

# Agricultural Outlook and Situation Analysis Reports

## Kharif Outlook Report

*Project Sponsored by*

Department of Agriculture, Cooperation and Farmers Welfare  
Ministry of Agriculture and Farmers Welfare  
with Technical Support from Food and Agriculture Organisation



December 2015

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## About the Project

The need for monitoring and analysis of emerging food scenarios is important for India both because of significant dependence of output on the monsoon rains and the fact that globally India is one of the major consumers of food crops influencing markets. Management of agriculture from a public policy perspective requires organisation of this information and analysis as inputs to policy making.

Against this backdrop the National Food Security Mission (NFSM), Ministry of Agriculture, commissioned a 3-Year study to National Council of Applied Economic Research (NCAER) in 2011–12 to bridge this important gap in analytical inputs for understanding the emerging agricultural scenarios both in the short-term of one or two quarters and also in the medium to longer term.

Accordingly, the agricultural outlook and situation analysis undertaken in this study refers to the main crop based food items: cereals (specifically rice, wheat, jowar, bajra, maize and overall coarse grains), pulses (gram, tur), selected fruits and vegetables (banana, potato, onion), sugarcane and edible oils (groundnut, rapeseed/ mustard, soybean). In addition the analysis also covers milk, one livestock product.

From January, 2015 the Ministry has approved continuation of the project for the remaining period of the Twelfth Plan.

The main objective of the grant during January 2015 – March 2017 is to sustain the work program established in the previous grant period. The activities will be more focused on model-based analysis in the medium-term assessment. A forum for broad based consultations on the emerging outlook in the short-term would be developed. Efforts would also be made to involve the state-level agricultural departments in the discussion of emerging outlook for the sector. More high-value agricultural commodities, viz. horticulture and dairy products would be included in our analysis.

Main outputs of the project are:

1. Biannual Season-wise Agricultural Outlook Reports: These will cover the assessment of the output, prices and markets in the short-term including the global scenario.
2. Annual medium-term Agricultural Outlook Reports: These will cover an assessment of outlook in terms of production, utilisation, trade and prices for the major food commodities from national and global perspectives. The medium-term outlook assessment will utilise an adapted version of FAO-COSIMO model besides the econometric model presently being used for analysis.
3. Meetings/workshops: The representatives from industry, academia and government would be invited to share their assessment of commodity outlook on production, demand, prices and trade. These meetings will be organised by NCAER with the active support and participation by the Ministry of Agriculture. NCAER will provide a background review paper for the meetings and would also request for presentations by other experts on major commodity sectors.

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**December 2015**

**National Council of Applied Economic Research  
11 Indraprastha Estate, New Delhi 110 002**

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**Shekhar Shah**  
Director-General



## PREFACE

Plagued by two consecutive poor monsoons in 2014 and 2015 and combined with falling global prices for agricultural commodities in response to record global production, India's annual farm sector growth in the first three years of the 12<sup>th</sup> Five-Year Plan is expected to be less than 2 percent, much below the targeted 4 percent. Slow growth in the agriculture sector signifies the continued vulnerability of Indian agriculture to the vagaries of weather and the impact of the growing integration of Indian agricultural commodity markets with global markets.

Ironically, lower production did not mean higher prices for Indian farmers. Record global production and large carryover stocks of major exportable agricultural commodities from India, such as wheat, maize, sugar, and soybean meal, kept domestic farm prices low, worsening rural distress. The only positive aspect may be that nearly two-thirds of total agriculture production is now high value-added in nature. Horticulture and the dairy sectors have witnessed robust growth.

This NCAER Kharif Crop Report provides a comprehensive assessment of various factors—weather, input availability, market demand and supply conditions, both domestic and international, and government policies—affecting the predominantly monsoon supported kharif crop. Although output forecasts for agricultural commodities for kharif are now available from both official and other sources, the present report integrates a variety of data and information such as production conditions, international trade, commodity stocks and government policies to provide a comprehensive analysis of the prevailing conditions.

The work is supported by the National Food Security Mission of the Ministry of Agriculture & Farmers Welfare, Government of India, with technical support from the Food and Agriculture Organisation of the United Nations. We are grateful to both these organisations for their continued support and the much-appreciated opportunities for interaction with their experts through meetings and reports of their respective agencies. We acknowledge the motivation, support, and comments for improvement received from Mr Siraj Hussain, Secretary, Ministry of Agriculture & Farmers Welfare during the course of this study. The work on this Kharif Report was carried out by a team led by Dr Rajesh Chadha, with notable contributions from Dr Shashanka Bhide, Dr A. Govindan, Dr Laxmi Joshi, Mr Ved Prakash Ahuja, Dr Charu Jain and Dr Shesadri Banerjee.

I am delighted that these NCAER agriculture outlook reports are filling a gap and building and maintaining much-needed short- and medium-term perspectives of the agriculture and food sectors, thereby helping address India's food and nutrition needs. We are once again grateful to the Ministry of Agriculture & Farmers Welfare for giving NCAER the opportunity to bring together a diverse set of data and information and to present a forward-looking assessment of the emerging scenarios for the food and agriculture sectors in India and the world. I look forward to NCAER continuing this work closely with the Agriculture Ministry, other branches of government, and the FAO.



**SIRAJ HUSSAIN**  
SECRETARY



भारत सरकार  
कृषि एवं किसान कल्याण मंत्रालय  
कृषि, सहकारिता एवं किसान कल्याण विभाग  
**Government of India**  
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Department of Agriculture, Cooperation  
& Farmers Welfare

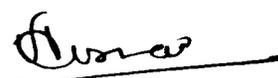
*FOREWORD*

After a record harvest of food grains and most other crops in 2013-14 aided by timely and well distributed monsoon rains in 2013, the country has confronted consecutive years of poor southwest monsoon rains last year and this year. Timely intervention by the Ministry through formulation and effective implementation of crop contingency plans helped to mitigate the losses due to poor monsoon. To reduce the vulnerability of the country's agriculture to vagaries of weather and to improve productivity and sustainability, Government has taken several new initiatives. These include schemes to expand assured irrigation coverage, restore soil health and improve agricultural infrastructure.

The impact of decline in grain production on domestic prices was moderated by larger supplies of wheat and rice through the Public Distribution System from government grain stocks, built up over years of good harvest. However, there was inflationary pressure on pulses, oilseeds, and some horticultural crops such as onion. India being largest consumer of pulses in the world, the fall in our domestic production led to larger import requirements. India is, however, also the largest producer of pulses and international availability of pulses too was lower this year and prices high. As a result, despite larger imports, domestic prices remained high. To encourage farmers to increase production of pulses, Government has increased the Minimum Support Price for pulses in the current year and has also announced a bonus on both Kharif and Rabi pulses, payable over and above the MSP. Ample availability of vegetable oils in the global market at reasonable prices led to larger imports by private trade and helped to contain domestic price inflation in vegetable oils.

A periodic assessment of food production, prices and international environment is valuable under such circumstances. It is with this in mind that the Department of Agriculture, Cooperation & Farmers Welfare have assigned this project of preparing seasonal agricultural outlooks to the NCAER. The present Kharif Outlook 2015-16 Report provides an assessment of the economy of the food and agriculture sector, both domestic and global. It brings together diverse set of information to provide an assessment of the emerging scenario for the food sector in the short term. This report emphasizes the need for crop diversification as a key to converge the changing demand patterns with supply and to act as an overall risk mitigation for the farmers.

I hope this outlook report of the NCAER will be useful for policymakers and other stakeholders.

  
(Siraj Hussain)

Date: December 15, 2015



# Executive Summary

## Domestic Situation

After a record harvest of food grains and most other crops in 2013-14 aided by timely and well distributed monsoon rains in 2013, the country confronted two poor southwest monsoon rains in 2014 and 2015, when actual rainfall was 12 per cent and 14 per cent below the Long Period Average (LPD), respectively. Beleguered by two consecutive poor monsoon rains combined with falling global prices for agricultural commodities in response to record production, India's farm sector growth measured by GVA plummeted to 0.2 per cent in 2014-15 and is likely to remain more or less unchanged in 2015-16. The slow or negative agricultural growth momentum last year and this year signifies that despite the sharp decline in rainfall, agriculture sector in India is yet to be completely weather-proof. The advancements in farming practices and technology have limited the impact of adverse impact of monsoon failure on agricultural production. Timely intervention by the government through formulation and effective implementation of crop contingency plans helped to mitigate the drought losses, but not fully. The brighter side of the picture emerging in the last two years is that horticulture and dairy sub-sectors have witnessed a significant growth in the recent years. Over the past year, the government has initiated several programs and schemes to address various lacunae confronting the Agriculture Sector to sustain agricultural growth.

The impact of significant declines in grain production on domestic prices was moderated by larger supplies of wheat and rice through the Public Distribution System from government grain stocks. However, pulses and some horticultural crops such as onions were exceptions. In the case of vegetable oils, ample availability of vegetable oils in the global market at reasonable prices led to larger imports by private trade and helped to contain domestic price inflation. However, lower international availability of pulses and its higher prices kept domestic prices higher despite record imports.

Commodity-wise, although 2015-16 rice production is forecast to decline only marginally from the 2014-15 production, government-held rice stocks have dipped 24 per cent y-o-y to 14.2 million tonnes on October 1, 2015 and are projected to decline to 8.2 million by the end of the 2015-16 marketing year on September 30, 2016, the lowest level since 2008-09. The overall stocks-to-use ratio is also forecast to decline to one of the lowest levels in recent years, making 2016-17 vulnerable to price volatility, in case the monsoon turns out to be poor like in 2014 and 2015. India's rice exports in MY 2015-16 (Oct-Sep) are forecast to decline to 9.0 million tonnes from 11.7 million tonnes in MY 2014-15 due to stiff competition from traditional Southeast Asian rivals like Thailand and Vietnam and new emerging exporters such as Myanmar and Cambodia and also stagnant domestic production.

India's farm sector growth measured by GVA plummeted to 0.2 per cent in 2014-15 and is likely to remain more or less unchanged in 2015-16.

India's rice exports in MY 2015-16 (Oct-Sep) are forecast to decline to 9.0 million tonnes from 11.7 million tonnes in MY 2014-15.

**Wheat exports in MY 2015-16 are likely to remain low due to likely lower production and lower stocks with the government.**

**Despite government attempts to control domestic pulse prices through imports and de-hoarding operations, prices are likely to remain firm in 2015-16 due to lower supplies.**

Based on progressive planting report and taking into consideration various negative factors impacting **wheat** production, particularly the irrigation water availability, the 2016 (MY 2016-17) wheat production is now expected to be somewhat lower than the 2015 poor weather-impacted production of 88.9 million tonnes. With larger offtake of wheat through PDS expected during October 2015 through March 2016, and a possible decline in wheat procurement in MY 2016-17 due to likely lower production and larger private trade purchases, government-held wheat stocks are likely to decline to around 15.3 million tonnes on April 1, 2016, about 2 million tonnes below the stocks on April 1, 2015. As in the case of rice, the stocks-to-use ratio is estimated to decline to the lowest level in recent years. Furthermore, due to relaxed quality norms for wheat procured by the government in MY 2015-16 in order to reduce the hardship of farmers, a large share of wheat in government inventory is of low quality, which the domestic millers do not prefer. To meet their requirement of quality wheat, millers, particularly in South India, have reportedly imported about 1 million tonnes of wheat, mostly from Australia. However, with the imposition of a 10 per cent import duty on wheat, which was later increased to 25 per cent, imports have ceased. Wheat exports in MY 2015-16 are likely to remain low due to likely lower production and lower stocks with the government.

With a steep fall in global prices in recent years, Indian maize prices are now ruling above world prices. A likely decline in maize production in 2015-16 could result in further strengthening of Indian prices and lower exports in MY 2015-16. There could be even clamouring from the domestic feed and starch industry for access to imported maize as in the case of wheat to meet the growing demand from the feed and starch industry.

With a lower **pulse** production forecast for 2015-16 on top of a significant decline in production in 2014-15, pulse prices are likely to remain firm. The demand-supply gap will be partly bridged by larger imports forecast at 5.5 million tonnes in 2015-16 compared to 4.64 million tonnes in 2014-15. However, production in major exporting countries such as Myanmar and Canada will not be adequate to meet Indian demand at an affordable price. Despite government attempts to control domestic pulse prices through imports and de-hoarding operations, prices are likely to remain firm in 2015-16 due to lower supplies. The government's recent decision to build a buffer stock of pulses through direct procurement from farmers and setting up a price stabilization fund should help to mitigate price spikes. However, the ultimate goal should be to increase productivity through better seeds, improved agronomic practices and setting up of better price support operation.

**Oilseed** production in 2015-16 likely to register a further decline over the previous year's low production due to poor monsoon rains. A sustained fall in domestic output of oilseeds and **vegetable oils** is set to increase India's dependence on imported edible oils to higher level. Although the government has increased the import duty on crude vegetable oil and refined vegetable oils by 5 per cent to 12.5 per cent and 20 per cent, respectively, effective September 17, 2015, lower international prices are likely to continue to support larger import in 2015-16, forecast at 14 to 15 million tonnes.

Indian **sugar** industry has been plagued by oversupply of costly sugar during the past couple of years, which resulted in snowballing of sugarcane arrears to farmers by the sugar industry jeopardizing the financial viability of several sugar mills. With an estimated opening stock of sugar at around 10.2 million tonnes on October 1, 2015,

and MY 2015-16 sugar production estimated at 27.0 million tonnes, there will be more than sufficient sugar to take care of domestic requirement of around 24.3 million tonnes and exports of 2 million tonnes. Hence no significant increase in domestic sugar prices is expected. Although the government has mandated sugar mills to export 4 million tonnes of sugar in MY 2015-16, without continuation of export subsidy, exports of such large magnitude appears infeasible unless global price surges.

Major horticultural crops such as potato, onion, and banana experienced significant price spikes in recent years due to lower production and poor post-harvest infrastructure such as cold chains and market integration. To check the price rise of onions and potato, the government imposed various export restrictions such as imposition of Minimum Export Prices in the case of onions and potato, announcing large imports of onions and invoking storage control rules under the Essential Commodities Act.

India's milk production in 2014-15 is tentatively placed at 142 million tonnes compared to 137.7 million tonnes in 2013-14. Significantly below normal monsoon rains for the second consecutive year have adversely affected fodder production and quality, which would have negative impact on animal productivity and hamper milk production during 2015-16. India's per capita dairy consumption has already surpassed the world average, but it is still well below the per capita consumption in the developed countries. Rising income, urbanisation, growing awareness for protein rich diet and easy availability of dairy products through organized retail stores, are fueling dairy products consumption in the country.

## Global Situation

Most international agencies currently forecast a modest increase in global production of wheat, vegetable oils, oilseed meal and milk and a marginal decline in production of rice, maize, total coarse grains, total oilseeds and sugar in 2015-16 from the previous year. Thus production of most commodities are likely to remain at a record or near record levels for the second consecutive year. Hence, food markets are likely to continue to remain well stocked on the supply side and less volatile in 2015-16. All commodity prices through September this year have remained well below the prices a year ago. Record productions, large carryover stocks in 2014-15 combined with an optimistic production outlook for most crops in 2015-16 are weighing on the international prices of most commodities. However, most agencies forecast a tightening in international prices of most agricultural commodities in coming years. The current global agricultural outlook scenario characterized by abundant supplies of cereals, soybeans, vegetable oils, sugar and a significant decline in pulses in some major exporting countries has thrown open mixed blessings for India, which is a major exporter of rice, wheat, maize, sugar and soybean meal and importer of vegetable oils and pulses.

