnes till 31.03.2020.
April 01, 2019	Quantitative Restrictions	Pigeon Peas (Toor)*	Annual quota of 2 lakh tonnes till 31.03.2020.
April 23, 2019	Memorandum of Understanding (MoU) between India and Mozambique	Pigeon peas (Toor) and other pulses grown in Mozambique	1.75 Lakh tonnes of pulses to be imported from Mozambique during fiscal year 2019-20
May 07, 2019	Foreign Trade Policy (FTP) 2015-2020 (Export Quota)	Dal	161.65 tonnes of Dal allowed for export to the Republic of Maldives under bilateral trade agreement between Government of India and Government of Maldives during 2019-20
June 15, 2019	Tariff	Lentils (Masur)	Tariff rate of custom duty on lentils increased to 50 percent
June 25, 2019	Restrictions abolished	Seeds of Peas	Restriction on seeds of peas abolished
July 03, 2019	Quantitative Restrictions (Additional quota)	Pigeon Peas (Toor)	Annual quota of 4 lakh tonnes till 31.03.2020.
September 11, 2019	Last date of Imports	Pulses (Toor, Moong, Urad and Peas)	To contain the prices of pulses for relief of consumers, imports should be effected till 31.10.2019 for fiscal year 2019-20
November 05, 2019	Extension of import date	Pigeon Peas (Toor)	Extension for import of Toor (not for Urad and Moong) only till 15.11.2019.
December 18, 2019	Minimum Import Price (MIP)	Peas (Yellow, Green, Dun and Kaspas)	Restricted peas will be imported under MIP of Rs. 200 CIF per kg
December 18, 2019	FTP 2015-2020 (Import Policy)	Urad	Import of Urad shall be subject to an annual(fiscal year) quota of 4 lakh tonnes. Import of Urad under the Quota Restriction will be allowed only to the Millers/Refiners as per procedure notified by DGFT provided*
March 03, 2020	Extension of import date	Urad	Extension of last date for imports of additional 2.5 lakh tonnes of Urad till 30.04.2020
March 17, 2020	Quantitative Restriction	Urad	Annual quota of 4 lakh tonnes effective from 01.05.2020 to 31.03.2021

Cont..

Price Policy for Rabi Crops

Annex Table 4.2(a): Trade Policy for Pulses, April 2019 to June 2020

Date	Trade Policy	Product	Description
March 28, 2020	Quantitative Restriction	Peas (Yellow peas, Green Peas and others), Moong and Pigeon Peas (Toor)	Annual quota (for fiscal year 2020-21) of 1.5 tonnes for peas (quantity of each to be notified) and Moong and 4 lakh tonnes for Toor
April 16, 2020	Extension of import date	Urad	Due to Covid crisis, further extension of last date for imports of additional 2.5 lakh tonnes of Urad till 15.05.2020
April 21, 2020	Quantitative Restriction	Yellow peas, Green Peas and others	Annual quota of 1.5 lakh tonnes till 31.03.2021 and will be allowed only to the Millers/Refiners where it is 0 tonnes (yellow peas), 75000 tonnes (Green peas) and 75000 for others.
April 21, 2020	Quantitative Restriction	Pigeon Peas (Toor)	Annual quota of 4 lakh tonnes till 31.03.2021 and will be allowed only to the Millers/Refiners.
May 13, 2020	Extension of import date	Urad	Due to Covid crisis, further extension of last date for imports of additional 2.5 lakh tonnes of Urad till 31.05.2020
June 01, 2020	Memorandum of Understanding (MoU)	Pigeon peas (Toor) and other pulses grown in Mozambique	2 Lakh tonnes of pulses to be imported from Mozambique during fiscal year 2020-21
June 02, 2020	Import Duty	Lentils	Import duty on lentils from 30 percent to 10 percent and lentils originating in or exported from USA from 50 percent to 30 percent till 31.08.2020.

**Restrictions shall not apply to Government's import commitments under any Bilateral or Regional Agreement or Memorandum of Understanding*

Source : Directorate General of Foreign Trade

Annexure



Price Policy for Rabi Crops

Annex Table 4.2(b): Trade Policy for Edible Oils/Oilseeds, April 2019 to June 2020

Date	Trade Policy	Product	Description
September 02, 2019	Safeguard Duty	RBD Palmolein & Palm oil	Safeguard duty of 5 percent (180 days) imposed on imports of Palmolein & Palm oil from Malaysia under IMCECA*. But imports under ASEAN** agreement will be free of this duty.
December 31, 2019	Import Duty	RBD Palmolein	Under ASEAN** and IMCECA* duty reduced from 50 to 45 percent
December 31, 2019	Import Duty	Crude Palm oil	Under ASEAN** and IMCECA* duty reduced from 40 to 37.5 percent
January 08, 2020	'Free' to 'Restricted'	Refined Palm oil	Refined palm oil placed from free to Restricted under following conditions.(i) The application for import authorization should be accompanied with pre-purchase agreement and details of the import of the concerned commodity for past three years.(ii) Validity period of import licences/ authorization changed from 18 months to 6 months.(iii) Total non-utilisation of the import authorization by the applicant will lead to disqualification of the importer from getting any further license for these items in future.iv) Customs will be required to diligently enforce the Rules of Origin criteria for import of these items originating from Nepal and Bangladesh.
May 12, 2020	Safeguard duty	RBD Palmolein & Palm oil	No further extension of bilateral safeguard duty

*Note: * India-Malaysia Comprehensive Economic Cooperation Agreement.*

*** Association of Southeast Asian Nations*

Source : Directorate General of Foreign Trade

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

Crop/State	Cost A ₂	Cost 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)
Wheat							
Bihar	25046	31264	58958	33912	135	27694	89
Chhattisgarh	23862	29545	42809	18946	79	13264	45
Gujarat	27767	33872	64567	36799	133	30695	91
Haryana	29916	37114	99655	69740	233	62542	169
Himachal Pradesh	19137	30240	44954	25817	135	14714	49
Jharkhand	22667	30740	36462	13795	61	5722	19
Maharashtra	35619	43685	54929	19310	54	11244	26
Madhya Pradesh	24851	31707	72122	47270	190	40414	127
Punjab	30570	33714	96121	65551	214	62408	185
Rajasthan	28373	47282	88317	59945	211	41035	87
Uttarakhand	26046	35497	62659	36614	141	27162	77
Uttar Pradesh	31761	39273	75950	44189	139	36677	93
ALL-INDIA	29010	36924	77673	48663	168	40749	110
Barley							
Himachal Pradesh	28980	43260	26197	-2783	-10	-17063	-39
Rajasthan	25050	43688	69682	44632	178	25994	60
Uttar Pradesh	24578	31562	64602	40024	163	33040	105
ALL-INDIA	24936	39406	66687	41751	167	27280	69
Gram							
Andhra Pradesh	30881	33121	45937	15056	49	12817	39
Bihar	18432	23649	73391	54959	298	49742	210
Chhattisgarh	21615	26864	48301	26686	123	21437	80
Gujarat	23904	30585	42573	18670	78	11989	39
Haryana	13958	21511	62367	48409	347	40855	190
Jharkhand	12213	18220	51335	39122	320	33115	182
Karnataka	21083	23485	40778	19695	93	17293	74
Maharashtra	30330	35189	53944	23615	78	18756	53
Madhya Pradesh	24218	29101	62179	37961	157	33078	114
Rajasthan	18033	28870	54938	36905	205	26069	90
Telangana	26574	30477	60197	33623	127	29720	98
Uttar Pradesh	21957	29215	61007	39050	178	31793	109
ALL-INDIA	23848	29375	55295	31446	132	25920	88

Cont..

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

Crop/State	Cost A ₂	Cost 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)
Lentil							
Bihar	14357	18267	46079	31723	221	27812	152
Madhya Pradesh	16614	20187	45341	28727	173	25153	125
Uttar Pradesh	17572	24628	43749	26177	149	19121	78
West Bengal	19187	26959	53747	34560	180	26788	99
ALL-INDIA	16831	22051	45639	28808	171	23588	107
Rapeseed/Mustard							
Assam	16498	27198	29972	13474	82	2774	10
Bihar	16493	21573	41623	25129	152	20050	93
Gujarat	27135	34170	58360	31224	115	24190	71
Haryana	20808	27264	78012	57204	275	50747	186
Madhya Pradesh	18284	25915	62111	43827	240	36196	140
Punjab	22224	29016	58816	36593	165	29800	103
Rajasthan	19589	32126	67126	47537	243	35001	109
Uttar Pradesh	22368	30495	56071	33704	151	25576	84
West Bengal	22906	35952	45802	22896	100	9851	27
ALL-INDIA	20236	30622	61456	41220	204	30834	101
Safflower							
Karnataka	21369	25676	33955	12586	59	8279	32
Maharashtra	24065	29199	25283	1218	5	-3916	-13
ALL-INDIA	23317	28613	32019	8702	37	3406	12

Note: Average Gross Returns of safflower are for 2017-18 and 2018-19 for Karnataka, and for 2017-18 for Maharashtra, due to unavailability of data

Source: CACP using CS data

Annex Table 5.2: Monthly Average Daily Wage Rates for Agricultural Labour (Man)

Year/Month	AP	Asm	Bih	Guj	Har	HP	Kar	Ker	MP	MH	Odi	Pun	Raj	TN	UP	WB	All-India
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

Cont..

Annexure

Annex Table 5.2: Monthly Average Daily Wage Rates for Agricultural Labour (Man)

Year/Month	AP	Asm	Bih	Guj	Har	HP	Kar	Ker	MP	MH	Odi	Pun	Raj	TN	UP	WB	All-India
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

Cont..

Annex Table 5.2: Monthly Average Daily Wage Rates for Agricultural Labour (Man)

Year/Month	AP	Asm	Bih	Guj	Har	HP	Kar	Ker	MP	MH	Odi	Pun	Raj	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

Cont..

Annexure

Annex Table 5.2: Monthly Average Daily Wage Rates for Agricultural Labour (Man)

Year/Month	AP	Asm	Bih	Guj	Har	HP	Kar	Ker	MP	MH	Odi	Pun	Raj	TN	UP	WB	All-India
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

Cont..

Annex Table 5.2: Monthly Average Daily Wage Rates for Agricultural Labour (Man)

Year/Month	AP	Asm	Bih	Guj	Har	HP	Kar	Ker	MP	MH	Odi	Pun	Raj	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

Note: Daily Wage rate - Average of five operations i.e. Ploughing, Sowing, Weeding, Transplanting and Harvesting
Source: Labour Bureau, Ministry of Labour & Employment

Annexure

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

Cont...

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
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
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

Cont...

Annexure

Annexure

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
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

Cont...

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

Cont...

Annexure

Annexure

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
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	80.8	123.0	113.9	NR	133.0	NR	152.8	121.5

NR : Not Released

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

Price Policy for
Rabi Crops

Price Policy for
Rabi Crops

Annex Table 5.4: Projected Cost of Production (A_2 , A_2+FL & C_2) for Rabi Crop Season 2020-21 and Production Shares during TE2019-20

States	Cost of Production (₹/qtl)			Shares in Production(%)
	A ₂	A ₂ +FL	C ₂	
Wheat				
Bihar	855	1,063	1,483	6.2
Chhattisgarh	993	1,226	1,815	0.1
Gujarat	988	1,204	1,653	2.9
Haryana	685	850	1,500	11.6
Himachal Pradesh	970	1,525	2,104	0.6
Jharkhand	991	1,345	1,899	0.4
Madhya Pradesh	728	928	1,320	16.6
Maharashtra	1,565	1,916	2,497	1.6
Punjab	649	714	1,287	17.7
Rajasthan	600	997	1,406	9.8
Uttar Pradesh	838	1,033	1,560	31.5
Uttarakhand	750	1,012	1,516	0.9
All India Wtd. Avg.	763	960	1,467	
Barley				
Himachal Pradesh	1,090	1,645	2,521	3
Rajasthan	547	954	1,313	63
Uttar Pradesh	745	951	1,485	34
All India Wtd. Avg.	629	971	1,404	
Gram				
Andhra Pradesh	2,825	3,004	4,528	4.2
Bihar	1,592	2,034	3,135	0.6
Chhattisgarh	2,273	2,801	3,673	3.0
Gujarat	1,888	2,416	3,394	3.6
Haryana	1,335	2,059	3,711	0.5
Jharkhand	1,420	2,077	3,274	2.5
Karnataka	3,082	3,428	4,756	6.8
Madhya Pradesh	2,253	2,713	3,759	35.0
Maharashtra	2,902	3,379	4,510	17.1
Rajasthan	1,620	2,590	3,654	18.7
Telangana	2,196	2,518	3,989	1.6
Uttar Pradesh	2,454	3,274	4,886	6.4
All India Wtd. Avg.	2,296	2,866	4,012	

Cont...

Annexure



Annex Table 5.4: Projected Cost of Production (A_2 , A_2+FL & C_2) for Rabi Crop Season 2020-21 and Production Shares during TE2019-20

States	Cost of Production (₹/qtl)			Shares in Production(%)
	A ₂	A ₂ +FL	C ₂	
Lentil				
Bihar	1,697	2,149	3,459	11.6
Madhya Pradesh	2,058	2,490	3,571	40.1
Uttar Pradesh	2,480	3,489	5,182	36.5
West Bengal	2,050	2,899	4,060	11.8
All India Wtd. Avg.	2,169	2,864	4,204	
Rapeseed & Mustard				
Assam	2,756	4,586	5,478	2.2
Bihar	1,608	2,097	3,187	1.2
Gujarat	1,882	2,344	3,205	4.2
Haryana	1,468	1,913	3,420	13.6
Madhya Pradesh	1,162	1,640	2,625	10.9
Punjab	1,533	2,003	3,620	0.6
Rajasthan	1,515	2,473	3,426	46.7
Uttar Pradesh	1,857	2,530	3,681	11.7
West Bengal	2,074	3,257	4,200	8.8
All India Wtd. Avg.	1,603	2,415	3,470	
Safflower				
Karnataka	2,303	2,767	4,423	55.9
Maharashtra	3,744	4,544	5,523	44.1
All India Wtd. Avg.	2,939	3,551	4,908	

Note: Production shares to derive all-India CoP of a crop are related to projected States

Source: CACP Calculations.