Rising income, urbanisation, growing awareness for protein rich diet and easy availability of dairy products through organized retail stores, are fueling dairy products consumption in the country.

Food markets are likely to continue to remain well stocked on the supply side and less volatile in 2015-16.



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The study team wishes to acknowledge the guidance, support and encouragement of Mr Siraj Hussain, Secretary, Department of Agriculture and Co-operation in the conduct of the study. Ms Sangeeta Verma, Economic & Statistical Adviser, Directorate of Economics and Statistics and Mr Sanjay Lohiya, Joint Secretary (Crops) have provided valuable guidance to improve the content and coverage of the report. A number of officials from the Ministry and DES have provided data and opportunities for interaction and guidance in the course of the study. Dr S. K. Mukherjee, Adviser, DES and Nodal Officer for the study, has encouraged us in our work, providing feedback and data whenever requested.

Dr Shashanka Bhide, Director, Madras Institute of Development Studies, has also provided guidance and support in the conduct of the study. Mr Bhaskar Goswami of FAO, Delhi has provided technical support for the study.

Reports of the OECD/FAO, USDA, IFPRI and IGC and the Department of Agriculture and Co-operation have been major sources of data and information for the report. We have used information and data from a number of other sources also. Specific references used for our assessment of outlook in the report have been cited appropriately

## Study Team

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# Contents

Preface .....	v
Foreword .....	vii
Executive Summary .....	ix
Acknowledgements .....	xiii
List of Figures .....	xix
List of Tables .....	xxi
1. Part I. Overview of the Domestic Agriculture Outlook.....	1
I.1 Economic growth slows in Q1 of FY2015-16.....	1
I.2 Food inflation slows further .....	5
I.3 Supply –Demand Balance Summary.....	8
I.4 Recent Government Initiatives in Agriculture Sector .....	8
I.5 Policy Developments during May 2015 to October 2015 .....	10
2. Part II. Overview of the Global Food Outlook.....	15
II.1 The world economy continues to grow at a modest pace.....	15
II.2 Global Agricultural Commodity Outlook .....	16
II.2.1 Production of most crops to remain high in 2015-16 .....	16
II.2.2 Consumption growth modest.....	21
II.2.3 Global agricultural commodity trade outlook mixed.....	23
II.2.4 Most commodity stocks up .....	26
II.2.5 Prices in 2015 significantly below the 2014 level. ....	27
II.2.6 Most commodity prices to firm up modestly in 2015-16.....	31
II.2.7 Implications for India.....	33
3. Part III. Domestic Agricultural Outlook Scenario for 2015-16.....	37
III.1 Weather.....	37
III.2 Price Environment .....	40
III.3 Input Supply Situation.....	42
III.4 Demand Conditions.....	43
III.5 Supply Bottlenecks.....	43
III.6 Trade Environment .....	44

III.7	External Factors .....	44
III. 8	Quantification of Agricultural Outlook .....	44
4.	Part IV. Commodity Outlook Assessment.....	47
IV.1	Rice .....	47
IV.1.1	Modest decline in 2015-16 production forecast.....	47
IV.1.2	Rabi rice production outlook murky.....	47
IV.1.3	Consumption to decline marginally .....	48
IV.1.4	Exports likely to decline in 2015-16 .....	48
IV.1.5	Stocks.....	50
IV. 2	Wheat .....	51
IV.2.1	Wheat production outlook subdued.....	51
IV.2.2	Consumption declines.....	52
IV.2.3	Wheat price inflation firms .....	53
IV.2.4	Export outlook bleak.....	54
IV.2.5	Stocks down .....	54
IV.3	Coarse Grains .....	56
IV.3.1	Significant decline in 2015-16 production.....	56
IV.3.2	Consumption, Price and Trade.....	57
IV.4	Pulses .....	59
IV.4.1	Production forecast to decline .....	59
IV.4.2	Consumption, Trade and Price.....	59
IV.5	Oilseeds and Edible Oils.....	64
IV.5.1	Kharif Oilseeds.....	64
IV.5.2	Consumption and Price .....	65
IV.5.3	Market Arrivals and Prices.....	66
IV.5.4	Trade .....	69
IV.6	Sugarcane and Sugar .....	71
IV.6.1	Significant decline in sugarcane production likely.....	71
IV.6.2	Consumption and Price .....	72
IV.6.3	Stocks.....	74
IV.6.4	Trade .....	74
IV.6.5	Sugar balance sheet .....	75
IV.7	Potato.....	76
IV.7.1	2014-15 production likely to be higher .....	76

IV.7.2	Potato Supply and Demand .....	77
IV. 7.3	Prices.....	78
IV.7.4	Market Arrivals .....	80
IV.8	Onion.....	82
IV.8.1	Lower production in 2014-15.....	82
IV.8.2	Onion Supply and Demand .....	83
IV.8.3	Prices.....	84
IV.8.4	Market Arrivals .....	86
IV.9	Banana .....	87
IV.9.1	Production Trends.....	87
IV.9.2	Prices.....	89
IV.9.3	Market Arrivals .....	91
IV.9.4	Banana Supply and Deman.....	92
IV.9.5	Trade .....	92
IV.10	Grapes.....	93
IV.10.1	Higher production in 2014-15.....	93
IV.10.2	Prices.....	94
IV.10.3	Trade .....	95
IV.11	Milk .....	96
IV.11.1	Production Trends.....	96
IV.11.2	Consumption .....	99
IV.11.3	Trade .....	99

# List of Figures

I.1	Agricultural Production Trends.....	3
I.2	Headline Inflation and Food Inflation Falls in the Negative Territory.....	5
II.1	Stocks-to-Use Ratio of Major Ag Commodities .....	27
II.2	Global Price Trend of Major Commodities (US\$/Metric Tonne) .....	27
II.3	World Bank Commodities Price Forecasts, Nominal U.S. dollars per MT .....	31
II.4	FAO/OECD Commodities price forecasts, nominal U.S. dollars per MT .....	32
III.1	Spatial Distribution of Monsoon Rains, 2015 vs. 2014.....	38
IV.1.1	Per cent Year on Year Change in Rice Wholesale Price Index .....	48
IV.1.2	Rice Export Price – India vis-a-vis International.....	49
IV.1.3	Government Rice Stocks vis-à-vis Desired Buffer + Strategic Stocks.....	51
IV.2.1	Wheat Price Inflation: WPI (%YOY) .....	53
IV.2.2	Indian Wholesale Wheat Price vis-à-vis US SRW Wheat Price FOB.....	54
IV.2.3	Government Wheat Stocks vis-à-vis Desired Buffer + Strategic Stocks.....	55
IV.3.1	Coarse Grain Production Trend.....	57
IV.3.2	Maize price comparison – India vs. U.S.....	58
IV.4.1	Trend in Pulse Production by Type.....	59
IV.4.2	Pulse Imports by Type (Thousand Metric Tonne).....	62
IV.4.3	Wholesale Price Inflation Trend in Pulses (% change in 2014 over 2013).....	63
IV.5.1	Edible oil Production and Consumption (Oil Year Nov-Oct) .....	65
IV.5.2	Oilseed and Vegetable Oil Price Inflation (YoY % Change).....	66
IV.5.3	Whole Price Index of Vegetable Oils (YOY % Change).....	66
IV.5.4	Arrival and Prices of Soybean in Indore market in MP .....	67
IV.5.5	Arrival and Prices of Soybean in Kota market in Rajasthan.....	67
IV.5.6	Arrival and Prices of Soybean in Nagpur market in Maharashtra.....	67
IV.5.7	Arrival and Prices of Groundnut in Gondal market in Gujarat .....	68
IV.5.8	Arrival and Prices of Mustard in Nagar Market in Rajasthan.....	68

IV.5.9	Arrival and Prices of Mustard in Alwar Market in Rajasthan.....	69
IV.5.10	Total Imports of Edible Oils (Oil Year from Nov-Oct) .....	69
IV.5.11	Share of Various Oils in Total Imports during Oil Years (Nov-Oct).....	70
IV.6.1	Sugarcane Area, Production and Yield Trends .....	71
VI.6.2	Sugarcane and Sugar Production Trend .....	72
IV.6.3	All India Sugar Price and Year-on-Year Change in WPI of Sugar.....	73
IV.6.4	Fair Average Price for Sugarcane and Actual Price Paid to Famers .....	74
IV.7.1	Area, Production and Yield of Potato in India .....	77
IV.7.2	WPI Trends in Potato .....	78
IV.7.3	Percentage Change in WPI in Potato M-o-M and Y-o-Y .....	79
IV.7.4	Wholesale Prices of Potato in Major Cities .....	79
IV.7.5	Retail Prices of Potato in Metro Cities .....	80
IV.7.6	Per Day Average Market Arrival of Potatoes (Tonnes).....	81
IV.8.1	Area, Production and Yield of Onion.....	83
IV.8.2	WPI Trends in Onion.....	84
IV.8.3	Change in WPI in Onion M-o-M% and YoY%.....	84
IV.8.4	Wholesale Prices of Onion in Metro Cities.....	86
IV.8.5	Retail Prices of Onion in Metro Cities .....	86
IV.9.1	Area, Production and Yields of Banana .....	88
IV.9.2	Banana - Area, Yield and Production Growth Rate State (2001-2014).....	89
IV.9.3	WPI of Banana Relative to WPI of Fruits and Food Articles .....	89
IV.9.4	Wholesale Prices of Banana in Selected Cities .....	90
IV.9.5	Retail Prices of Banana in Selected Cities.....	90
IV.9.6	Per Day Average Arrivals of Bananas (Tonnes).....	91
IV.10.1	Area, Production and Yield of Grapes in India .....	93
IV.10.2	WPI Trends in Grapes .....	94
IV.10.3	Percentage Change in WPI in Grapes M-O-M and Y-O-Y .....	95
IV.10.4	Wholesale Prices of Grapes in Metro Cities in 2015 (Rs. per Quintal).....	95
IV.11.1	Production and Per Capita Availability of Milk since 2000-01.....	97
IV.11.2	Average Yield Per Animal in India during 2009-10 to 2013-14.....	97
IV.11.3	Consumption Pattern of Milk and Milk Products in India.....	99

# List of Tables

1.1	Estimate of Per Cent Change of GVA at Basic Prices .....	2
1.2	Quarterly Estimate of GVA (Per cent Change Y-O-Y).....	2
I.3	2015-16 Crop Forecasts on Agricultural Year Basis (million tonnes).....	4
I.4	Inflation Trend in Major Food Commodities: WPI % change Y-O-Y.....	6
I.5	Projected Wholesale Prices in Delhi Based on Harmonic Analysis: % Change Year -on -Year.....	7
I.6	Projected Wholesale Price Indices based on Time Series ARIMA Model: % Change Year on Year .....	7
I.7	Food Balance Sheet (million tonnes) .....	8
I.8	Agricultural Policy Developments during September 2014-December 2014 .....	10
II.1	Global Production Forecasts for Major Food Commodities (Million Tonnes) .....	19
II.2	Trend in Australian Pulse Production .....	20
II.3	World Bank Commodities Price Forecasts, Nominal U.S. dollars per MT .....	31
II.4	FAO/OECD Commodities Price Forecasts, Nominal U.S. dollars per MT .....	32
III.1	Southwest Monsoon Comparison 2015 vs. 2014 .....	38
III.2	Progressive Planting of Kharif Crops (Million Hectares) .....	39
III.3	Minimum Support Prices for Kharif crops.....	40
III.4	Y-O-Y Change in Farm Input prices based on Wholesale Price Index.....	41
III.5	Kharif Crop Input Index.....	42
IV.1.1	Government operations in Rice .....	49
IV.1.2	Supply and Demand Balance for Rice (1000 Tonnes).....	50
IV.2.1	Govt. Operations in wheat .....	52
IV.2.2	Supply and Demand Balance for Wheat (1000 metric tonnes).....	55
IV.3.1	Demand Supply Balance Sheet for Maize ('000 tonnes).....	58
IV.4.1	India – Imports of Pulses by Country of Origin (1000 tonnes) .....	60
IV.4.2	Demand and Supply Balance Sheet for Pulses (000 tonnes).....	63
IV.5.1	Sowing of Kharif Oilseeds (lakh hectare).....	64
IV.5.2	Supply and Demand Balance for Vegetable Oils (1000 Tonnes).....	70
IV.6.1	Sugar Supply Demand Balance Sheet .....	75
IV.7.1	Area, Production and Yield of Potato by State in 2014-15 (3rd AE).....	76
IV.7.2	Potato Supply and Demand (Thousand Tonnes).....	77

IV.7.3	Monthly Arrival of Potatoes in Wholesale Markets (Tonnes) .....	81
IV.8.1	Area, Production and Yield of Onion by States, 2014-15 (3rd Adv. Est.).....	82
IV.8.2	Onion Supply and Demand (Thousand Tonnes).....	83
IV.8.3	Monthly Wholesale Prices of Onions in 2015 (Rs/ Quintals) .....	85
IV.8.4	Monthly Arrival of Onions in Wholesale Markets (Tonnes).....	87
IV.8.5	Average Daily Arrival of Onions in Wholesale Markets (Tonnes) .....	87
IV.9.1	Area Production and Yield of Banana in the Major Producing States (3rd Advance Estimates).....	88
IV.9.2	Monthly Price Differential: Wholesale and Retail.....	91
IV.9.3	Banana Supply and Demand ('000 tonnes).....	92
IV.9.4	Banana Export Status (MT) .....	92
IV.10.1	State-wise Production of Grapes in 2014-15 (1000 MT).....	94
IV.11.1	Number of Animals in milk and Average yield per animal .....	98
IV.11.2	Average Milk Yield per Cow of Top Ten Countries in 2013 .....	98



## PART I

# Overview of the Domestic Agriculture Outlook

## I.1 Economic Growth Slows in Q1 of FY 2015-16

In February this year the government was aiming at a highly optimistic economic growth rate of 8 to 10 per cent in FY 2015-16. However, data for Q1 (April–June) showed a slower growth of 7 per cent compared with 7.5 per cent in the previous quarter, as measured by constant market prices. Agriculture grew by 1.9%, but monsoon rainfall that has been 12 per cent below normal crimped the summer crop planted area. However, another economic growth indicator—Gross Value Added (GVA) at basic prices<sup>1</sup>—shows that economic growth accelerated to 7.1 per cent in Q1 of FY 2015-16, against 6.1 per cent in the previous quarter (January–March, 2015), still somewhat lower when compared with the 7.4 per cent growth in the corresponding quarter a year-ago.

Many agencies including some international agencies have lowered the growth projections for India in the current fiscal year 2015-16. While Moody's lowered it to 7 per cent for 2015-16, from 7.5 per cent estimated earlier, Fitch lowered its forecast to 7.8 per cent from 8 per cent, and Standard Chartered Bank lowered it to 7.3 per cent from 7.7 percent.

The Asian Development Bank<sup>2</sup>, in a recent update release, has lowered India's GDP for 2015 to 7.4 per cent from 7.8 per cent and for 2016 to 7.8 per cent from the 8.2 per cent forecasted earlier. The weak monsoon this year, flagging external demand, and stalled parliamentary action on structural reforms, including a revamped domestic tax system and eased restrictions on land acquisition and labour, combined with growth in industrial economies falling short of earlier assumptions are factors cited for the downward revision in economic growth.