Price Policy for
Rabi Crops

Annex Table 5.5(a): Wheat: Break-up of Cost of Cultivation (₹/ha)

Cost Items	Bihar			Chattisgarh		Gujarat			Haryana		
	2016-17	2017-18	2018-19	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
Operational Cost	28428	30087	33113	23742	33214	31599	30902	35870	35610	34169	37326
Human Labour											
Casual	4731	5034	5809	1900	3601	3303	4019	5287	4422	2670	1913
Attached	38	2	5	39	0	17	105	69	237	204	248
Family	5885	6258	6511	5731	5634	5873	5904	6537	7880	7152	6563
Total	10654	11294	12325	7670	9234	9193	10028	11894	12539	10026	8725
Bullock Labour											
Hired	0	0	0	27	0	61	169	149	0	0	0
Owned	39	11	12	2389	3850	177	226	153	35	0	22
Total	39	11	12	2416	3850	238	395	303	35	0	22
Machine Labour											
Hired	5758	6238	6290	4100	7563	7025	5518	5914	8378	8423	10713
Owned	45	90	198	854	369	783	599	1670	1282	1756	3141
Total	5804	6329	6488	4955	7932	7808	6118	7584	9660	10179	13853
Seed	3162	3314	3822	2543	3157	4386	3935	4365	2461	2592	2991
Fertilisers and Manure											
Fertilisers	3965	4237	4510	2167	3527	4272	3997	4292	4190	4394	5114
Manure	85	8	30	0	0	62	207	157	0	1	0
Total	4050	4245	4540	2167	3527	4334	4204	4449	4190	4395	5114
Other Inputs											
Insecticides	36	61	47	200	103	422	389	367	991	1533	1144
Irrigation Charges	4001	4110	5064	2982	4362	4439	5072	5887	4852	4610	4476
Interest on Working Capital	683	722	806	546	836	780	758	889	840	819	932
Miscellaneous	0	2	8	0	32	0	3	133	41	16	62
Crop Insurance	-	0	0	262	182	-	0	0	-	0	7
Fixed Cost	15535	19569	15404	17048	11795	12669	13724	15720	34433	38294	38085
Rental Value of Owned Land	12529	14778	13072	6384	9323	9909	8846	11425	27764	27086	29280
Rent Paid for Leased-in Land	0	0	0	0	0	531	1051	847	105	0	29
Land Revenue, Cesses & Taxes	68	116	109	1	1	7	8	8	0	0	0
Depreciation on Implements & Farm Buildings	506	861	504	1438	692	136	337	319	626	2011	1466
Interest on Fixed Capital	2432	3814	1720	9224	1778	2086	3482	3121	5937	9197	7310
Total Cost	43963	49656	48518	40789	45009	44268	44627	51590	70042	72463	75410
Yield (qtl/ha)	32	31	30	17	26	33	29	34	49	47	51
A₂+FL/qtl	749	797	905	1305	1126	886	983	962	619	670	663
C₂/qtl	1135	1275	1302	2115	1482	1207	1358	1333	1192	1341	1289

Cont....

Annexure



Price Policy for Rabi Crops

Annex Table 5.5(a): Wheat: Break-up of Cost of Cultivation (₹/ha)

Cost Items	Himachal Pradesh			Jharkhand			Madhya Pradesh			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
Operational Cost	24702	30038	33001	21262	32988	36159	28919	30749	32944	43111	38830	47384
Human Labour												
Casual	642	369	1090	3690	4645	7771	3054	3365	3495	4670	3925	4772
Attached	66	0	0	0	0	0	186	121	136	1259	408	359
Family	11047	10804	11459	3243	11011	9965	7114	6683	6772	8051	7410	8738
Total	11755	11172	12548	6933	15656	17735	10354	10170	10403	13980	11743	13869
Bullock Labour												
Hired	350	195	327	0	0	58	40	11	52	935	322	622
Owned	872	3064	2280	138	2860	3648	479	516	746	1885	1928	1627
Total	1222	3259	2606	138	2860	3706	519	526	798	2821	2250	2249
Machine Labour												
Hired	4904	6404	7919	4738	2967	5693	6762	7417	7938	7355	8211	10512
Owned	226	609	588	0	304	57	511	404	719	1253	661	1373
Total	5131	7013	8506	4738	3272	5750	7273	7821	8657	8608	8872	11886
Seed	1915	2028	2295	2867	3285	2768	2870	2931	3176	3844	3780	4337
Fertilisers and Manure												
Fertilisers	1197	1600	1870	3493	2464	2989	3085	2976	3741	4864	4249	6078
Manure	2874	3582	3740	2	489	514	0	0	0	16	0	0
Total	4071	5182	5610	3496	2953	3503	3085	2976	3741	4880	4249	6078
Other Inputs												
Insecticides	91	196	230	0	0	0	36	92	137	224	385	756
Irrigation Charges	104	588	523	2544	4296	1903	3917	5265	4908	7691	6547	6944
Interest on Working Capital	414	583	653	546	666	794	661	729	793	1062	952	1171
Miscellaneous	0	15	27	0	1	0	205	9	94	0	52	93
Crop Insurance	-	2	2	-	0	0	-	230	236	-	0	0
Fixed Cost	12916	17424	18616	7681	21492	11226	17531	18829	18340	14618	17147	16221
Rental Value of Owned Land	7723	9755	14179	6884	15314	8492	13085	12979	14167	8585	7418	11467
Rent Paid for Leased-in Land	28	210	225	0	0	0	0	0	0	0	0	0
Land Revenue, Cesses & Taxes	9	10	11	19	53	54	4	4	4	19	20	17
Depreciation on Implements & Farm Buildings	761	1124	600	386	842	457	561	1012	926	491	687	496
Interest on Fixed Capital	4394	6326	3602	393	5283	2222	3881	4835	3244	5524	9022	4241
Total Cost	37618	47462	51617	28943	54480	47385	46450	49578	51284	57729	55977	63604
Yield (qtl/ha)	15	19	24	19	25	13	38	38	38	27	23	28
A₂+FL/qtl	1247	1172	1032	988	1114	2230	647	711	791	1578	1635	1691
C₂/qtl	1838	1773	1571	1319	1791	2959	1018	1110	1196	2089	2314	2242

Cont....

Price Policy for
Rabi Crops

Annex Table 5.5(a): Wheat: Break-up of Cost of Cultivation (₹/ha)

Cost Items	Punjab			Rajasthan			Uttar Pradesh			Uttarakhand		
	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
Operational Cost	25659	26513	30197	41069	45912	51617	34600	37340	40456	28663	35867	38879
Human Labour												
Casual	2105	1865	1996	3802	4421	3767	3952	5105	6526	1929	3934	3045
Attached	692	597	635	343	98	154	16	25	19	28	52	50
Family	3491	2930	3009	16125	18891	21711	7856	7216	7465	8724	8933	10698
Total	6288	5392	5641	20270	23411	25632	11823	12346	14009	10681	12920	13793
Bullock Labour												
Hired	0	6	8	43	15	6	0	0	4	195	9060	9671
Owned	49	22	30	362	572	365	146	28	42	6361	186	36
Total	49	28	38	405	588	370	146	28	46	6556	9246	9707
Machine Labour												
Hired	6708	7322	8103	5442	5751	6881	6759	7932	8361	3339	3492	4126
Owned	2712	2631	3763	656	1358	1656	560	671	580	570	1563	1814
Total	9420	9953	11866	6098	7109	8537	7319	8603	8940	3909	5054	5940
Seed	2162	2551	2670	3863	3787	4141	3668	3295	3426	2609	2916	3113
Fertilisers and Manure												
Fertilisers	4829	5260	6176	3538	3077	3829	4396	4211	4963	1991	3460	4290
Manure	8	46	29	599	520	632	12	11	19	818	0	0
Total	4837	5306	6205	4136	3597	4461	4408	4222	4982	2808	3460	4290
Other Inputs												
Insecticides	1573	1841	2070	182	173	213	44	113	96	171	224	249
Irrigation Charges	585	661	652	5359	6418	7284	6383	7820	7945	1324	1230	928
Interest on Working Capital	672	715	824	756	819	906	810	913	1000	604	816	854
Miscellaneous	74	66	232	0	10	73	0	0	9	0	0	5
Crop Insurance	-	0	0	-	0	0	-	0	1	-	-	0
Fixed Cost	35315	39179	40907	20685	23461	22614	24395	25131	24745	19716	21792	22000
Rental Value of Owned Land	25394	28445	29408	13923	13969	15858	17737	17794	18931	17322	16733	18350
Rent Paid for Leased-in Land	5340	4921	5952	498	8	242	1037	591	820	0	0	0
Land Revenue, Cesses & Taxes	0	0	0	13	10	11	4	4	4	4	2	1
Depreciation on Implements & Farm Buildings	476	1043	1040	568	1053	845	881	1116	966	309	1572	1196
Interest on Fixed Capital	4104	4771	4507	5682	8421	5658	4734	5627	4025	2082	3484	2453
Total Cost	60973	65693	71103	61754	69373	74231	58995	62471	65201	48379	57659	60879
Yield (qtl/ha)	50	51	52	42	40	40	39	35	40	37	36	32
A₂+FL/qtl	569	578	652	803	924	1014	779	915	875	657	930	1100
C₂/qtl	1103	1169	1246	1172	1364	1418	1260	1464	1352	1092	1432	1647

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



Annex Tale 5.5 (b) - Barley: Break-up of Cost of Cultivation (₹/ha)

Cost Items	Himachal Pradesh		Rajasthan			Uttar Pradesh		
	2016-17	2017-18	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
Operational Cost	40229	43892	38753	43938	46296	24933	31701	35299
Human Labour								
Casual	0	5	1633	3341	4150	4143	5578	7135
Attached	0	0	0	498	1071	0	0	0
Family	12802	15759	18673	18783	18457	5285	7365	8303
Total	12802	15764	20306	22622	23678	9428	12943	15438
Bullock Labour								
Hired	408	828	45	19	19	0	0	0
Owned	17817	15944	460	225	162	710	128	0
Total	18225	16771	506	244	181	710	128	0
Machine Labour								
Hired	1315	4202	4249	4465	6227	5074	4307	6356
Owned	473	238	1393	1794	1944	1238	3451	1028
Total	1788	4440	5641	6260	8171	6312	7758	7384
Seed	1750	1795	3143	2650	3244	2975	2464	3368
Fertilisers and Manure								
Fertilisers	103	66	2331	2442	2871	1925	3116	4273
Manure	4727	4198	0	2663	1238	0	0	0
Total	4830	4264	2331	5105	4109	1925	3116	4273
Other Inputs								
Insecticides	0	0	331	150	232	10	99	0
Irrigation Charges	831	0	5887	6133	5786	2978	4456	3987
Interest on Working Capital	3	853	608	762	844	595	737	818
Miscellaneous	0	1	0	12	51	0	0	31
Crop Insurance	0	4	-	0	0		0	0
Fixed Cost	14503	12128	17099	18572	18020	19931	24144	22774
Rental Value of Owned Land	4185	8152	12081	10459	12307	16005	16846	20714
Rent Paid for Leased-in Land	0	0	0	0	0	918	177	0
Land Revenue, Cesses & Taxes	12	14	19	11	12	15	9	19
Depreciation on Implements & Farm Buildings	1628	745	528	867	638	370	948	298
Interest on Fixed Capital	8678	3216	4470	7234	5063	2624	6164	1743
Total Cost	54732	56020	55852	62510	64315	44864	55845	58073
Yield (qtl/ha)	8	13	39	34	35	31	31	38
A₂+FL/qtl	3117	2370	764	986	994	750	843	761
C₂/qtl	4076	2933	1090	1376	1342	1273	1433	1243

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

Price Policy for
Rabi Crops

Annex Table 5.5 (c) - Gram: Break-up of Cost of Cultivation (₹/ha)

Cost Items	Andhra Pradesh			Bihar			Chhattisgarh			Gujarat	
	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18
Operational Cost	29582	34609	26403	21795	22124	24831	21962	25360	30951	28714	31312
Human Labour											
Casual	5374	6635	3463	4779	5239	6197	2023	2526	2534	6083	7225
Attached	349	216	203	26	0	0	102	117	136	4	0
Family	2901	2131	1687	3968	5566	6119	3803	4876	7068	6340	7022
Total	8625	8982	5353	8773	10804	12316	5928	7519	9737	12427	14247
Bullock Labour											
Hired	254	130	10	0	0	0	0	7	0	288	310
Owned	3128	118	6	83	0	0	499	355	683	1680	1063
Total	3382	248	16	83	0	0	499	362	683	1967	1373
Machine Labour											
Hired	4087	8338	7180	3524	3964	3990	4188	5661	7270	2168	3312
Owned	563	869	2083	113	108	772	486	970	623	875	1438
Total	4650	9207	9262	3636	4072	4762	4674	6631	7893	3042	4749
Seed	7654	7459	4553	5265	3585	4525	5899	4867	4206	3438	3017
Fertilisers and Manure											
Fertilisers	2610	4354	3929	2384	2679	2118	1777	1709	2874	1892	2315
Manure	25	124	766	359	187	113	0	0	0	0	0
Total	2635	4478	4694	2743	2866	2231	1777	1709	2874	1892	2315
Other Inputs											
Insecticides	1673	3111	1691	448	180	332	971	904	1675	2162	2178
Irrigation Charges	132	63	27	306	115	87	1664	2500	2803	3108	2607
Interest on Working Capital	809	984	749	540	502	567	550	621	724	678	736
Miscellaneous	22	75	58	0	0	10	0	0	34	0	89
Crop Insurance	-	0	0	-	0	0	-	246	321	0	0
Fixed Cost	19750	19431	9520	18679	19879	18907	11671	11104	11348	12920	11722
Rental Value of Owned Land	12353	15913	6836	16568	14346	16291	9525	6808	8924	6955	6971
Rent Paid for Leased-in Land	5290	800	1714	0	0	0	0	0	0	626	30
Land Revenue, Cesses & Taxes	0	0	0	52	92	92	1	1	1	4	3
Depreciation on Implements & Farm Buildings	239	557	168	379	974	607	478	999	839	270	209
Interest on Fixed Capital	1868	2162	802	1679	4467	1917	1667	3296	1584	5065	4508
Total Cost	49332	54040	35923	40474	42003	43738	33633	36464	42299	41635	43034
Yield (qtl/ha)	12	11	5	16	19	14	11	11	13	16	8
A₂+FL/qtl	2950	3331	5087	1323	1171	1776	1983	2295	2260	1734	3440
C₂/qtl	4142	4993	6441	2407	2121	3040	2972	3176	3007	2439	4728

Cont...