IMF in its October 2015 Outlook<sup>3</sup> update projects a GDP growth rate of 7.3 per cent in 2015-16, down from 7.5 per cent projected in July 2015.

The United Nation in its World Economic Outlook and Prospects Report Update May 2015<sup>4</sup> also projected India's GDP (based on market prices with FY 2011-12 as a base year) growth rate at 7.5 per cent in both 2015 and 2016, surpassing China's 2016-17 and 8 per cent in 2017-18. The World Bank in its India Development Update report on April 28<sup>5</sup>, stated that India's economic growth is expected to rise to 7.5 per cent in 2015-16, followed by further acceleration to 7.9 per cent in 2016-17 and 8 per cent in 2017-18.

The United Nation on its World Economic Outlook and Prospects Report Update May 2015<sup>6</sup> also projected India's economic growth to surpass that of China's, with the GDP expected to zoom by 7.6 per cent in 2015 and 7.7 per cent in 2016 and will help accelerate economic growth in South Asia.

<sup>1</sup>GVA is defined as the value of output produced in various sectors, excluding the value of intermediate consumption (or cost incurred in that production). GDP at market prices is estimated by adding net indirect taxes to GVA at basic prices. Net indirect taxes is computed by deducting subsidies from gross indirect taxes on products. According to official sources, in the current macroeconomic situation, GVA estimates are a more reliable indicator of underlying economic activity. See also: [http://www.business-standard.com/article/economy-policy/gdp-or-gva-economists-give-different-prescriptions-115090200026\\_1.html](http://www.business-standard.com/article/economy-policy/gdp-or-gva-economists-give-different-prescriptions-115090200026_1.html)

<sup>2</sup><http://www.adb.org/sites/default/files/publication/174108/ado-2015-update.pdf>

<sup>3</sup><https://www.imf.org/external/pubs/ft/weo/2015/02/pdf/text.pdf>

<sup>4</sup>[http://www.un.org/en/development/desa/policy/wesp/wesp\\_archive/2015wesp\\_myu\\_en.pdf](http://www.un.org/en/development/desa/policy/wesp/wesp_archive/2015wesp_myu_en.pdf)

<sup>5</sup>[http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/04/27/090224b082e11f0f/1\\_0/Rendered/PDF/India0develo0a0higher0growth0path.pdf](http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2015/04/27/090224b082e11f0f/1_0/Rendered/PDF/India0develo0a0higher0growth0path.pdf)

<sup>6</sup>[http://www.un.org/en/development/desa/policy/wesp/wesp\\_archive/2015wesp\\_myu\\_en.pdf](http://www.un.org/en/development/desa/policy/wesp/wesp_archive/2015wesp_myu_en.pdf)

Many agencies including some international agencies have lowered the growth projections for India in the current fiscal year 2015-16.

**Table 1.1. Estimate of Per cent Change of GVA at Basic Prices**

(At Current Prices and at 2011-2012 prices)

Particulars	Q1 Per cent change over previous year (April-June)				Per cent change Y-O-Y	
	2014-15	2015-16	2014-15	2015-16	2013-14	2014-15
	At Current Prices	At 2011-12 Prices	At 2011-12 Prices	At 2011-12 Prices	At 2011-12 Prices	At 2011-12 Prices
GVA Agriculture & Allied	8.8	6.5	2.6	1.9	3.7 (12.7)	0.2 (4.4)
GVA Overall (Basic Prices)	14.0	7.1	7.4	7.1	6.6 (13.2)	7.2 (10.2)

**Note:** Figures in parentheses are at current prices

According to the information furnished by the Department of Agriculture, Cooperation and Farmers Welfare (DAC&FW), which has been used in compiling the estimate of GVA from Agriculture, GVA at basic prices in Q1 of FY 2015-16 from 'agriculture, forestry and fishing' sector grew by 1.9 per cent (at 2011-12 prices) as compared to growth of 2.6 per cent in Q1 2014-15. While this performance reversed contraction in the previous two quarters (Table I.2.), the expansion was held in check by a deficient monsoon that crimped the sown area a year earlier and produced a disappointing rice, wheat, coarse cereals, and pulses output. The growth recovery came from strong livestock, forestry, and fishery performance.

Information provided by the DAC&FW, production of rice, wheat, coarse cereals and pulses registered growth rates of (-)8.0 per cent, (-)7.2 per cent, (-)1.4 per cent and (-)12.8 per cent respectively during the rabi season of agriculture year 2014-15 (July 2014 to June 2015). Among commercial crops, the production of oilseeds declined by 17.6 per cent during the rabi season of 2014-15. Crops including fruits and vegetables account for about 59.0 per cent of GDP in 'agriculture, forestry and fishing' sector. Around 41.0 per cent of GVA of this sector is based on the livestock products, forestry and fisheries, which registered a combined growth of over 6 per cent in Q1 of 2015-16. The share of this non-crop segment in agriculture has been steadily rising over the past few years. According to the new GDP series, the GVA of the non-crop sector in total agricultural sector grew from 34.5 per cent in 2011-12 to 35.5 per cent in 2013-14.

**Table 1.2. Quarterly Estimate of GVA (Per cent Change Y-O-Y)**

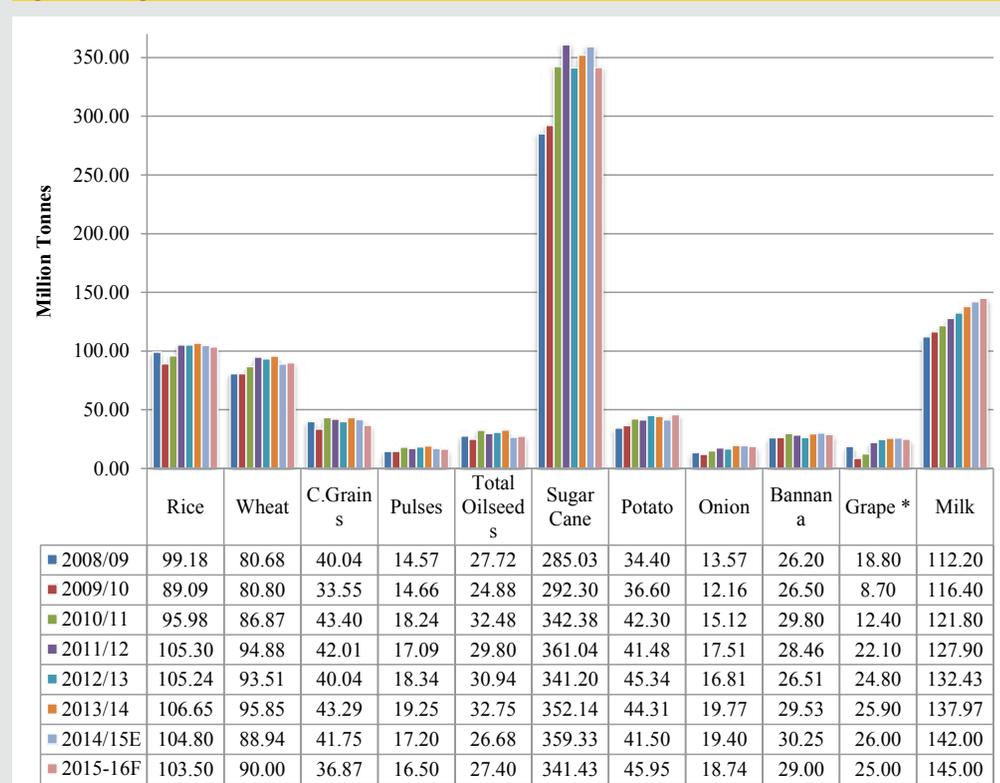
	(At 2011-12 Prices)									
	2013-14				2014-15				2015-16	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
GVA Agriculture and Allied	2.7	3.6	3.8	4.4	2.6	2.1	-1.1	-1.4	1.9	
GVA All Sectors (at Basic Prices)	7.2	7.5	6.6	5.3	7.4	8.4	6.8	6.1	7.1	
	(At Current Prices)									
	2013-14				2014-15				2015-16	
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2
GVA Agriculture and Allied	10.1	14.5	16.8	8.7	8.8	7.3	0.7	3.7	6.5	
GVA All Sectors (at Basic Prices)	12.8	14.7	15.0	10.6	14.0	13.4	8.2	6.0	7.1	

**Source:** [http://mospi.nic.in/Mospi\\_New/upload/nad\\_PR\\_31aug15.pdf](http://mospi.nic.in/Mospi_New/upload/nad_PR_31aug15.pdf)  
[http://mospi.nic.in/Mospi\\_New/upload/nad\\_press\\_release\\_29may15.pdf](http://mospi.nic.in/Mospi_New/upload/nad_press_release_29may15.pdf)

Due to unfavourable weather conditions characterized by late arrival of monsoon in most parts of the country and heavy rains during the harvest season of rabi crops (mainly wheat, gram, and rapeseed/mustard), production of most crops in 2014-15 declined sharply from the record 2013-14 production, reflective of the continued dependence of Indian agricultural production on vagaries of weather. According to the government's 4th Advance Estimate of crop production for the 2014-15 agricultural year (July-June)<sup>7</sup> released on August 17, 2015, total food grain production was 252.7 million tonnes, 4.7 per cent below the record 2013-14 production of 265 million tonnes. Most of the decline was in wheat, which declined by 7 million tonnes to 89 million tonnes. Rice and pulse production declined by 2 million tonnes each to 104.8 million tonnes and 17.2 million tonnes respectively. Total nine oilseed production registered a significant decline of around 20 per cent to 26.7 million tonnes, with most of the decline confined to groundnut and rapeseed and mustard. Sugarcane production limbed a near record high of 359.3 million tonnes, 7 million tonnes above the 2013-14 production (Figure I.1)

Production of most crops in 2014-15 declined sharply from the record 2013-14 production, reflective of the continued dependence of Indian agricultural production on vagaries of weather.

Figure I.1: Agricultural Production Trends



\* Lakh tonnes; E= 4th Advance Estimate and F= NCAER forecast

**Note:** 2014-15 4th Advance Estimate for rice, wheat, coarse grains, pulses, oilseeds and sugar cane; 3rd Advance estimate for potato and onion; anticipated production for milk for 2014-15 and forecast for 2015-16.

<sup>7</sup>[http://eands.dacnet.nic.in/Advance\\_Estimate/4th\\_Adv2014-15Eng.pdf](http://eands.dacnet.nic.in/Advance_Estimate/4th_Adv2014-15Eng.pdf)

**Table I.3: 2015-16 Crop Forecasts on Agricultural Year Basis (million tonnes)**

Crop	2014-15 NCAER Forecast Dec 2014	2014-15 GOVT 4 <sup>th</sup> Advance Estimate	2015-16 GOVT 1 <sup>st</sup> Advance Estimate	2015-16 NCAER Forecast Oct 2015
Rice (kharif)	88.12	90.86	90.61	88.8 - 89.0
Rice (rabi)	14.88	13.94	NA	13.0 *
Total Rice	103.00	104.80	NA	103.5 **
Wheat	94.50	88.94	NA	88.0 *
Maize (kharif)	15.35	16.39	15.51	16.2 -16.7
Maize (rabi)	6.91	7.29	NA	7.0 *
Total Maize	22.26	23.67	NA	22.5 **
Bajra	8.34	9.05	8.64	7.9 - 8.8
Jowar (kharif)	2.31	2.01	1.87	1.9- 2.3
Jowar (rabi)	3.13	3.04	NA	2.6*
Total jowar	5.44	5.05	NA	4.5 **
Other coarse grains (kharif)	2.0	2.25	1.86	1.9
Other coarse grains (rabi)	1.6	1.75	NA	1.7 *
Total other coarse grain	3.6	4.00	NA	3.6 **
Pulses (kharif)	5.16	5.63	5.56	4.9 -5.4
Pulses (rabi)	11.52	11.57	NA	11.0 *
Total Pulses	16.68	17.20	NA	16.5 **
Total foodgrains (kharif)	120.04	126.31	124.05	122.6 #
Total foodgrains (rabi)	131.80	126.39	NA	123.4*
Total Foodgrains	251.84	252.68	NA	246.0 **
Groundnut (kharif)	3.77	5.08	5.11	4.1-4.9
Groundnut (rabi)	1.57	1.48	NA	1.4 *
Total Groundnut	5.34	6.56	NA	5.9 **
Soybean	13.50	10.53	11.83	12.7-14.0
Rapeseed/ mustard	7.51	6.31	NA	6.0 *
Sugarcane	336.70	359.3	341.42	350.2-358.3
Onion	16.81	19.77	19.40	19.77
Potato	45.34	44.31	41.50	45.95
Banana	26.51	29.53	30.25	29.0
Milk	132.43	137.97	142.0	145.0

\* NCAER tentative forecast based on prevailing conditions, will be revised in the next Rabi Outlook Report, \*\* 1st AE of kharif crops by the government + NCAER tentative forecast of rabi.

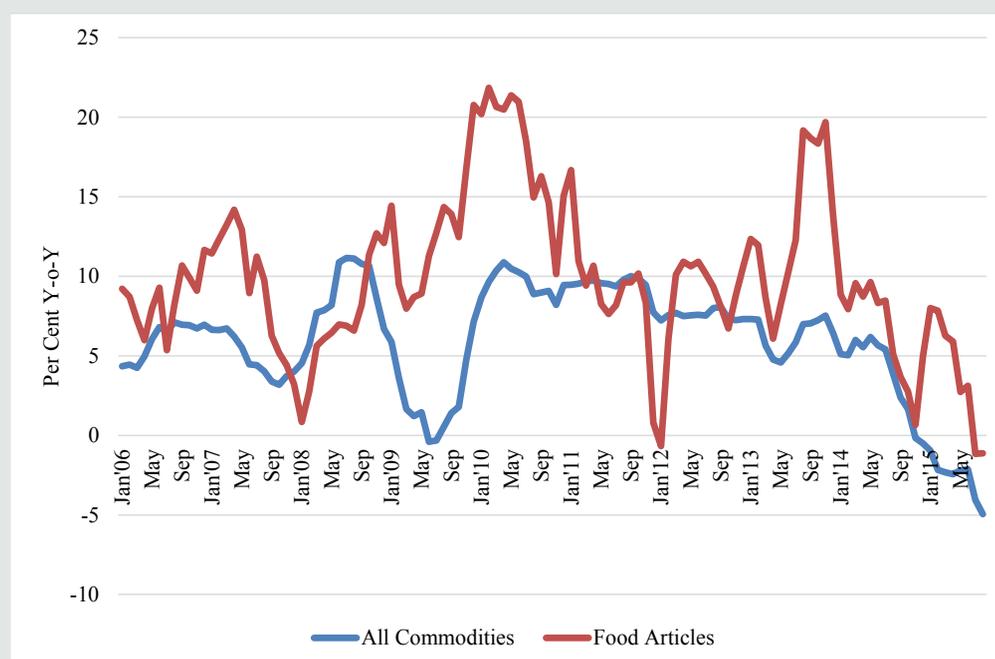
# Mid-point of the range of NCAER kharif forecasts for various crops

**Note:** The 2015 Kharif production was derived based on two approaches: one in which trend growth rate, the monsoon deviation from the LPA (14 per cent below LPA) and the incidence of El Nino in a year using a dummy variable and a cyclical trend variable in the case of sugarcane; in the case of rice and kharif pulses, a dummy variable is used for the period 2011-12 to 2015-16, individually to reflect the rise in output that was not captured by the trend and may reflect some of the shifts in production across states besides productivity improvements. In the second approach, no El Nino effect was specifically captured but crop specific rainfall indices were used to assess output based on assumption regarding monsoon period rainfall. In the case of onion, potato, banana and milk the second approach was used for estimation in which overall June-September rainfall was used as an explanatory variable rather than commodity specific rainfall index.