Annexure



Price Policy for Rabi Crops

Annex Table 5.5 (c) - Gram: Break-up of Cost of Cultivation (₹/ha)

Cost Items	Haryana			Jharkhand			Karnataka			Madhya Pradesh		
	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
Operational Cost	20758	22095	20747	13089	10770	28503	21585	24645	23342	30152	26544	28322
Human Labour												
Casual	2315	5800	5608	3418	2000	3951	4863	3607	3532	3544	3959	4420
Attached	274	0	0	0	0	0	0	108	20	92	436	300
Family	9705	7118	5837	3665	5614	8742	1630	2660	2915	4733	4551	5365
Total	12293	12918	11445	7083	7614	12694	6492	6375	6468	8369	8947	10085
Bullock Labour												
Hired	0	0	0	696	0	0	508	530	640	36	168	36
Owned	11	0	0	0	0	2124	477	4849	2523	568	198	237
Total	11	0	0	696	0	2124	986	5379	3162	603	366	273
Machine Labour												
Hired	3850	4715	5586	665	0	5350	3005	4041	5504	4963	4861	5198
Owned	735	1622	1330	160	0	0	1096	1023	575	516	471	545
Total	4585	6337	6916	826	0	5350	4102	5064	6079	5479	5332	5743
Seed	3155	2263	1875	4199	3000	4638	6659	3556	3379	9659	5639	5268
Fertilisers and Manure												
Fertilisers	0	0	0	0	0	1963	1585	2311	1570	1661	1615	2235
Manure	0	0	0	0	0	143	0	9	0	0	0	0
Total	0	0	0	0	0	2106	1585	2319	1570	1661	1615	2235
Other Inputs												
Insecticides	115	0	0	0	0	602	1139	1158	1516	1300	1292	1260
Irrigation Charges	264	122	59	0	0	390	17	31	423	2169	2459	2509
Interest on Working Capital	335	454	452	286	156	599	605	666	619	770	666	696
Miscellaneous	0	0	0	0	0	0	0	96	125	141	87	61
Crop Insurance	-	0	0		0	0	-	0	0	-	141	190
Fixed Cost	21489	23099	20841	7191	16804	15804	9317	13799	11345	17690	15524	13975
Rental Value of Owned Land	18294	17476	18987	3683	12863	10868	8881	10574	9963	14793	10355	10997
Rent Paid for Leased-in Land	0	0	0	0	0	0	0	0	0	0	0	0
Land Revenue, Cesses & Taxes	0	0	0	12	53	38	6	7	6	4	4	5
Depreciation on Implements & Farm Buildings	176	493	266	393	876	926	80	508	276	609	942	721
Interest on Fixed Capital	3019	5129	1589	3103	3013	3972	351	2709	1100	2285	4223	2252
Total Cost	42247	45193	41588	20281	27574	44307	30902	38444	34687	47843	42068	42296
Yield (qtl/ha)	9	13	19	11	9	10	6	10	7	14	14	13
A₂+FL/qtl	2157	1709	1071	1149	1194	2769	3371	2295	3333	2062	1904	2154
C₂/qtl	4349	3419	2120	1728	2814	4163	4805	3507	4934	3207	2914	3137

Cont...

Price Policy for
Rabi Crops

Annex Table 5.5 (c) - Gram: Break-up of Cost of Cultivation (₹/ha)

Cost Items	Maharashtra			Rajasthan			Telengana		Uttar Pradesh		
	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2016-17	2017-18	2018-19
Operational Cost	35960	37514	30389	27145	27855	30064	29266	31482	28294	28254	27949
Human Labour											
Casual	6449	7218	6357	1528	3741	4578	6292	6225	5816	4259	4272
Attached	566	1021	188	807	12	134	1460	0	0	5	6
Family	4607	4142	5828	10591	10396	11523	4555	3251	6433	6811	8528
Total	11622	12381	12374	12926	14150	16236	12307	9476	12249	11075	12805
Bullock Labour											
Hired	878	477	326	24	1	0	445	95	0	0	0
Owned	1159	2689	1855	576	42	460	726	939	273	543	7
Total	2037	3165	2182	600	43	460	1171	1033	273	543	7
Machine Labour											
Hired	6699	6545	5150	2332	3656	3422	5869	8679	3475	5542	4506
Owned	332	810	1184	89	1248	1932	218	101	909	1446	1120
Total	7031	7355	6335	2420	4905	5354	6087	8780	4384	6988	5626
Seed	7336	5782	3658	6602	3330	3513	3394	3936	7630	5473	5187
Fertilisers and Manure											
Fertilisers	2278	3589	1767	1207	1044	895	2380	3713	974	714	1570
Manure	791	102	0	0	0	0	0	0	0	0	0
Total	3069	3691	1767	1207	1044	895	2380	3713	974	714	1570
Other Inputs											
Insecticides	1042	1974	1344	1	343	159	2039	3543	608	571	347
Irrigation Charges	2872	2100	1913	2887	3506	2869	1061	31	1494	2227	1816
Interest on Working Capital	950	1011	744	502	529	562	749	855	662	650	589
Miscellaneous	0	54	41	0	5	17	78	113	19	13	4
Crop Insurance	-	0	31	-	0	0	0	0	-	0	0
Fixed Cost	14721	16561	12050	16520	13733	13699	21583	17696	26076	16423	22947
Rental Value of Owned Land	10160	9269	7549	12279	6468	8728	19480	16639	18901	10535	18255
Rent Paid for Leased-in Land	0	0	0	0	0	0	0	0	0	0	0
Land Revenue, Cesses & Taxes	19	17	22	9	5	6	0	0	13	9	5
Depreciation on Implements & Farm Buildings	510	666	470	417	648	459	132	73	1528	849	742
Interest on Fixed Capital	4032	6609	4009	3814	6613	4506	1971	984	5634	5031	3944
Total Cost	50681	54074	42438	43665	41588	43763	50849	49179	54370	44678	50896
Yield (qtl/ha)	12	13	11	13	12	12	14	12	15	8	14
A₂+FL/qtl	2960	2866	2814	2026	2123	2388	2032	2613	1949	3254	1931
C₂/qtl	4113	4056	3861	3215	3097	3414	3510	4072	3544	4996	3430

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



Annex Table 5.5 (d) - Lentil (Masur): Break-up of Cost of Cultivation (₹/ha)

Cost Items	Bihar			Madhya Pradesh			Uttar Pradesh			West Bengal		
	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
Operational Cost	17258	15346	20622	18063	19628	20857	26342	22414	23113	27566	27519	23397
Human Labour												
Casual	4746	4055	6620	2800	3991	3841	2088	3475	3744	6796	9544	7222
Attached	289	0	12	201	51	846	0	0	0	4	0	0
Family	4159	3267	4305	3192	3834	3695	8557	6073	6538	7667	6770	8877
Total	9194	7323	10938	6193	7876	8382	10645	9548	10282	14467	16315	16099
Bullock Labour												
Hired	0	0	0	11	0	0	0	0	0	1659	446	14
Owned	0	105	8	681	1281	256	2259	0	0	535	42	918
Total	0	105	8	692	1281	256	2259	0	0	2194	488	932
Machine Labour												
Hired	3050	3903	4101	4123	3751	3393	3983	3932	5964	4611	4988	2146
Owned	111	51	243	484	673	809	1057	1320	70	10	3	54
Total	3161	3955	4343	4607	4424	4202	5040	5253	6034	4621	4991	2200
Seed	2381	1525	1865	2959	2052	2435	5685	3641	3314	4001	3388	2431
Fertilisers and Manure												
Fertilisers	1965	1926	2362	1068	1022	1958	680	1198	1064	1577	1428	1243
Manure	6	48	77	0	0	0	0	0	0	0	145	0
Total	1971	1974	2439	1068	1022	1958	680	1198	1064	1577	1572	1243
Other Inputs												
Insecticides	109	67	148	641	311	440	205	63	0	46	120	41
Irrigation Charges	45	32	379	1444	2068	2500	1276	2213	1914	52	12	0
Interest on Working Capital	397	366	494	451	479	520	539	495	502	603	629	440
Miscellaneous	0	0	8	10	70	54	13	4	3	5	3	11
Crop Insurance		0	0	-	45	110	-	0	0	-	0	0
Fixed Cost	13882	14414	17018	13916	11115	12606	17674	15530	15566	15907	14044	13336
Rental Value of Owned Land	11310	11308	13402	10101	7794	9282	15781	10392	12675	13799	12819	12691
Rent Paid for Leased-in Land	0	0	0	0	0	0	0	0	454	1012	160	0
Land Revenue, Cesses & Taxes	56	103	109	6	3	3	9	11	9	58	4	0
Depreciation on Implements & Farm Buildings	212	525	570	576	787	638	268	840	422	547	387	227
Interest on Fixed Capital	2304	2478	2938	3233	2531	2683	1616	4287	2006	492	675	418
Total Cost	31140	29760	37640	31979	30743	33463	44016	37944	38679	43474	41563	36733
Yield (qtl/ha)	12	11	11	13	11	11	9	7	10	11	15	10
A₂+FL/qtl	1411	1407	1921	1378	1818	1729	2727	2969	2327	2725	1806	2306
C₂/qtl	2509	2622	3396	2364	2736	2698	4518	4841	3749	4059	2675	3584

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

Price Policy for
Rabi Crops

Annex Table 5.5 (e) - Rapeseed & Mustard: Break-up of Cost of Cultivation (₹/ha)

Cost Items	Assam			Bihar			Gujarat			Haryana		
	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
Operational Cost	28971	25816	24965	19453	22276	21430	29831	31252	39619	24599	24452	28949
Human Labour												
Casual	1402	3779	2998	5241	6323	5598	5644	5405	7803	3857	4037	4557
Attached	14	0	143	628	2	8	0	0	0	154	75	32
Family	14101	8835	9162	5232	4885	5123	6651	6376	8076	6713	6650	6007
Total	15516	12613	12303	11100	11210	10729	12295	11782	15879	10725	10762	10596
Bullock Labour												
Hired	5	55	37	0	0	0	661	262	251	0	0	0
Owned	8381	3355	2578	0	0	0	444	3	5	19	12	0
Total	8386	3410	2616	0	0	0	1105	265	256	19	12	0
Machine Labour												
Hired	1493	5069	5317	2407	3548	3730	3966	4925	5090	4734	4966	6154
Owned	275	732	679	138	73	127	829	502	1998	1538	1521	3662
Total	1767	5800	5995	2544	3622	3857	4795	5426	7088	6272	6487	9816
Seed	599	517	514	821	1439	825	987	1113	1496	953	1013	1250
Fertilisers and Manure												
Fertilisers	1253	2017	2238	2874	3102	3307	3096	3883	4095	3181	3089	3879
Manure	967	719	704	220	239	16	67	189	1351	0	0	0
Total	2220	2736	2941	3094	3341	3323	3164	4071	5446	3181	3089	3879
Other Inputs												
Insecticides	32	100	80	0	24	78	120	685	335	94	173	49
Irrigation Charges	0	101	0	1463	2114	2115	6663	7156	7930	2806	2377	2597
Interest on Working Capital	451	515	479	431	527	494	702	754	956	542	539	695
Miscellaneous	0	24	38	0	1	10	0	0	232	7	0	67
Crop Insurance	-	0	0	-	0	0	-	0	0	-	0	0
Fixed Cost	8827	10011	8148	14147	15731	12435	12734	17835	18858	27917	32852	34432
Rental Value of Owned Land	6207	6503	6753	11735	13271	10799	9204	9225	10264	21612	21658	24205
Rent Paid for Leased-in Land	0	0	22	0	0	0	62	446	406	0	0	0
Land Revenue, Cesses & Taxes	40	94	100	80	130	130	3	3	2	0	0	0
Depreciation on Implements & Farm Buildings	721	563	301	258	556	406	105	313	468	591	1495	1708
Interest on Fixed Capital	1859	2852	971	2074	1774	1100	3360	7848	7718	5714	9699	8518
Total Cost	37798	35827	33114	33600	38007	33865	42564	49087	58477	52516	57304	63380
Yield (qtl/ha)	8	10	10	13	13	12	16	19	18	19	21	20
A₂+FL/qtl	3596	2581	2595	1481	1733	1840	1768	1593	2235	1247	1136	1445
C₂/qtl	4574	3492	3383	2513	2869	2836	2508	2897	3226	2600	2509	2987

Cont...

Annexure



Price Policy for Rabi Crops

Annex Table 5.5 (e) - Rapeseed & Mustard: Break-up of Cost of Cultivation (₹/ha)

Cost Items	Madhya Pradesh			Punjab		Rajasthan			Uttar Pradesh			West Bengal		
	2016-17	2017-18	2018-19	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19	2016-17	2017-18	2018-19
Operational Cost	21839	24379	29354	25705	28353	26768	33727	33403	26758	26967	27635	36399	32605	36643
Human Labour														
Casual	2915	3174	2494	4849	2747	2403	3574	3376	2828	4658	5714	9528	6513	9744
Attached	40	0	0	2071	3096	98	170	177	3	13	42	1	8	0
Family	7255	7240	8398	6293	7292	12003	13012	12594	10496	7519	6367	12185	13012	13941
Total	10211	10414	10891	13213	13135	14503	16756	16147	13327	12191	12123	21714	19533	23685
Bullock Labour														
Hired	0	0	0	0	19	7	0	4	4	2	0	1042	484	413
Owned	58	0	0	4	47	91	10	3	174	51	34	447	104	344
Total	58	0	0	4	66	98	10	7	178	53	34	1490	588	757
Machine Labour														
Hired	5241	6719	9029	1397	2328	4315	5701	6043	5332	5451	6381	3622	3867	2445
Owned	409	96	223	3722	5261	527	1096	1182	666	1458	641	44	17	48
Total	5650	6815	9252	5119	7588	4842	6797	7225	5998	6909	7021	3665	3884	2494
Seed	1027	1212	3045	1312	1497	1448	1503	1807	812	870	1268	874	626	680
Fertilisers and Manure														
Fertilisers	2827	2644	3219	3381	3651	2565	2689	2805	2929	2824	3402	4460	4376	5097
Manure	0	0	0	0	0	0	475	150	34	114	0	517	212	183
Total	2827	2644	3219	3381	3651	2565	3163	2955	2963	2939	3402	4978	4588	5280
Other Inputs														
Insecticides	333	476	330	1294	1024	21	75	107	2	18	31	486	286	376
Irrigation charges	1285	2247	1861	793	428	2842	4791	4498	2983	3395	3098	2352	2471	2638
Interest on working capital	442	519	635	588	638	447	628	631	493	589	644	734	594	688
Miscellaneous	6	0	69	0	325	1	3	27	3	4	12	107	37	46
Crop insurance	-	51	51	0	0	-	0	0	-	0	0	-	0	0
Fixed Cost	18342	23938	17315	26493	28376	16835	18985	15691	22014	25360	21380	13695	13536	12725
Rental value of owned land	13754	12982	13023	17810	20434	10510	12202	10653	16380	15759	15124	11702	11174	10800
Rent paid for leased-in land	0	0	0	1438	51	3	0	330	1516	4001	2398	285	167	597
Land revenue, cesses & taxes	6	7	7	0	0	12	11	9	12	13	9	40	9	14
Depreciation on implements & Farm buildings	393	1090	669	1195	1291	431	1020	663	632	883	661	536	292	267
Interest on fixed capital	4189	9858	3616	6050	6600	5878	5752	4035	3474	4704	3188	1133	1894	1048
Total Cost	40181	48316	46669	52198	56728	43602	52712	49093	48772	52327	49014	50095	46141	49369
Yield (qtl/ha)	19	18	16	15	15	17	21	17	16	16	15	13	13	13
A₂+FL/qtl	1076	1294	1670	1844	1848	1504	1617	1901	1669	1847	1878	2829	2410	2858
C₂/qtl	1945	2455	2596	3396	3550	2412	2452	2717	2819	3035	3002	3800	3363	3760