## I.2 Food Inflation Slows Further

Year-on-year inflation of food articles measured by wholesale price index continued to decline during November 2013 through November 2014 but started firming since December 2014 to reach a peak of around 8 per cent in early 2015. Food inflation resumed its downtrend since then hitting the lowest level of 0.6 percent in November 2014. During November 2014 to March 2015, food inflation increased steadily to reach a peak level of 6.2 per cent in March 2015. However, since then, food inflation showed a continuous declining trend entering the negative territory in July and August 2015. Food inflation in August 2015 was (-) 1.1 percent (Figure I.2). The overall headline inflation measured by wholesale price index has also been showing a downward trend since May 2014 hitting a negative value in November 2014. Inflation continued to decelerate touching close to (-) 5 percent in August 2015.

Figure I.2: Headline Inflation and Food Inflation Falls in the Negative Territory



Major food commodities contributing to the negative inflation in recent months were vegetables in general and potato in particular, fruits (particularly banana), and sugar whereas onion, pulses, and milk registered significant increases (Table I.4).

Two approaches were adopted for the short term projections of price indices of major food items, based on which year-on-year price changes were calculated. The two time series techniques used here are a) Harmonic analysis and b) Autoregressive Integrated Moving Average (ARIMA) method. While, Harmonic analysis is indicative of Delhi wholesale prices of selected food commodities, the ARIMA projections take into consideration WPI price index. The projected year-on-year percentage changes in wholesale price indices are summarized in Tables I.5 and Table I.6.

Based on the normal trend and cyclical components of prices, the price rise in the next 6 months (November to April) in the indicative Delhi wholesale market is expected to remain moderate and stable in the case of wheat, rice, urad dal, masur dal, vegetable oils and milk. Potato price rise is forecast to remain high and increasing while for onion the year-on-year change is expected to remain high but stable. In the case of tur dal y-o-y price inflation is expected to strengthen until year end- and then decline. Price inflation is

Major food commodities contributing to the negative inflation in recent months were vegetables in general and potato in particular, fruits (particularly banana), and sugar whereas onion, pulses, and milk registered significant increases

In case of food articles, the price inflation in next 3-4 months is expected to strengthen further, whereas in case of food products it will remain moderate.

expected to remain stable but at high levels in the case of masur dal, soy oil, and milk. Sugar price rise is forecast to remain stable although somewhat on the higher side.

As the ARIMA projection is based on all India level, it may be at variance with the projections made using Harmonic Analysis for the Delhi wholesale market. However, the projections for next six months based on ARIMA technique follow almost same direction as projected by Harmonic analysis for most of the commodities, except rice where all India prices are likely to ease in short run. Table I.6 shows that the price rise in next three months will remain high in case of wheat, bajra, maize, pulses, onion, groundnuts, rapeseed and edible oil, whereas moderation in prices is expected for jowar, potato and soyabeans. Overall, in case of food articles, the price inflation in next 3-4 months is expected to strengthen further, whereas in case of food products it will remain moderate.

**Table I.4: Inflation Trend in Major Food Commodities: WPI % change Y-O-Y**

Month	Food Articles	Rice	Wheat	Maize	Pulses	All Veggies	Potao	Onion	All Fruits	Banana	Milk	Oilseeds	Sugar	Edible oil
Jan'13	12.3	17.8	21.9	19.2	15.9	30.0	73.1	125.2	10.6	25.1	4.5	27.1	10.1	7.5
Feb	12.0	17.7	21.8	16.6	14.0	19.9	50.1	182.4	11.6	29.4	4.5	24.3	10.5	7.0
Mar	8.6	17.6	19.3	13.0	10.8	-1.7	15.8	110.7	5.8	26.0	4.4	19.7	9.4	3.6
Apr	6.1	17.1	13.6	10.9	10.5	-8.9	-0.6	90.8	4.8	13.6	4.0	18.2	8.7	2.0
May	8.2	18.5	12.4	11.9	5.9	5.2	1.3	94.3	9.9	16.4	4.5	12.8	7.1	0.9
Jun	10.3	20.4	13.9	16.1	1.6	17.4	-8.4	114.8	25.6	23.9	4.1	9.9	6.9	0.1
Jul	12.3	21.1	13.6	15.0	-7.4	46.8	-6.1	146.4	30.1	17.8	3.0	2.7	2.2	-2.2
Aug	19.2	21.3	9.4	11.2	-14.7	81.0	-15.2	272.5	55.2	35.2	6.0	-6.7	-4.8	-2.9
Sep	18.7	18.6	7.3	11.2	-13.4	91.1	-12.3	335.9	54.7	38.8	5.8	-5.1	-7.4	-2.7
Oct	18.3	14.5	7.9	6.4	-10.7	80.2	0.2	293.3	53.9	45.1	5.6	1.1	-8.2	-0.3
Nov	19.7	15.0	7.0	7.4	-9.9	97.7	35.0	201.2	61.0	43.1	6.9	1.6	-7.7	0.2
Dec	13.7	13.5	7.6	4.4	-7.3	56.8	52.8	38.3	30.3	34.4	7.0	-0.2	-5.6	-0.9
Jan'14	8.8	13.4	6.8	-0.7	-7.1	13.5	16.0	0.5	9.8	18.3	7.2	-2.6	-5.5	-1.7
Feb	7.9	13.6	6.6	-1.4	-5.7	2.4	7.7	-27.5	6.4	12.8	8.8	-0.6	-6.7	-1.5
Mar	9.6	12.6	6.2	-1.0	-2.3	6.2	31.4	-15.0	11.7	13.2	9.5	0.9	-4.4	-0.1
Apr	8.7	12.8	4.4	-1.7	-1.8	1.6	33.0	-10.6	9.2	18.0	9.2	0.2	-1.1	-0.7
May	9.6	12.8	3.4	-2.6	-0.2	0.1	37.1	-3.5	9.8	20.5	9.6	5.0	-0.9	-0.8
Jun	8.3	10.2	0.9	-4.7	0.6	-5.4	46.5	-11.4	6.8	25.1	10.8	4.8	-0.7	-0.8
Jul	8.5	8.1	1.1	-0.4	3.3	-1.2	47.8	-8.3	12.1	34.0	10.5	6.3	2.0	1.0
Aug	5.1	6.6	0.7	-2.4	7.9	-6.0	65.8	-44.5	4.4	23.0	12.2	12.6	2.6	-0.2
Sep	3.7	6.9	-1.5	-9.9	6.7	-15.1	93.5	-58.1	-0.5	17.9	11.6	8.1	2.1	-2.3
Oct	2.7	6.5	-1.9	-6.7	4.0	-19.4	82.8	-59.0	-3.5	13.6	11.4	3.5	1.9	-2.8
Nov	0.7	5.5	-2.2	-7.3	4.4	-28.4	34.2	-55.3	-11.8	8.0	10.2	-0.7	0.2	-3.3
Dec	5.0	4.4	-2.4	-7.5	5.9	-6.4	0.5	-19.7	4.8	13.5	9.4	-0.9	-1.3	-3.4
Jan'15	8.0	4.0	-1.6	-2.9	12.6	18.6	-8.0	-3.3	17.7	7.3	9.6	0.5	-1.6	-0.4
Feb	7.8	3.3	-2.4	-0.9	14.5	15.3	-5.2	26.0	16.2	13.4	8.0	-0.2	-2.2	-0.8
Mar	6.3	0.6	-1.2	1.9	13.2	9.3	-21.5	36.5	11.1	11.1	7.5	-1.3	-4.9	-1.2
Apr	5.9	0.0	1.6	1.8	15.5	-1.3	-41.1	30.0	7.9	0.9	7.4	-1.5	-8.8	-1.2
May	2.7	-1.4	2.6	2.5	23.1	-5.0	-50.7	22.1	1.4	-2.4	6.9	-0.6	-11.2	0.8
Jun	3.1	-1.6	1.8	1.5	36.8	-6.8	-51.6	19.1	0.5	3.4	5.2	3.1	-13.3	2.8
Jul	-1.2	-2.9	2.0	-1.8	35.8	-24.5	-49.3	-0.5	-15.0	-9.0	5.3	-0.9	-17.5	1.7
Aug	-1.1	-3.5	2.0	1.7	36.4	-21.2	-51.7	65.3	-12.4	-11.7	2.1	-2.5	-19.1	1.4

**Table I.5: Projected Wholesale Prices in Delhi Based on Harmonic Analysis: % Change Year-on -Year**

Commodity	Nov 15	Dec 15	Jan 16	Feb 16	Mar16	Apr 16
Wheat	3.40	3.37	3.35	3.35	3.35	3.36
Rice	4.78	4.75	4.73	4.73	4.73	4.74
Tur dal	24.17	28.49	8.86	10.78	11.07	9.64
Chana Dal	48.12	47.78	48.00	48.66	49.56	3.55
Urad Dal	6.72	6.93	7.10	7.14	7.02	6.83
Masur Dal	11.56	9.03	6.41	3.76	1.22	-1.08
Mung dal	15.68	16.24	16.45	16.33	15.90	15.20
Potato	-11.60	50.84	64.65	80.90	94.29	99.19
Onion	47.17	56.68	32.15	38.31	42.44	42.28
Sugar	11.17	11.93	12.49	12.80	12.77	12.32
Soy oil 1/	5.97	5.76	5.03	4.05	3.11	5.65
Palm oil 1/	-1.35	-0.79	-0.05	0.85	1.88	3.02
Milk	8.12	8.06	8.01	7.96	7.91	7.85

1/ Retail price in packs

Note: Projections do not take into account the likely effects of decline in output due to weak monsoon and government policy changes but reflect the average patterns in the trends and seasonal factors in each commodity prices.

**Table I.6: Projected Wholesale Price Indices based on Time Series ARIMA model: % Change Year on Year.**

Commodity	Projected					
	Oct-15	Nov-15	Dec-15	Oct-15	Nov-15	Dec-15
	YOY%			MOM%		
Rice	-3.0	-2.3	-0.8	0.6	0.1	-0.6
Wheat	4.0	5.5	5.8	0.5	2.6	1.6
Jowar	-7.6	-6.8	-4.1	-0.3	0.0	2.9
Bajra	-0.3	7.0	15.0	-1.0	3.2	5.1
Maize	5.9	4.0	5.1	-2.3	-0.8	2.0
Pulses	43.8	44.9	42.3	2.6	1.7	-0.8
Gram	50.9	55.4	53.0	2.7	2.4	-0.3
Tur	58.4	57.2	57.4	2.4	0.3	-1.0
Potatoes	-56.6	-58.4	-45.6	4.6	-3.5	-17.5
Onions	135.2	137.5	110.4	5.2	4.2	-12.5
Ground nut	19.4	20.0	23.1	-1.2	-1.8	-0.6
Rape/Mustard	16.5	17.3	15.4	0.8	1.1	0.3
Soybeans	3.0	-1.6	-7.5	-3.9	-0.9	-1.6
Edible oil	3.4	2.7	4.1	0.2	-0.4	0.8
Food article	2.8	3.5	3.9	0.7	0.3	-1.8
Food products	-0.3	-0.3	0.4	0.2	-0.3	-0.1
Food Sector	1.7	2.0	2.7	0.4	0.0	-1.1

**Notes:** (1) Projections do not take into account the likely effects of decline in output due to weak monsoon but reflect the average patterns in the trends and seasonal factors in each commodity prices. (2) The price changes in the case of WPI for 'food products' is calculated as weighted average of food articles and food products, the weights based on wholesale price index weights. (3) As the projection is on all India level it may be at variance with the projections made using Harmonic Analysis for the Delhi wholesale market.

### I.3 Supply–Demand Balance Summary

Part IV of the report discusses the short term scenario for specific food commodities. Summary of the scenario that is developing in the supply-demand balance sheet of the food commodities is summarised in **Table I.7**.

**Table I.7: Food Balance Sheet (million tonnes)**

Particulars	Rice	Wheat	Maize	Pulses	Edible oils	Sugar *	Onion	Potato
	2015-16	2016-17	2015-16	2015-16	2015-16	2015-16	2015-16	2015-16
	Oct-Sep	Apr-Mar	Oct-Sep	Oct-Sep	Oct-Sep	Oct-Sep	Jul-Jun	Jul-Jun
Beginning stocks	14.2 (18.6)	15.3 (17.2)	1.0 (1.0)	Neg (Neg)	1.5 (1.2)	9.6 (7.5)	Neg (Neg)	Neg (Neg)
Production	103.5 (104.8)	88.5 (88.9)	22.5 (23.7)	16.5 (17.2)	4.6 (4.1)	27.0 (28.3)	19.7 (18.7)	45.9 (45.9)
Imports	0 (Neg)	0 (1.0)	0.05 (0.02)	5.5 (4.6)	15.8 (15.3)	0 (0)	Neg (0)	0 (0)
Total supply	117.7 (123.4)	103.8 (107.1)	23.6 (24.7)	22.0 (21.8)	21.9 (20.6)	36.6 (35.8)	19.7 (18.7)	45.9 (45.9)
Exports	9.0 (11.7)	0.5 (0.5)	0.8 (1.0)	0.1 (0.1)	0.1 (0.1)	2.0 (1.1)	1.27 (1.23)	0.43 (.37)
Domestic Food use	98.5 (95.5)	87.8 (86.3)	2.6 (2.5)	21.9 (21.7)	19.6 (18.3)	25.5 (25.1)	18.5 (17.5)	45.5 (45.6)
Total Domestic Utilization	100.5 (97.5)	89.3 (91.3)	22.3 (22.7)	22.0 (21.8)	20.3 (19.0)	25.5 (25.1)	18.5 (17.5)	45.5 (45.6)
Closing stocks	8.2 (14.2)	14.0 (15.3)	0.5 (1.0)	Neg (Neg)	1.5 (1.5)	9.1 (9.6)	Neg (Neg)	Neg (Neg)
Total Distribution	117.7 (123.4)	103.8 (107.1)	23.6 (24.7)	22.0 (21.8)	21.9 (20.6)	36.6 (35.8)	19.7 (18.7)	45.9 (45.9)
Stocks to Use %	8.2 (13.0)	15.7 (16,8)	Neg (Neg)	Neg (Neg)	7.4 (7.9)	35.7 (38.2)	Neg (Neg)	Neg (Neg)

**Note:** The stocks in the case of commodities other than rice, wheat and sugar are notional and the provided only to indicate overall price or quantity adjustments needed to obtain supply-demand balance. In the case of rice and wheat stocks are government stocks and in the case of sugar, stocks are those with the industry. Figures in parentheses are data for the previous marketing year.

### I.4 Recent Government Initiatives in Agriculture Sector

During the past one year, the government has injected different perspectives to many conventional models in which India operated, including in Agriculture Sector<sup>8</sup>. Indian agriculture is typically dependent on the summer monsoon rains, making it vulnerable to the vagaries of weather. In a bid to remove persistent bottlenecks in Indian agriculture and revive growth, the government recently approved Rs.50,000 crore irrigation package under

<sup>8</sup>Public-private tie-ups are key to boosting agri infra (<http://www.thehindubusinessline.com/news/variety/publicprivate-tieups-are-key-to-boosting-agri-infra/article7371470.ece>)

In a bid to remove persistent bottlenecks in Indian agriculture and revive growth, the government recently approved Rs.50,000 crore irrigation package under the Pradhan Mantri Krishi Sinchai Yojana

the Pradhan Mantri Krishi Sinchai Yojana (PMKSY)<sup>9</sup>. The scheme will also promote precision-irrigation technologies, enhance recharge of aquifers and introduce sustainable water conservation practices. This flagship irrigation scheme, when implemented, will ensure that all farm lands get water for cultivation, reducing the dependency of Indian agriculture on the monsoon and reducing the year-to-year yield fluctuations. In this context, inter-linking large rivers of India should also be taken up more seriously, although this would require a massive amount of political and financial capital. The recent inter-linking of Krishna and Godavari rivers in south India shows that if there is a will there is a way.

Another bottleneck facing Indian agriculture is a non-transparent agricultural marketing system, which prevents fair price realisation by farmers, mainly because of market rigidities. It also leads to wide intra-regional price disparities and wide price fluctuations. To address this issue, the government also recently took the first step to create a national market for agricultural produce through an electronic platform. This will provide farmers and traders with access to opportunities for purchase and sale of agricultural commodities in a transparent manner. It would also increase farmers' access to markets through warehouse-based sales and thus obviate the need for a farmer to transport his produce to a mandi.

The government is also reconsidering its role in the management of the food economy. One indicator of this has been the formation of a high-level committee to redefine the roles and functions of the Food Corporation of India (FCI), the major government parastatal involved in procurement, warehousing, transportation and distribution of food grains, mainly wheat and rice. As per the recommendation of the committee, which submitted its report to the government in January 2015<sup>10</sup>, the government is also considering direct cash transfers to the Aadhaar-linked bank accounts of public distribution system (PDS) beneficiaries.

Although private participation in agriculture has shown some growth, it has remained limited. The existing lack of agriculture infrastructure, such as storage, processing, cold chains and logistics calls for increased private or public-private participation in these areas. The government has played a vital role of encouraging/aggregating private investment with announcements of various policy level decisions and projects such as setting up mini-food parks. However, foreign direct investment in food retailing continues to remain a contentious issue. The primary goal of developing agricultural infrastructure is to provide facilities along the value chain from the farm to the table. Such infrastructure is also likely to promote organised contract farming in the catchment areas, moderating to some extent the negative impact of shrinking size of farm holdings in India, provided contract farming is legalised.

India is blessed with ample supplies of solar energy, in particular at times that crops are at critical growth stages. Solar energy driven pumping sets is a viable alternative for electrical and diesel pumping systems in farm irrigation for farmers. The government is looking into the feasibility of implementing this project. The government's plan is for adding 100,000MW of solar power by 2022.

The government has also launched nationwide 'Soil Health Card' Scheme for focusing attention on the health of soil in agricultural areas across the country, to boost productivity and to encourage judicious use of fertilizers.

The government is also considering conversion of input and food grain subsidies into direct cash transfer, which should help plug subsidy leakages and ensure greater availability of

<sup>9</sup><http://pib.nic.in/newsite/PrintRelease.aspx>

<sup>10</sup>[http://www.fci.gov.in/upload/News/Report%20of%20the%20High%20Level%20Committee%20on%20Reorienting%20the%20Role%20and%20Restructuring%20of%20FCI\\_English.pdf](http://www.fci.gov.in/upload/News/Report%20of%20the%20High%20Level%20Committee%20on%20Reorienting%20the%20Role%20and%20Restructuring%20of%20FCI_English.pdf)

The government also recently took the first step to create a national market for agricultural produce through an electronic platform.

The government has also launched nationwide 'Soil Health Card' Scheme for focusing attention on the health of soil in agricultural areas across the country, to boost productivity and to encourage judicious use of fertilizers.

funds for strategic public investment in areas such as irrigation, building of grain storage systems and cold chains.

The Prime Minister's recent initiative on integration of agri-markets across the country through the e-platform is seen as an important measure for overcoming challenges posed by the present agri-marketing system namely - fragmentation of State into multiple market areas each administered by separate Agricultural Produce Marketing Committee (APMC), multiple levy of mandi fees, requirement for multiple license for trading in different APMCs, licensing barriers leading to conditions of monopoly, poor quality of infrastructure and low use of technology, information asymmetry, opaque process for price discovery, high level of market charges, movement controls, etc. The need to unify markets both at State and National level is, therefore, clearly the requirement of time, in order to provide better price to farmers, improve supply chain, reduce wastages and create a unified national market through provision of the common e-platform.

## I.5 Policy Developments during February 2015 to September 2015

A summary of policy initiatives related to agriculture and allied sectors taken since our last Rabi Outlook Report is provided in Table I.8.

**Table I.8: Agricultural Policy Developments during February 2015-September 2015**

Sl. No.	Commodity / Issues	Date	Policy Instrument	Details
1	Wheat	07-08-15	CBEC	Government imposes 10 per cent import duty on wheat until March 31, 2016. Import duty on wheat: <a href="http://www.cbec.gov.in/resources/htdocs-cbec/customs/cs-act/notifications/notfns-2015/cs-tarr2015/cs44-2015.pdf">http://www.cbec.gov.in/resources/htdocs-cbec/customs/cs-act/notifications/notfns-2015/cs-tarr2015/cs44-2015.pdf</a>
		19-10-15		Government increases the import duty on wheat to 25 per cent. <a href="http://www.cbec.gov.in/htdocs-cbec/customs/cs-act/notifications/notfns-2015/cs-tarr2015/cs51-2015">http://www.cbec.gov.in/htdocs-cbec/customs/cs-act/notifications/notfns-2015/cs-tarr2015/cs51-2015</a>
Remarks: Aimed to curb wheat imports at a time when domestic stocks are ample.				
2	Rice	08-05-15	MCAF&PD	Levy on rice reduced up to a maximum of 25 percent in kharif marketing season. <a href="http://dfpd.nic.in/issue-of-levy-orders.htm">http://dfpd.nic.in/issue-of-levy-orders.htm</a>
Remarks: To reduce irregularities which exist in levy procurement system and to evolve better outreach of procurement machinery to the farm gate.				
3	Pulses	02-09-15	Cabinet	Reimbursement of losses incurred by government agencies for import of pulses and sold in domestic market <a href="http://pib.nic.in/newsite/erelease.aspx?relid=126554">http://pib.nic.in/newsite/erelease.aspx?relid=126554</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=126553">http://pib.nic.in/newsite/erelease.aspx?relid=126553</a>
Remarks: This will enable Central PSUs to intensify pulse imports to check price rise.				

(Contd...)

Table I.8: (Contd...)

4	Pulses	10-06-15	CCEA	Government approves large-scale imports. <a href="http://pib.nic.in/newsite/erelease.aspx?relid=127085">http://pib.nic.in/newsite/erelease.aspx?relid=127085</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=126828">http://pib.nic.in/newsite/erelease.aspx?relid=126828</a>
Remarks: To contain the domestic price spurt of pulses.				
5	Pulses, edible oil, oilseeds	22-09-15	Cabinet MCAF&PD	The Cabinet approved extension of the time limit regulating trade in pulses, edible oils and edible oilseeds till September 30, 2016 under the Essential Commodities Act. <a href="http://pib.nic.in/newsite/erelease.aspx?relid=127083">http://pib.nic.in/newsite/erelease.aspx?relid=127083</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=127085">http://pib.nic.in/newsite/erelease.aspx?relid=127085</a>
Remarks: To enable States to regulate the trade of these essential commodities and to continue to take effective operations under the Essential Commodities Act.				
6	Vegetable Oils	17-09-15	CBEC	Import duty on crude vegetable oils hiked to 12.5 per cent from 7.5 per cent and on refined oils to 20 per cent from 15 per cent. <a href="http://www.cbec.gov.in/htdocs-cbec/customs/cs-act/notifications/notfns-2015/cs-tarr2015/cs46-2015">http://www.cbec.gov.in/htdocs-cbec/customs/cs-act/notifications/notfns-2015/cs-tarr2015/cs46-2015</a>
Remarks: To give incentive to domestic vegetable oil producers.				
7	Vegetable oils	06-08-15	DGFT	Vegetable oil export policy <a href="http://dgft.gov.in/Exim/2000/NOT/NOT15/note17.pdf">http://dgft.gov.in/Exim/2000/NOT/NOT15/note17.pdf</a>
Remarks: Exports of some value added vegetable oils permitted.				
8	Rice bran oil	22-07-15	CCEA	Removed quantitative restrictions on exports of rice bran oil <a href="http://dgft.gov.in/Exim/2000/NOT/NOT15/note17.pdf">http://dgft.gov.in/Exim/2000/NOT/NOT15/note17.pdf</a>
Remarks: Due to greater demand abroad for rice bran oil than in the domestic market.				
9	Sugar	12-08-15 12-08-15 10-06-15	MCAF&PD CCEA	Soft loan of Rs. 6,000 crores to sugar mills <a href="http://pib.nic.in/newsite/erelease.aspx?relid=124954">http://pib.nic.in/newsite/erelease.aspx?relid=124954</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=124955">http://pib.nic.in/newsite/erelease.aspx?relid=124955</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=122418">http://pib.nic.in/newsite/erelease.aspx?relid=122418</a>
Remarks: To facilitate payment of sugarcane dues of farmers for the 2014-15 sugar season				
10	Sugar	18-09-15	CCEA	Government notified the mandatory export of 4 million tonnes of sugar for the 2015-16 season (October to September) <a href="http://www.dnaindia.com/money/report-govt-asks-mills-to-compulsorily-export-4-mt-sugar-by-sep-2016-2126497">http://www.dnaindia.com/money/report-govt-asks-mills-to-compulsorily-export-4-mt-sugar-by-sep-2016-2126497</a>
Remarks: This will help take pressure on prices by reducing domestic stockpiles.				
11	Sugar	07-09-15	DGFT	The requirement of registration of quantity with DGFT for export of sugar has been dispensed <a href="http://dgft.gov.in/Exim/2000/NOT/NOT15/noti2016.pdf">http://dgft.gov.in/Exim/2000/NOT/NOT15/noti2016.pdf</a>
Remarks: To facilitate sugar exports in order to reduce bulging sugar stocks with mills				

(Contd...)



Table I.8: (Contd...)

12	Sugar	07-09-15	DGFT	Withdrawal of Duty Free Import Authorization for import of raw sugar: <a href="http://dgft.gov.in/Exim/2000/NOT/NOT15/not0515.pdf">http://dgft.gov.in/Exim/2000/NOT/NOT15/not0515.pdf</a>
Remarks: To restrict sugar imports in view of large domestic stocks and declining sugar prices				
13	Ethanol	27-08-15	Petroleum companies	India issues local tender to buy 2.7 billion litres of ethanol for blending
Remarks: This decision was taken following the Prime Minister's suggestion for higher use of the sugarcane by-product to mitigate problem faced by Indian sugar sector. India plans to eventually double the blending level to 10 per cent from the current advocated level of 5 per cent without setting a time frame. The government also removed the excise duty on ethanol.				
14	Potato Onion	08-05-15	MOAC&FW	Setting up of Price Stabilization Fund <a href="http://pib.nic.in/newsite/erelease.aspx?relid=121416">http://pib.nic.in/newsite/erelease.aspx?relid=121416</a>
Remarks: To support market intervention for price control of potato and onions				
15	Potato	26-05-15 20-02-15	MOAC&FW DGFT	MEP on potato abolished <a href="http://pib.nic.in/newsite/erelease.aspx?relid=122026">http://pib.nic.in/newsite/erelease.aspx?relid=122026</a> <a href="http://dgft.gov.in/exim/2000/NOT/NOT13/note112.pdf">http://dgft.gov.in/exim/2000/NOT/NOT13/note112.pdf</a>
Remarks: To encourage exports in view of declining domestic prices.				
16	Onion	26-6-15	DGFT	Export policy for onion <a href="http://dgft.gov.in/Exim/2000/NOT/NOT15/note132015.pdf">http://dgft.gov.in/Exim/2000/NOT/NOT15/note132015.pdf</a>
Remarks: To permit limited exports of onion				
17	Onion	22-08-15	DGFT	Minimum export price of onion hiked by \$275 per tonne to \$700 per tonne. <a href="http://dgft.gov.in/Exim/2000/NOT/NOT15/noti1816.pdf">http://dgft.gov.in/Exim/2000/NOT/NOT15/noti1816.pdf</a>
Remarks: Aimed at curbing exports and boosting domestic supply to check price rise. The export price was last raised to \$425 per tonne from \$250 on 26 June.				
18	Price Policy- Kharif Season	17-6-15	CCEA MOAC&FW	Minimum Support Prices for 2015-16 kharif crops established <a href="http://pib.nic.in/newsite/erelease.aspx?relid=122585">http://pib.nic.in/newsite/erelease.aspx?relid=122585</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=122586">http://pib.nic.in/newsite/erelease.aspx?relid=122586</a>
The decision is based on recommendations of Commission on Agricultural Costs and Prices. To give incentive to pulse production an additional bonus of Rs. 200 per quintal over and above the enhanced MSP was also announced.				
19	Rural distress	12-08-15 11-08-15	CCEA MOAC&FW	The government unveiled a package of measures to combat rural distress in the backdrop of a below-average monsoon rainfall. <a href="http://pib.nic.in/newsite/erelease.aspx?relid=126888">http://pib.nic.in/newsite/erelease.aspx?relid=126888</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=124953">http://pib.nic.in/newsite/erelease.aspx?relid=124953</a>
Remarks: The measures include implementation of diesel subsidy for protective irrigation, enhancement of seed subsidy to farmers, implementation of Additional Fodder Development program				

(Contd...)

Table I.8: (Contd...)

20	Rural distress	17-09-15	CCEA	Number of days of employment under MGNREGS increased from the existing 100 days to 150 days in areas hit by drought <a href="http://pib.nic.in/newsite/erelease.aspx?relid=126943">http://pib.nic.in/newsite/erelease.aspx?relid=126943</a>
Remarks: To alleviate rural distress caused by poor rainfall				
21	Farmer welfare	15-08-15	PM Office	Agriculture Ministry to be renamed as the Ministry for 'Agriculture and Farmers' Welfare'
Remarks: with a view to take care of the farming community needs. To Emphasis on the welfare of farmers for the overall growth of the agri-sector.				
22				The cabinet gave its approval to the Rs.5, 142 crore "rurban" project that entails the creation of 300 "smart village clusters" in the next three years.
To alleviate rural distress and spurring development by offering employment opportunities, bridging the urban-rural divide and reducing distress migration.				
23	Irrigation	02-07-15	CCEA MOAC&FW	Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) <a href="http://pib.nic.in/newsite/erelease.aspx?relid=122935">http://pib.nic.in/newsite/erelease.aspx?relid=122935</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=122936">http://pib.nic.in/newsite/erelease.aspx?relid=122936</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=123257">http://pib.nic.in/newsite/erelease.aspx?relid=123257</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=124298">http://pib.nic.in/newsite/erelease.aspx?relid=124298</a>
Remarks: To achieve convergence of investments in irrigation at the field level, expand cultivable area under assured irrigation, improve on farm water use efficiency, etc.				
24	Credit	22-07-15	CCEA	A proposal to extend a 3 per cent Interest subvention scheme for banks approved
Remarks: In order to ensure farmers receive loans of up to Rs. 3 lakh at seven per cent interest per annum.				
25	Soil Health	15-08-15	MOAC&FW	Assistance for reclamation of Soil Health <a href="http://pib.nic.in/newsite/erelease.aspx?relid=123288">http://pib.nic.in/newsite/erelease.aspx?relid=123288</a>
To promote soil test based balanced and judicious use of fertilizers				
26				Prohibition on import of milk and milk products (including chocolates and chocolate ingredient) from China is extended for one more year, i.e., till 23.6.2016 or until further orders, whichever is earlier. <a href="http://dgft.gov.in/Exim/2000/NOT/NOT15/note.122015.pdf">http://dgft.gov.in/Exim/2000/NOT/NOT15/note.122015.pdf</a>
Remarks: Due to sanitary considerations				

(Contd...)