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

Annex Table 5.5 (f) - Safflower: Break-up of Cost of Cultivation (₹/ha)

Cost Items	Karnataka		Maharashtra
	2017-18	2018-19	2017-18
Operational Cost	16718	32056	28866
Human Labour			
Casual	5099	5063	5548
Attached	0	0	1357
Family	1773	6841	5134
Total	6873	11903	12039
Bullock Labour			
Hired	271	625	333
Owmed	568	142	7806
Total	839	767	8139
Machine Labour			
Hired	1141	5463	4221
Owmed	3676	0	137
Total	4817	5463	4359
Seed	1335	1094	1303
Fertilisers and Manure			
Fertilisers	1561	4238	1607
Manure	0	0	0
Total	1561	4238	1607
Other Inputs			
Insecticides	795	619	595
Irrigation Charges	0	7085	0
Interest on Working Capital	453	764	719
Miscellaneous	46	125	106
Crop Insurance	0	0	0
Fixed Cost	24890	10011	7279
Rental Value of Owmed Land	7094	9013	4215
Rent Paid for Leased-in Land	0	0	0
Land Revenue, Cesses & Taxes	10	13	16
Depreciation on Implements & Farm Buildings	2494	61	317
Interest on Fixed Capital	15292	925	2732
Total Cost	41608	42068	36145
Yield (qtl/ha)	10	9	7
A₂+FL/qtl	1867	3678	4112
C₂/qtl	4042	4814	5090

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



Annex Table 5.6: All-India Projected Cost of Production of Rabi Crops for Crop Season 2020-21 and 2019-20

Crops	Cost of Production (₹/qtl)				Percentage Change in Projected Cost (2020-21 over 2019-20)	
	2018-19		2019-20			
	A ₂ +FL	C ₂	A ₂ +FL	C ₂	A ₂ +FL	C ₂
Wheat	923	1,425	960	1467	4.0	3.0
Barley	919	1,347	971	1404	5.7	4.2
Gram	2,801	4,023	2866	4012	2.3	-0.3
Lentil	2,727	4,286	2864	4204	5.0	-1.9
Rapeseed & Mustard	2,323	3,401	2415	3470	4.0	2.0
Safflower	3,470	4,593	3551	4908	2.3	6.9

Source: CACP Calculations

Annex Table 5.7: Comparison of State and CACP Projected Cost of Production (C_2) of Rabi Crops for RMS 2021-22

Crop/ State	State Estimates		CACP Projections on the basis of CS data	
	Yield (qtl/ha)	Cost of Production (₹/qtl)	Yield (qtl/ha)	Cost of Production (₹/qtl)
Wheat				
Bihar	32.00	1722	30.83	1483
Chhattisgarh	23.00	1028	21.35	1815
Gujarat	30.20	2094	32.24	1653
Haryana	48.71	1705	47.06	1500
Himachal Pradesh	Cost estimates are not provided		19.70	2104
Jharkhand	Cost estimates are not provided		19.06	1899
Madhya Pradesh	Cost estimates are not provided		36.27	1320
Maharashtra	Cost estimates are not provided		26.01	2497
Punjab	49.80	1864	50.95	1287
Rajasthan	35.91	1400	40.88	1406
Uttar Pradesh	34.50	1559	36.10	1560
Uttarakhand	Cost estimates are not provided		35.20	1516
Barley				
Haryana	36.48	1583	CS data are not available	
Himachal Pradesh	Cost estimates are not provided		17.69	2521
Punjab	-	1380	CS data are not available	
Rajasthan	28.84	1201	35.77	1313
Uttar Pradesh	27.80	1368	33.32	1485
Gram				
Andhra Pradesh	16.00	4896	10.51	4528
Bihar	16.00	3692	16.47	3135
Chhattishgarh	12.00	1993	11.64	3673
Gujarat	13.58	4256	12.40	3394
Haryana	12.27	4594	13.66	3711
Jharkhand	Cost estimates are not provided		10.20	3274
Karnataka	8.10	7425	8.10	4756
Madhya Pradesh	Cost estimates are not provided		13.53	3759
Maharashtra	Cost estimates are not provided		11.92	4510
Odisha	15.00	3471	CS data are not available	
Punjab	-	3908	Not Projected	
Rajasthan	11.87	3592	12.31	3654
Telangana	Cost estimates are not provided		13.25	3989
Uttar Pradesh	12.88	2687	12.44	4886

Contd...



Annex Table 5.7: Comparison of State and CACP Projected Cost of Production (C_2) of Rabi Crops for RMS 2021-22

Crop/ State	State Estimates		CACP Projections on the basis of CS data	
	Yield (qtl/ha)	Cost of Production (₹/qtl)	Yield (qtl/ha)	Cost of Production (₹/qtl)
Lentil				
Bihar	12.00	3694	10.72	3459
Madhya Pradesh	Cost estimates are not provided		10.38	3571
Uttar Pradesh	11.05	2943	8.95	5182
West Bengal	Cost estimates are not provided.		11.84	4060
Rapeseed/Mustard				
Andhra Pradesh	10.00	4198	CS data are not available	
Aasam	Cost estimates are not provided		9.41	5478
Bihar	13.00	3946	11.95	3187
Chhattisgarh	6.00	1331	Not Projected	
Gujarat	17.81	3330	17.62	3205
Haryana	19.75	3335	19.27	3420
Madhya Pradesh	Cost estimates are not provided		17.92	2625
Odisha	15.00	4055	Not Projected	
Punjab	-	3741	15.22	3620
Rajasthan	15.59	3218	16.83	3426
Uttar Pradesh	13.12	2998	15.79	3681
West Bengal	Cost estimates are not provided		12.72	4200
Safflower				
Karnataka	Cost estimates are not provided		9.11	4423
Maharashtra	Cost estimates are not provided		7.00	5523

*Note: Main Product Ratios under CS were used for calculating CoPs from CoCs for some States
Source: State Governments and CACP calculations*