Table I.8: (Contd...)

27				Seeks to further amend notification No. 12/2012-Customs dated 17.03.2012 so as to increase the basic customs duty on ghee, butter and butter oil from the present rate of 30% to 40% for a period up to and inclusive of the 31st day of March, 2016 <a href="http://www.cbec.gov.in/htdocs-cbec/customs/cs-act/notifications/notfns-2015/cs-tarr2015/cs49-2015">http://www.cbec.gov.in/htdocs-cbec/customs/cs-act/notifications/notfns-2015/cs-tarr2015/cs49-2015</a>
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Remarks :To protect interests of domestic dairy industry

28	Agricultural Marketing	02-07-15 07-07-15 30-04-15	MOAC&FW CCEA	Promotion of National Agriculture Market (NAM) through Agri-Tech Infrastructure Fund <a href="http://pib.nic.in/newsite/erelease.aspx?relid=123996">http://pib.nic.in/newsite/erelease.aspx?relid=123996</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=122934">http://pib.nic.in/newsite/erelease.aspx?relid=122934</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=123051">http://pib.nic.in/newsite/erelease.aspx?relid=123051</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=120039">http://pib.nic.in/newsite/erelease.aspx?relid=120039</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=124566">http://pib.nic.in/newsite/erelease.aspx?relid=124566</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=122932">http://pib.nic.in/newsite/erelease.aspx?relid=122932</a>
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Remarks: 585 regulated market across the country will be integrated with common e-platform. Private markets will also be allowed access to the e-platform.

Remarks: Due to sanitary concerns.

29	Inputs - Fertilizer	13-05-15 01-07-15 08-05-15	CCEA MOAC&FW	Government clears new urea Policy <a href="http://pib.nic.in/newsite/erelease.aspx?relid=121666">http://pib.nic.in/newsite/erelease.aspx?relid=121666</a> Nitrogen use efficiency program <a href="http://pib.nic.in/newsite/erelease.aspx?relid=122908">http://pib.nic.in/newsite/erelease.aspx?relid=122908</a> <a href="http://pib.nic.in/newsite/erelease.aspx?relid=121418">http://pib.nic.in/newsite/erelease.aspx?relid=121418</a>
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Remarks: Aimed to increase domestic production by 2 million tonnes and reduce its subsidy bill by over Rs. 4,800 crore annually, without raising retail prices. To increase the efficiency of nitrogen fertilizer use by urea coating.

**Note:** CBEC – Central Board of Excise and Customs; MOAC&FW – Ministry of Agriculture, Cooperation and Farmers Welfare; CCEA – Cabinet Committee on Economic Affairs; DGFT – Director General of Foreign Trade; MCAF&PD – Ministry of Consumer Affairs, Food, and Public Distribution.

## PART II

# Overview of the Global Food Outlook

## II.1 The world economy continues to grow at a modest pace

The IMF in its Global Economic Outlook Update<sup>11</sup> October 2015 estimates global economic growth at 3.1 per cent in 2015, marginally lower than the 3.4 per cent in 2014, with a gradual pickup in advanced economies and a slowdown in emerging market and developing economies. In 2016, growth is expected to strengthen to 3.6 percent. IMF Managing Director Christine Lagarde in a pre-release statement had stated that a relentless deceleration in the economies of the developing world will cause global growth to slow this year and only pick up a bit more pace in 2016. She warned that emerging economies are likely to see their fifth consecutive year of declining rates of growth as they could be hit by an extended period of low commodity prices.

The United Nation in its World Economic Situation and Prospects 2015 Update Report<sup>12</sup> in May 2015, projects World Gross Product (WGP) to expand at a slightly faster rate than in 2014 at 2.8 per cent in 2015 and 3.1 in 2016, marginally lower than the IMF projections. The World Bank in its Global Economic Prospects Report of June 2015<sup>13</sup> estimates global economic growth at 2.8 per cent in 2015-16, but is expected to pick up to 3.2 percent in 2016-17.

For centuries countries have relied on trade in agricultural and food commodities to supplement and complement their domestic production. The uneven distribution of land resources and the influence of climatic zones on the ability to raise plants and animals have led to trade between and within continents. Changes in consumer taste have encouraged the emergence of global markets and added to the significance of trade.

The WTO in a recent press release<sup>14</sup> has reported that falling import demand and lower commodity prices are likely to push down trade growth prospects in 2015 and 2016. These revisions reflect a number of factors that weighed on the global economy in the first half of 2015, including falling import demand in China, Brazil and other emerging economies; falling prices for oil and other primary commodities; and significant exchange rate fluctuations. World merchandise trade volume is expected to rise 2.8 per cent in 2015, down from the previous estimate of 3.3 per cent. Trade growth in 2016 is likely to pick up to 3.9 per cent, down slightly from the last estimate of 4.0 per cent and still below the average for the last 20 years (1995-2015) of 5 per cent. Although agricultural commodities trade projections are not given separately, agricultural trade is also expected to have declined at least in value terms due to low agricultural commodity prices.

<sup>11</sup><http://www.imf.org/external/pubs/ft/weo/2015/02/pdf/text.pdf>

<sup>12</sup>[http://www.un.org/en/development/desa/policy/wesp/wesp\\_archive/2015wesp\\_full\\_en.pdf](http://www.un.org/en/development/desa/policy/wesp/wesp_archive/2015wesp_full_en.pdf)

<sup>13</sup><https://www.worldbank.org/content/dam/Worldbank/GEP/GEP2015b/Global-Economic-Prospects-June-2015-Global-economy-in-transition.pdf>

<sup>14</sup>[https://www.wto.org/english/news\\_e/pres15\\_e/pr752\\_e.htm](https://www.wto.org/english/news_e/pres15_e/pr752_e.htm)

Emerging economies are likely to see their fifth consecutive year of declining rates of growth as they could be hit by an extended period of low commodity prices.

World merchandise trade volume is expected to rise 2.8 per cent in 2015, down from the previous estimate of 3.3 per cent.

Food markets are likely to continue to remain well stocked on the supply side and less volatile in 2015-16.

2015-16 production forecasts range from 723 million tonnes by ABARES to 734.8 million tonnes by FAO.

The forecasts range from 474 million tonnes by USDA to 493.0 million tonnes by FAO.

All the agencies are forecasting a lower total coarse grain production for 2015-16, ranging from 1,267.2 million tonnes by the USDA to 1,306.5 million tonnes by the FAO.

## II.2 Global Agricultural Commodity Outlook

### II.2.1 Production of most crops to remain high in 2015-16

With the 2014-15 marketing year for most commodities over, all the agencies (FAO, USDA, IGC, and ABARES) have started coming up with supply and demand forecasts for the 2015-16 marketing year for most crops since May 2015. Most agencies currently forecast a modest increase in production of wheat, vegetable oils, oilseed meal and milk and a marginal decline in production of rice, maize, total coarse grains, total oilseeds and sugar in 2015-16 from the previous year. Thus production of most commodities is likely to remain at a record or near record levels for the second consecutive year. Hence, food markets are likely to continue to remain well stocked on the supply side and less volatile in 2015-16. Production estimates for 2014-15 for most crops by all the agencies have more or less converged.

**Wheat:** 2015-16 production forecasts range from 723 million tonnes by ABARES to 734.8 million tonnes by FAO. USDA forecasts 2015-16 world wheat production at a record 732.8 million tonnes, 7.3 million tonnes more than in 2014-15, with larger crops in Russia, Australia, China, and Ukraine more than offsetting lower production in Brazil, Canada, and India. ABARES forecasts 2015-16 production at 723 million tonnes, 9 million tonnes more than in the previous year. Both the USDA and ABARES are forecasting a marginally lower production in the European Union. Among the major exporters, lower production in Canada and Argentina is expected to more than offset by increased production in the Black Sea region (the Russian Federation, Ukraine and Kazakhstan) and the United States. Outside the major exporting countries, increased production in China, the Middle East and North Africa is expected to more than offset reduced production in other countries, including India and Brazil. IGC forecasts global wheat production in 2015-16 at a new record of 727 million tonnes, 7 million tonnes more than in the previous year. FAO forecasts MY 2015-16 wheat production to reach a record 735 million tonnes, 2 million tonnes more than in the previous year, mostly on account of higher production in Australia, China, Morocco, Turkey, Ukraine and the United States.

**Rice:** All the agencies are forecasting a decline in global rice production in MY 2015-16. The forecasts range from 474 million tonnes by USDA to 493.0 million tonnes by FAO. USDA forecasts 2015-16 rice production at 474.0 million tonnes, almost one per cent below the year earlier record. This is the first decline in global rice production since 2009-10. Myanmar, Philippines, India, and the United States account for most of the expected production decline in 2015-16. The decline is attributed to lower average yield mainly due to adverse weather conditions in major producing countries despite a marginal increase in crop area. The IGC forecast of 477 million tonnes is 2 million tonnes below the record 479 million tonnes due to poor monsoon rains. The FAO forecast of 493 million tonnes, marginally lower than the previous record, a second year of stagnant or negative growth. With the exception of Latin America and the Caribbean and Europe, all regions are likely to record a production decline over the previous year.

**Coarse grains:** All the agencies are forecasting a lower total coarse grain production for 2015-16, ranging from 1,267.2 million tonnes by the USDA to 1,306.5 million tonnes by the FAO, a decline of around 23 million tonnes from the 2014-15 record production. Most of the decline is in corn (maize) production, partly offset by higher sorghum (jowar)

and barley production. A sharply reduced EU corn crop and reduced corn production prospects for the United States more than offset increased coarse grain production prospects in Russia, Canada and Turkey. World total coarse grain production would still be the third-highest on record.

World corn production, the most important coarse grain crop, in 2015-16 is forecast to fall by 20 to 30 million tonnes from the previous year by various agencies in the range of 967 million tonnes by the IGC to 1007 million tonnes by the FAO. According to the USDA, compared with 2014-15, harvests in the United States, Brazil, EU and Ukraine are forecast to be lower but higher in China. In the United States, the largest corn producing country in the world, production is forecast to fall by 4.7 per cent in 2015-16 to 344.3 million tonnes, reflecting lower planted area. Corn production in Brazil is forecast to fall by 6 per cent in 2015-16 to 80 million tonnes, largely reflecting an expected 5 per cent decline in average yields. In the European Union, corn production is forecast to fall by 23 per cent in 2015-16 to 58 million tonnes. Corn production in the Black Sea region is also forecast to fall, with lower production in Ukraine more than offsetting a small increase in the Russian Federation. Corn production is forecast to fall by 12 per cent in Ukraine to 25 million tonnes, reflecting a decline in area and a return to average yields. Corn production in China is forecast to increase by 4.3 per cent in 2015-16 to 225 million tonnes, reflecting higher area and yields.

World barley production for 2015-16 is forecast to increase marginally to around 145 million tonnes by ABARES, from 141 million tonnes in the previous year. USDA forecasts world barley production in 2015-16 at 144.6 million tonnes compared to 141.2 million tonnes in 2014-15. Most of the increase is in the United States, Argentina, Morocco and Turkey, partly offset by decline in the EU and Ukraine. FAO forecasts world barley production in 2015-16 at 144.0 million tonnes, up slightly from the previous year.

World sorghum production in 2015-16 is forecast at 68.5 million tonnes by USDA, 4.8 million tonnes more than in 2014-15, with the increase largely confined to the US, Argentina and Mexico. FAO forecast is 66.0 million tonnes, 2 per cent higher than the previous year.

**Oilseeds:** USDA forecasts 2015-16 world total oilseeds production to decline by 5.7 million tonnes from the previous year to 531.0 million tonnes with most of the decline in rapeseed/mustard (down 5.7 million tonnes at 66.2 million tonnes) and cottonseed (down 4 million tonnes to 40.3 million tonnes). ABARES also forecast a decline in total oilseed production in 2015-16 at 523 million tonnes from 537 million tonnes in 2014-15. Most of the decline in total oilseed production is confined to Argentina (soybeans), China, (mostly soybeans), whereas an increase is forecast in Brazil and the United States and India. FAO assessment is that after three years of record breaking harvest, the expansion in world oilseed production is expected to halt in 2015-16. Total oilseed output in 2015-16 is forecast at 523 million tonnes, 2.4 per cent behind the previous year's all-time record production of 535.9 million tonnes.

World soybean production in 2015-16 is forecast at 320.5 million tonnes by USDA, a modest increase of about 1.5 million tonnes from the 2014-15 production. However, all the other agencies are showing a lower soybean production in 2015-16 than in 2014-15, ranging from 313 million tonnes by ABARES to 317 million tonnes by IGC. FAO forecast is 318.2 million tonnes, 0.5 percent decline from the previous year's record production of 319.7

**FAO assessment is that after three years of record breaking harvest, the expansion in world oilseed production is expected to halt in 2015-16.**

USDA forecasts 2015-16 production of rapeseed/mustard (including canola) to fall by 5.7 million tonnes to 66.2 million tonnes, largely because of lower production in the European Union and Canada. ABARES also forecasts world production of rapeseed/mustard to fall by 8 per cent to 66 million tonnes, close to USDA forecast. Production declines are expected for all major producing countries, particularly in major exporting countries such as Canada, Australia, Ukraine and EU. Assuming average planting conditions, rapeseed production in India is forecast to rise by 6 per cent in 2015-16 to 7.5 million tonnes. FAO tentatively forecasts 2015-16 rapeseed/mustard production at 64.3 million tonnes, 10 per cent below the previous year's 71.4 million tonnes. Production is expected to fall in all major producing countries, except in India.

USDA forecasts world sunflower seed production to remain more or less unchanged from the previous year at 40.5 million tonnes in 2015-16. The decline in production in the EU was offset by higher production in other producing countries. ABARES forecasts world sunflower seed production to decline marginally in 2015-16. FAO forecast at 39.9 million tonnes also reflect the same sentiment as production gains in Ukraine and Russian Federation will not be sufficient to offset the decline in the EU, where crops suffered from exceptional heat and dryness. FAO forecasts global groundnut production to expand in 2015-16 supported by production gains in China and the United States, to 38.4 million tonnes compared to 37.4 million tonnes in 2014-15. Cottonseed production in 2015-16 is also forecast to drop sharply to 40.9 million tonnes from the previous year's 44.9 million tonnes, mostly reflecting a sharp decline in China's plantings.

*Vegetable oil:* According to USDA, a record world oilseed crush of 445 million tonnes, led by soybeans, combined with higher palm oil production in Indonesia and Malaysia is expected to increase world vegetable oil production to a new record level of 181.7 million tonnes in 2015-16, an increase of around 5.7 million tonnes from the 2014-15 production. Most of the increase is in palm oil (up 3.7 million tonnes to 65.2 million tonnes) and soybean oil (up 2.2 million tonnes at 50.8 million tonnes), more than offsetting the decline in mustard/rapeseed oil (down 0.9 million tonnes to 26.2 million tonnes) and cottonseed oil (down 0.4 million tonnes to 4.8 million tonnes). ABARES forecast of world vegetable oil production is also the same as by USDA, an increase of 6.7 million tonnes over 2014-15. However, the FAO is less optimistic and forecasts a slight fall in oils/fats production in 2015-16 – following an average annual rise of 4 to 5 percent during the past three years. Continued growth in palm oil production is expected to mostly compensate the declines in rape, sunflower and cottonseed oil. Palm oil production is forecast to increase by 1.7 million tonnes with growth coming almost entirely from further expansion of the mature oil palm area in Indonesia.

*Oilseed meal:* World supply of oilseed meals in 2015-16 is expected to increase because of a record volume of soybean crush. The forecast increase in soybean crush is expected to more than offset expected lower crush volumes of relatively low-protein meal-bearing oilseeds, such as canola and cottonseed. World oilseed meal production in 2015-16 is forecast by ABARES at 301 million tonnes, an increase of 2 per cent. USDA forecast of 2015-16 oilseed meal is 301.9 million tonnes compared to 294.7 million tonnes in 2014-15. Most of the increase is in soybean meal, partly offset by a decline in cottonseed meal and rapeseed meal. However, the FAO is forecasting a decline in protein meal production, including meals of animal and fish origin in 2015-16 at 138.2 million tonnes (protein equivalent basis), 1.6 per cent below the previous year level

The FAO is less optimistic and forecasts a slight fall in oils/fats production in 2015-16 – following an average annual rise of 4 to 5 percent during the past three years.

World supply of oilseed meals in 2015-16 is expected to increase because of a record volume of soybean crush.

Table II.1: Global Production Forecasts for Major Food Commodities (Million Tonnes)

Marketing Year	FAO			USDA			IGC			ABARES		
<b>Wheat</b>												
2013-14	715.6			715.1			714.0			714.0		
2014-15	732.9			725.5			720.0			714.0		
2015-16	734.8	↑	↑	731.6	↑	→	727.0	↑	↑	723.0	↑	↑
<b>Rice</b>												
2013-14	496.7			478.4			478.0			478.0		
2014-15	497.0			478.8			479.0			480.0		
2015-16	500.6	↑	↑	475.8	↓	→	477.0	↓	↓	475.0	↓	NA
<b>Maize</b>												
2013-14	923.7			991.4			997.0			989.0		
2014-15	1011.0			1008.7			1005.0			1005.0		
2015-16	1029.0	↑	NAP	978.1	↓	→	967.0	↓	↓	985.0	↓	→
<b>All coarse grains</b>												
2013-14	1313.6			1281.1			1492.0			1281.0		
2014-15	1331.2			1297.4			1297.0			1295.0		
2015-16	1311.3	↓	↑	1274.3	↓	→	1269.0	↓	↑	1277.0	↓	↑
<b>Soybeans</b>												
2013-14	283.4			283.2			285.0			NA		
2014-15	320.8			319.4			322.0			322.0		
2015-16	318.4	↓	↑	320.5	↑	↑	317.0	↓	↓	313.0	↓	↑
<b>Total Oilseeds</b>												
2013-14	513.0			506.0			NA			506.0		
2014-15	542.3			536.7			NA			537.0		
2015-16	NA	NAP	NAP	531.0	↓	↑	NA	NAP	NAP	523.0	↓	↑
<b>Total veg oils</b>												
2013-14	202.7			171.0			NA			171.0		
2014-15	209.6			176.0			NA			175.0		
2015-16	NA	NAP	NAP	181.7	↑	↑	NA	NAP	NAP	181.7	↑	↑
<b>Oilseed Meal</b>												
2013-14	NA			278.2			NA			282.0		
2014-15	NA			294.7			NA			294.0		
2015-16	NA	NAP	NAP	301.9	↑	↓	NA	NAP	NAP	301.0	↑	↑
<b>Sugar (Raw equivalent)</b>												
2013-14	180.6			175.6			NA			183.0		
2014-15	181.0			174.3			NA			183.0		
2015-16	NA	NAP	NAP	173.4	↓	NAP	NA	NAP	NAP	182.0	↓	↓
<b>Milk</b>												
2013-14	765.1			551.8			NA			NA		
2014-15	788.5			571.9			NA			NA		
2015-16	804.5	↑	NAP	579.6	↑	NAP	NA	NAP	NAP	NA	NAP	NAP
<span style="color: blue;">→</span> No change from previous forecast <span style="color: blue;">↑</span> Up from previous forecast <span style="color: blue;">↓</span> Down from previous forecast <span style="color: red;">→</span> No change from previous year <span style="color: red;">↑</span> Up from previous year <span style="color: red;">↓</span> Down from previous year												

Sources : See end note to section

**Pulses:** Pulse production outlook for 2015-16 in major exporting countries presents a mixed picture, with a likely overall increase in production in the US, Canada, and Australia offset by likely lower production in Myanmar.

Agriculture and Agri-Food Canada (AAFC) in its latest report<sup>15</sup> forecasts 2015-16 dry pea production in Canada to increase by 7.4 per cent to 3.7 million tonnes, but below the record production of 3.96 million tonnes in 2013-14, due to a marginal increase in harvested area and a slight improvement in yield. US dry pea production for 2015-16 is forecast by AAFC to rise by 3 per cent to a near record 0.8 million tonnes, mainly due to an increase in planted area.

<sup>15</sup>[http://www.agr.gc.ca/resources/prod/doc/misb/mag-gam/fco-ppc/fco-ppc\\_2015-06-18-eng.pdf](http://www.agr.gc.ca/resources/prod/doc/misb/mag-gam/fco-ppc/fco-ppc_2015-06-18-eng.pdf)

**Pulse production outlook for 2015-16 in major exporting countries presents a mixed picture**

Late July – early August flooding in Myanmar is likely to delay harvesting of pulse crops by several months.

ABARES forecasts world sugar production in MY 2015-16 to decline marginally from the 2014-15 level at 182 million tonnes.

Canadian lentil (masur) production for 2015-16 forecast at 2.15 million tonnes, an increase of 8.2 per cent over 2014-15, due to an increase in harvested area. In the U.S., the area seeded to lentils for 2015-16 is forecast by the USDA at 0.4 million acres, an increase of 37 per cent over 2014-15. Production is forecast at 0.21 million tonnes, up sharply from 2014-15.

Canadian chickpea (chana) production for 2015-16 is forecast at 115,000 tonnes a marginal decline over the 2014-15 production of 131,000 tonnes. U.S. chickpea planted area in 2014-15 is estimated by the USDA to decline below 200,000 acres, for the first time since 2011-12. Assuming normal yield 2015-16 production is forecast at 130,000 tonnes, up marginally from 2014-15 but below the record production of 160,000 tonnes in 2014-15.

Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) in its recent crop report (September 2015)<sup>16</sup> forecasts a significant increase in most pulse production except field peas. The increase was mainly due to area increase. Table II.2 illustrates the area and production trend:

**Table II.2: Trend in Australian pulse production**

Crop	Area (000 ha)			Production (000 tonnes)			Change (%)
	2013-14	2014-15 s	2015-16 s	2013-14	2014-15 s	2015-16 f	
Chickpeas	508	425	662	629	555	990	78.4
Faba beans	152	164	259	328	284	419	47.5
Field peas	245	237	235	342	290	288	-0.7
Lentils	170	189	213	254	242	321	32.6
Lupins	387	443	487	626	549	735	33.9

s - ABARES estimate; f - ABARES forecast

**Beans and pulses** are one of Burma's biggest agricultural exports, only second to rice. India, the world's largest producer and consumer of pulses, relies heavily on Burma for its pulse requirements and accounts for about 80 per cent of Burma's pulse exports. Late July – early August flooding in Myanmar is likely to delay harvesting of pulse crops by several months, according to industry sources. Crops ordinarily grown after the year's rice harvest will not be sown until at least December, delaying exports. Several varieties of mung bean, including the popular green gram, as well as pigeon peas are among the major pulses grown and exported in Burma, which has been damaged by heavy rains. As local consumption of beans and pulses is comparatively low in Burma, exports will not need to be halted in order to meet local demand, as is the case with rice. The delay in bean and pulse production is likely to have effects well into the next year, as pulse farmers in major producing regions in the country will struggle to meet commitments to Indian traders. Prices, in turn, are expected to rise. Although FAS/USDA in April was forecasting MY 2015-16 pulse production in Myanmar at 5.3 million tonnes against 5.1 million tonnes in 2014-15, the flood damage is likely to lower production.

**Sugar:** ABARES forecasts world sugar production in MY 2015-16 to decline marginally from the 2014-15 level at 182 million tonnes, which if realized would be the fourth-highest on record. Production is expected to remain more or less unchanged in India and Brazil. Forecast falls in production in China and Europe are expected to be partially offset by forecast increase in Thailand, Australia, and the United States. FAS in May 2015 forecast

<sup>16</sup>[http://data.daff.gov.au/data/warehouse/aucrpd9abcc003/aucrpd9abcc201509/AustCropRrt20150908\\_v1.0.0.pdf](http://data.daff.gov.au/data/warehouse/aucrpd9abcc003/aucrpd9abcc201509/AustCropRrt20150908_v1.0.0.pdf)

global sugar production in MY 2015-16 at 173.4 million tonnes, about one million tonnes below the 2014-15 production. 2014-15 world sugar production estimate by FAO is 181 million tonnes. It has not yet come out with a forecast for 2015-16, although indicated that production is likely to be somewhat lower than in 2014-15.

**Milk:** FAO forecasts world milk production in 2015 to grow by 1.5 per cent to 800.7 million tonnes. While Asia is expected to account for most of the increase, production should rise in all regions except Oceania. Output in India, the world's largest milk producing country, is expected to expand by 4.3 percent, or 6.1 million tonnes, to 147.8 million tonnes. Expansion in herd size and improved productivity are important engines underpinning production growth in the country. Urbanization and rising incomes are fuelling milk and milk products demand in India. Increased output is also anticipated in China, Pakistan and Turkey, spurred by steady growth in consumer demand. Rising incomes and strong regional and international demand and falling feed cost have promoted growth in dairy production in several countries.

## II.2.2 Consumption growth modest

**Wheat:** All global agencies are forecasting an increase in global wheat consumption in 2015-16 over 2014-15. USDA forecasts world wheat consumption in 2015-16 at 716.4 million tonnes against 707.2 million tonnes 2014-15, an increase of 9.2 million tonnes. The largest increase is in the European Union, the United States, Russia, and India, whereas a marginal or no decline in consumption is forecast in most other countries except China, where a 1.5 million tonne decline is forecast. Wheat feed and residual use is up by 2 million tonnes at 138.1 million tons, with half of the increase in feeding coming from the EU as relative prices for wheat are becoming increasingly attractive to feed manufacturers.

FAO forecasts total world wheat utilization in 2015-16 at 727.0 million tonnes, a significant increase over the 2014-15 estimate of 713 million tonnes. Wheat use for direct human consumption is expected at 491 million tonnes, one per cent higher than in 2014-15. Globally, per capita wheat consumption is estimated to remain unchanged at 67 kg. Wheat feed use in 2015-16 is forecast to grow by 4.2 per cent to 144 million tonnes, largely driven by stronger demand in Asia particularly China, North America and the EU. IGC forecast a 12 million tonnes increase in consumption at 719 million tonnes, on larger projected feed use, which is seen as the second highest level ever. According to ABARES report, world consumption of wheat is forecast to rise by 1 per cent in 2015-16 to 715 million tonnes, largely reflecting increased human consumption. Human consumption accounts for around 70 per cent of total world wheat use and increases broadly in line with world population. Use of wheat for feed is forecast to increase by 3 per cent in 2015-16, following a 5 per cent increase in 2014-15. Supplies of feed-quality wheat are expected to remain plentiful in the European Union and the Black Sea region. Reduced availability of feed alternatives such as barley and corn is expected to further support use of wheat for feed in the European Union. In the United States, the supply and use of wheat for feed are expected to increase because of some quality issues with the winter wheat harvest

**Rice:** FAO forecasts total rice utilization in 2015-16 to increase by 5.6 million tonnes to 500.0 million tonnes. Rice consumption for food use in 2015-16 is expected to grow by 5.3 million tonnes to a record 402.3 million tonnes, leading to a minute increase in world per capita consumption, estimated at 54.7 kg. USDA also forecasts total rice utilization in MY 2015-16 to outpace production at 487.5 million tonnes, 3.0 million tonnes above the 2014-15 level. Most of the increase will be in China. ABARES also forecasts 2015-16 world rice

**FAO forecasts world milk production in 2015 to grow by 1.5 per cent to 800.7 million tonnes.**

**All global agencies are forecasting an increase in global wheat consumption in 2015-16 over 2014-15.**

**FAO forecasts total rice utilization in 2015-16 to increase by 5.6 million tonnes to 500.0 million tonnes.**

**FAO forecasts total coarse grain utilization in 2015-16 to increase by 11 million tonnes to 1,303.0 million tonnes**

**Maize continues to account for the bulk of industrial usage in coarse grains**

**Consumption of corn as animal feed and for industrial uses is forecast to increase marginally to 605 million tonnes and 380 million tonnes respectively.**

consumption to outpace production at a record 488 million tonnes, 3 million tonnes more than in 2014-15.

**Coarse grains:** USDA forecasts global total coarse grain consumption in 2015-16 to decline by about 3 million tonnes to 1,275.5 million tonnes. An increase in consumption in the U.S., Brazil, China, and Turkey will be mostly offset by a decline in consumption in the EU, and Ukraine. According to ABARES, world total coarse grain consumption is forecast to increase by 1 per cent in 2015-16 to 1,279 million tonnes, close to the USDA forecast. FAO forecasts total coarse grain utilization in 2015-16 to increase by 11 million tonnes to 1,303.0 million tonnes, which includes 742 million tonnes for feed use, 204 million tonnes for food use and 357 million tonnes for other uses including industrial use. IGC also forecasts a decline in total coarse grain consumption from 1,272 million tonnes in 2014-15 to 1,267 million tonnes in 2015-16.

**Maize:** IGC observes that amid low prices and strong demand for meat and starch, world maize consumption in 2015-16 is forecast to be maintained at a historically high level of 970.4 million tonnes, although below the record consumption of 980.3 the previous year. Maize continues to account for the bulk of industrial usage in coarse grains, at around 267 million tonnes, with a major share used just for the production of fuel ethanol, mostly in the United States. A strong world demand for starch is seen to boost the use of maize for starch production to around 100 million tonnes, a record, with most of the increase in China. According to USDA, among major coarse grains, world corn consumption in 2015-16 is forecast to decline by around 8 million tonnes to 980.8 million tonnes. Most of the decline is in the EU, and the Ukraine, offsetting the increase in Brazil, Canada, Egypt, Russia and the United States. World corn consumption is forecast by ABARES to increase by 1 per cent in 2015-16 to 986 million tonnes. Consumption of corn as animal feed and for industrial uses is forecast to increase marginally to 605 million tonnes and 380 million tonnes respectively. Most of the growth in consumption is forecast to come from the Brazil, China and Brazil. Corn consumption in 2015-16 in many of the other large consuming countries is forecast to be either lower or largely unchanged from 2014-15.