**Annex Table 5.8: States not-included in Cost Projections of Rabi Crops for
RMS 2021-22**

Crop	States to be dropped from CS	Reasons for not-inclusion in Projection	Suggestion
Wheat	Karnataka	Area and production shares at national level are 0.6% and 0.2%, respectively, and area and production shares in Rabi cereals at State level are 12.8% and 10.0%, respectively; which are small.	-
	West Bengal	Area and production shares at national level are 0.5% and 0.4%, respectively, and area and production shares in Rabi cereals at State level are 8.7% and 6.8%, respectively; which are small.	-
Barley	Madhya Pradesh	Although area and production shares in Rabi cereals at State level are small, yet area and production shares at national level are 13.0% and 10.3%, respectively, But, CS data is only for one year only.	-
Gram	Punjab	Area and production shares at national level are 0.02% and 0.03%, respectively, and area and production shares in Rabi pulses at State level are 8.7% and 11.9%, respectively; which are small. Besides sample size under CS is very thin.	-
	West Bengal	Area and production shares at national level are 0.3% and 0.4%, respectively, and area and production shares in Rabi pulses at State level are 8.8% and 11.1%, respectively; which are small.	-
lentil	Punjab	Area and production shares at national level are 0.08% and 0.05%, respectively, and area and production shares in Rabi pulses at State level are 4.6% and 3.2%, respectively; which are small. Moreover, sample size under CS is very thin, and CS data are for one year only.	-
	Rajasthan	Although area and production shares in Rabi pulses at State level are small, yet area and production shares at national level are 1.7% and 2.0%, respectively, But, sample size under CS is very thin, and CS data are only for one year only.	Sample size under CS should be increased.
Rapeseed & Mustard	Chhattisgarh	Although area and production shares at national level are 0.7% and 0.2%, respectively, yet area and production shares in Rabi oilseeds at State level are reasonably adequate. But sample size under CS is very thin.	Sample size under CS should be increased.
	Odisha	Although Sample size is reasonably adequate; yet area and production shares at national level are 0.11% and 0.02%, respectively, and area and production shares in Rabi oilseeds at State level are small.	-



Annex Table 5.9: States to be included under Comprehensive Scheme for Selected Crops

Crop	State	Reasons for inclusion under CS	Suggestion
Wheat	Jammu & Kashmir	Area and production shares at national level are 1.0% and 0.5%, respectively, and area and production shares in Rabi cereals at State level are reasonably adequate. But, there is no implementation of Comprehensive Scheme within the State.	Comprehensive Scheme may be implemented within the State.
Barley	Bihar	Although area and production shares in Rabi cereals at State level are low, yet area and production shares at national level are 2.1% and 1.4%, respectively. But, there is no CS data for the State.	CS data should be collected for the State.
	Haryana	Although State area and production shares in Rabi cereals at State level are low, yet area and production shares at national level are 2.5% and 3.4%, respectively. But, there is no CS data for the State.	CS data should be collected for the State.
	Maharashtra	Although area and production shares in Rabi cereals at State level are low, yet area and production shares at national level are 4.9% and 1.4%, respectively. But, there is no CS data for the State.	CS data should be collected for the State.
	Punjab	Although area and production shares in Rabi cereals at State level are low, yet area and production shares at national level are 1.3% and 1.8%, respectively. But, there is no CS data for the State.	CS data should be collected for the State.
	Uttarakhand	Although area and production shares in Rabi cereals at State level are low, yet area and production shares at national level are 3.6% and 1.9%, respectively. But, there is no CS data for the State.	CS data should be collected for the State.
Gram	Kerala	Although area and production shares at national level are very small, yet area and production share in Rabi pulses at State level are adequate. But, there are no CS data for the State.	CS data should be collected for the State.
Lentil	Assam	Area and production shares at national level are 1.9% and 1.4%, respectively, and area and production shares in Rabi pulses at State level are reasonable. But, there is no CS data for the State.	CS data should be collected for the State.
	Jharkhand	Area and production shares at national level are 4.4% and 3.9%, respectively, and area and production shares in Rabi pulses at State level are reasonable. But, there is no CS data for the State.	CS data should be collected for the State.
	Uttarakhand	Although each of area and production shares at national level is 0.7%, and area and production shares in Rabi pulses at State level are reasonably adequate. But, there is no CS data for the State.	CS data should be collected for the State.

Contd...

Annex Table 5.9: States to be included under Comprehensive Scheme for Selected Crops

Crop	State	Reasons for inclusion under CS	Suggestion
Rapeseed & Mustard	Himachal Pradesh	Although area and production shares at national level are 0.14% and 0.05%, respectively, yet area and production shares in Rabi oilseeds at State level are reasonably adequate. But, there is no CS data for the State.	CS data should be collected for the State.
	Jammu & Kashmir	Although area and production shares at national level are 0.8% and 0.4%, respectively, yet area and production shares in Rabi oilseeds at State level are reasonably adequate. But, there is no implementation of CS data in the State.	Comprehensive Scheme may be implemented within the State.
	Jharkhand	Area and production shares at national level are 4.5% and 2.3%, respectively, and area and production shares in Rabi oilseeds at State level are reasonably adequate. But, there is no CS data for the State.	CS data should be collected for the State.
	Uttarakhand	Area and production shares at national level are 0.3% and 0.2%, respectively, and area and production shares in Rabi oilseeds at State level are reasonably adequate. But, there is no CS data for the State.	CS data should be collected for the State.
Safflower	Andhra Pradesh	Although area and production shares in Rabi oilseeds at State level are very low, yet area and production shares at national level are 1.7% and 1.6%, respectively. But, there is no CS data for the State.	CS data should be collected for the State.
	Jharkhand	Although area and production shares in Rabi oilseeds at State level are very low, yet area and production shares at national level are 1.8% and 1.6%, respectively. But, there is no CS data for the State.	CS data should be collected for the State.
	Madhya Pradesh	Although area and production shares in Rabi oilseeds at State level are very low, yet area and production shares at national level are 1.7% and 0.9%, respectively. But, there is no CS data for the State.	CS data should be collected for the State.
	Telangana	Although area and production shares in Rabi oilseeds at State level are very low, yet area and production shares at national level are 5.1% and 4.7%, respectively. But, there is no CS data for the State.	CS data should be collected for the State.
	West Bengal	Although area and production shares in Rabi oilseeds at State level are very low, yet area and production shares at national level are 0.6% and 1.0%, respectively. But, there is no CS data for the State.	CS data should be collected for the State.

Note : Based on Estimates of Area and Production of Crops

Commission for Agricultural Costs and Prices

List of Officers

Advisers

Shri K. M. M. Alimalmigothi

Shri D. K. Pandey

Joint Director

Shri Raj Kumar

Deputy Directors

Dr. S. K. Gupta

Shri Nikhil Kumar Agarwal

Dr. Harish Kumar Kallega

Shri Amit Sahu

Assistant Directors

Smt. Anu Malhotra

Shri Sube Singh

Shri Ayush Punia

Ms. Sutapa Ghosh

Ms. Leena Kumar

Smt. Shiwani

Economic Officers

Dr. Surendra Singh

Ms. Shilpa Taneja

Dr. Bhavik Lukka

Mohd. Abdul Aleem

Sr. Statistical Officers

Shri Mohd. Shoeb

Shri S. K. Srivastava

Shri A. K. Pandey

Ms. Meenakshi Choudhary

Economic Investigators

Shri Chandra Kumar

Jr. Statistical Officer

Shri Md. Shoeb Malik

Shri M.K. Gupta

Sr. Hindi Translator

Shri Manoj Kumar Shaw

Administrative Staff

Shri Sudhir Kumar Tevatia

Shri Pradeep Kumar

Shri M. V. Ananda Kumar

Shri Pankaj Kumar

Ms. Pooja Budhiraja



सत्यमेव जयते

Commission for Agricultural Costs and Prices

Department of Agriculture, Cooperation & Farmers Welfare

Ministry of Agriculture & Farmers Welfare

Government of India, New Delhi

July 2020