According to ABARES, among major consumers, corn consumption in the United States is forecast to increase by 1 per cent in 2015-16 to 304 million tonnes because of a small forecast increase in demand for ethanol. Nearly all unleaded petrol in the US is mixed with ethanol from corn. Corn consumption in China is forecast to increase by 2 per cent in 2015-16 to 220 million tonnes, reflecting higher industrial demand. Consumption of corn as feed in China is forecast to be largely unchanged in 2015-16 at around 150 million tonnes. Corn consumption in Brazil is forecast to rise by 2 per cent to 58 million tonnes because of increased demand for feed from the intensive livestock sector.

**Barley:** USDA forecasts world barley consumption in 2015-16 to increase to 145.0 million tonnes from 141.2 million tonnes in 2014-15. However, according to ABARES, world barley consumption is forecast to fall by 1 per cent in 2015-16 to 139 million tonnes, reflecting lower feed demand.

**Sorghum:** USDA forecasts world sorghum consumption to increase by 3.2 million tonnes to 67.7 million tonnes in 2015-16. Most of the increase is in Australia, China, and Mexico, more than offsetting the decline in Nigeria and Sudan.

**Oilseeds:** USDA forecasts world oilseed crush in 2015-16 to increase to a record 447.1 million tonnes from 438.5 million tonnes in 2014-15. Almost the entire increase is in soybeans estimated at 272.4 million tonnes, an increase of 12.0 million tonnes over 2014-

15, largely offsetting the crush decline in other oilseeds, particularly in rapeseed/mustard and cottonseed.

**Vegetable oil:** World vegetable oil consumption is forecast by USDA to rise by about 7 million tonnes in 2015-16 from the 2014-15 level to 178.2 million tonnes, a record high. The forecast higher use of vegetable oils in 2015-16 is expected to be driven by a 4.7 million tonne increase in palm oil to 63.5 million tonnes, and soybean oil by around 2.2 million tonnes to 50 million tonnes, partially offset by a marginal decline in consumption of rapeseed oil, cotton seed oil, and sunflower seed oil. ABARES forecasts world vegetable oil consumption in 2015-16 to increase by 4 per cent to 180 million tonnes, including 136 million tonnes for food use. Consumption is expected to be driven by China, India due to expected increase in income leading to higher consumption, and larger industrial use of palm oil in Indonesia and Malaysia. Higher consumption is also forecast in the U.S. and Indonesia, World consumption of vegetable oil for industrial purposes (including bio diesel) is expected to increase by 2 million tonnes in 2015-16 to 44 million tonnes. This largely reflects expected higher bio diesel production in the United States, Indonesia, and Malaysia.

FAO forecasts 2015-16 oils/fats (including animal fats and fish oil) utilization to expand to 211.8 million tonnes from 204.6 million tonnes in 2014-15. Soy oil and palm oil are expected to dominate overall consumption growth, thanks to record supplies and price discounts relative to other vegetable oils. Contrary to recent years, rising demand from the biofuel sector is expected to be less of a driving factor and the increase is mostly due to food use. Developing nations in Asia, particularly India will continue to drive growth in food use of vegetable oils.

**Oilseed meal:** USDA forecasts world oilseed meal consumption (excluding fish meal) to increase to 298.6 million tonnes in 2015-16 compared to 288.9 million tonnes in 2014-15. ABARES forecast is close at 299 million tonnes, an increase of 3.5 per cent over 2014-15. FAO forecasts oil meal and other animal-based protein meal in 2015-16 to increase by 3.4 per cent to 136.8 million tonnes (on a protein equivalent basis).

**Sugar:** World sugar consumption is forecast by ABARES to rise by around 2 per cent in 2015-16 to 184.7 million tonnes in response to lower world sugar prices. Consumption is expected to exceed production for the first time since 2009-10. Forecast lower sugar prices are expected to make sugar more attractive to consumers than alternative sweeteners ((high intensity sweeteners and high fructose corn syrup). Additionally, an expected increase in food processing in developing Asian countries, particularly China, India and Indonesia is expected to increase sugar demand. USDA in its May sugar report forecasts global sugar consumption for 2015-16 at a record 173.4 million metric tons (raw value) equalling production which is forecast to decline for the third consecutive year. Most of the increase is in Asian countries, particularly India. FAO in its latest issue of the Food Outlook report has not included the customary assessment of the world sugar market.

### II.2.3 Global agricultural commodity trade outlook mixed

**Wheat:** ABARES forecasts global wheat trade to decrease by 4 per cent in 2015-16 to 152 million tonnes. This reflects increased supplies in many importing countries, which is expected to reduce import demand. FAO forecast is 150 million tonnes, a decline of 5.8 million tonnes from the previous year. The IGC forecasts wheat trade to decline to 149 million tonnes from 153 million tonnes in 2014-15, mainly due to lower imports in Near East Asia and North Africa. The USDA forecast is more optimistic at 160.5 million

World vegetable oil consumption is forecast by USDA to rise by about 7 million tonnes in 2015-16 from the 2014-15 level to 178.2 million tonnes, a record high.

World sugar consumption is forecast by ABARES to rise by around 2 per cent in 2015-16 to 184.7 million tonnes in response to lower world sugar prices.

ABARES forecasts global wheat trade to decrease by 4 per cent in 2015-16 to 152 million tonnes.

**Global rice trade in 2015-16 is forecast by USDA at 42.0 million tonnes, a marginal decline over 2014-15.**

**Rice imports by China is forecast to increase marginally to 4.7 million tonnes and will remain as the largest importer.**

**USDA forecasts a decline in global coarse grain trade in MY 2015-16 to 169.6 million tonnes from the record exports of 172.1 million tonnes in 2014-15.**

tonnes, a decline of only one million tonnes over 2014-15. The forecast decline largely reflects lower imports by Thailand, Philippines, Morocco, Turkey, and Iran, offsetting the increase in imports by Brazil, China, Egypt, and Indonesia.

The largest decline in exports is expected to be in Canada and the EU, offsetting the increase from Australia, Argentina, Russia, Ukraine, and Kazakhstan. Exports from the United States is expected to increase marginally to 23 million tonnes.

*Rice:* Global rice trade in 2015-16 is forecast by USDA at 42.0 million tonnes, a marginal decline over 2014-15. India's rice exports are forecast to decline by 2 million tonnes at 9.5 million tonnes, mostly offset by larger exports from Thailand (9.5 million tonnes), Vietnam (7 million tonnes), and Pakistan (4.5 million tonnes). Thus Thailand will vie with India for the largest rice exporter position in 2015-16. Exports from the United States are forecast almost unchanged from the previous year at 3.25 million tonnes.

Rice imports by China is forecast to increase marginally to 4.7 million tonnes and will remain as the largest importer. Nigeria will be the second largest importer importing 3.0 million tonnes, despite a significant decline from the 4 million tonnes imported in 2014-15. Other major importers are Iran (1.6 million tonnes), Iraq (1.2 million tonnes), Philippines (1.8 million tonnes), Saudi Arabia (1.55 million tonnes) and Indonesia (1.3 million tonnes).

FAO forecasts world rice trade in 2015-16 at a near record 45 million tonnes, one million tonnes more than in 2014-15. The anticipated increase in trade is attributed to larger imports by Indonesia, the Democratic Republic of Korea and the Philippines. Imports by African countries, especially Ghana and Nigeria, are also forecast to rise to compensate for lower production. The IGC forecast supports the USDA assessment, with trade in 2015-16 forecast at 42 million tonnes, which although historically high, is 1 million tonnes below the 2014-15 trade, with most of the decline in imports confined to Africa and Far East Asia. Indian exports are forecast to decline to 8.2 million tonnes in 2016 from 11.1 million tonnes in 2015. Thailand is forecast to remerge as the world's largest rice exporter, replacing India. Exports from Vietnam is forecast to increase marginally to 6.5 million tonnes.

*Coarse grains:* USDA forecasts a decline in global coarse grain trade in MY 2015-16 to 169.6 million tonnes from the record exports of 172.1 million tonnes in 2014-15, with most of the decline in imports confined to China, Iran, Mexico, and Vietnam. Imports are forecast to increase significantly in the EU, Japan and Saudi Arabia. Most of the decline in exports is expected to be in Argentina, the United States, and Ukraine, more than offsetting the significant increase in exports from Brazil. Although maize trade is expected to increase marginally to 127.7 million tonnes, barley trade is forecast to decline sharply to 25.3 million tonnes in 2015-16 from 29.8 million tonnes a year earlier. Global sorghum trade is also forecast to increase marginally to 13.9 million tonnes in 2015-16.

ABARES forecasts world trade in coarse grains to decline by 2 per cent in 2015-16 to 168 million tonnes, with a small increase in corn trade more than offset by a decline in barley trade. World trade in corn is forecast to increase by 2 per cent in 2015-16 to 123 million tonnes, largely because of a significant increase in imports into the EU and Saudi Arabia. World trade in barley is forecast to decline by 17 per cent in 2015-16 to 26 million tonnes as a result of lower supplies in the major exporting regions of the EU, the Black Sea region and Canada. Exports to Saudi Arabia and China, the two largest barley importing countries, are forecast to fall a combined total of around 2.5 million tonnes.

FAO also forecasts a decline in world coarse grain trade in 2015-16 by 6 million tonnes to

169 million tonnes from the record high of around 175 million tonnes in the previous year. Among the major coarse grains, world trade in maize is expected to fall to 126 million tonnes, down 1.6 per cent from the previous year's record, but still the second highest volume ever. Exports of barley are forecast to decline by 13 per cent in 2015-16 from the 2014-15 exceptionally high level of 29 million tonnes to 25.5 million tonnes, close to forecast by other agencies. Trade in sorghum is put at 12.5 million tonnes, down 2.4 per cent year-on-year.

**Pulses:** Pulse export outlook for 2015-16 provides a mixed picture. Canadian dry pea exports are forecast to decrease marginally to 2.9 million tonnes from 3 million tonnes in 2014-15, with India and China continuing to be Canada's top markets. The US has been successful in exporting small amounts of dry peas to China and India and it is expected the US will continue to expand its market share in 2015-16.

Canadian exports of lentil (masur) are expected to be similar to 2014-15 at 1.75 million tonnes. India, the EU-27 and Turkey are expected to remain the top three export markets. Lentil exports from the U.S., a relatively smaller producer are likely to remain more or less unchanged. The main U.S. export markets for lentils are expected to continue to be India and the EU.

Canadian exports of chickpeas (chana) are forecast to be similar to 2014-15 at 70,000 metric tonnes. The EU-27, the U.S., the Middle East and the Indian subcontinent are traditionally the main markets U.S. exports, albeit small, are likely to remain more or less unchanged. 2015-16 pulse exports from Australia, consisting mainly of chickpeas, lentils and field peas are expected to increase due to expected record production.

Myanmar exports mainly five varieties of beans and pulses (black gram, green gram, pigeon beans, kidney bean, and cow pea). Despite initial optimism, bean and pulse exports from Myanmar are forecast to decline in 2015-16 in the aftermath of widespread flooding in late July and early August. The flooding is likely to bring down production, cause quality problems and higher prices. Exports are likely to be lower than the MY 2014-15 exports of 1.35 million tonnes.

USDA forecasts global vegetable oil exports to increase by about one million tonnes to 75.6 million tonnes in MY 2015-16, with most of the increase in palm oil forecast to increase to 44.6 million tonnes from 42.3 million tonnes. Soybean oil exports are forecast to increase marginally to 9.5 million tonnes. The increase in import will be mostly in India and China. FAO forecasts 2015-16 oils and fats (including fats of animal origin) trade to increase by 1.9 per cent to 114.2 million tonnes in 2015-16.

**Oilseed meal:** World oilseed meal exports (does not include fish meal) in 2015-16 are forecast by USDA to increase by around 3 million tonnes to 86.0 million tonnes, with most of the increase in soybean meal. FAO forecast (which include fish meal) for 2015-16 is 87.1 million tonnes, an increase of 1.7 million tonnes.

**Sugar:** World sugar exports are forecast to increase by 3.2 per cent to 61.0 million tonnes in 2015-16, largely reflecting expected increase in supplies available for export in Thailand Australia and India. Imports will be higher in China, Russia.

**Pulse export outlook for 2015-16 provides a mixed picture.**

**The US has been successful in exporting small amounts of dry peas to China and India and it is expected the US will continue to expand its market share in 2015-16.**

**World sugar exports are forecast to increase by 3.2 per cent to 61.0 million tonnes in 2015-16.**

According to USDA, global wheat ending stocks in 2015-16 are forecast to increase to a record level of 228.5 million tonnes from 212.1 million tonnes in 2014-15.

With world production falling short of utilization, world rice inventories ending in 2016 are forecast by the FAO at 164.3 million tonnes, a decline of 6 million tonnes from the previous year.

With global oilseed production gains outpacing consumption growth, the surplus is expected to replenish stocks.

End 2015-16 vegetable oil stocks are forecast by USDA to decline marginally to 18.82 million tonnes from 19.12 million tonnes in 2014-15.

World closing stocks of sugar are forecast to decline marginally to 78.1 million tonnes in 2015-16 from 80.8 million tonnes in 2014-15.

#### II.2.4. Most commodity stocks up

**Wheat:** According to USDA, global wheat ending stocks in 2015-16 are forecast to increase to a record level of 228.5 million tonnes from 212.1 million tonnes in 2014-15. Most of the increase is in China, the EU and the U.S. In India, stocks are forecast to plummet to 11.9 million tonnes from 17.2 million tonnes in the previous year, a continuous decline since 2012-13. ABARES forecast world closing stocks of wheat to increase by 4 percent to 217 million tonnes. FAO forecast is 206 million tonnes, an increase of 9.3 per cent over 2014-15 and IGC forecast is 211 million tonnes.

**Rice:** With world production falling short of utilization, world rice inventories ending in 2016 are forecast by the FAO at 164.3 million tonnes, a decline of 6 million tonnes from the previous year. Much of the projected decline is in India and Thailand. In October 2015, USDA revised MY 2015-16 rice ending stocks forecast further downward to 88.3 million tonnes, a decline of 13.5 million tonnes from the 2014-15 level. The 2015-16 ending stocks of rice forecast by IGC is 95 million tonnes, a decline of 11 million tonnes from the 2014-15 stocks. ABARES forecast of rice stocks by the end of MY 2015-16 is 93 million tonnes, a decline of 13 million tonnes from the previous year.

**Coarse grains:** USDA projects 2015-16 global coarse grain ending stocks to decline by around 8 million tonnes from the previous year's record carryover stocks of 231.2 million tonnes to 222.9 million tonnes, but still the second largest. The decline is mostly in maize. By country, the increase in China is more than offset by decline in other countries, particularly in the United States, Brazil, and the EU. ABARES projects world closing stocks of coarse grains in 2015-16 to decline by 0.4 percent to 242 million tonnes, but still the second largest. The decline is mostly in maize and barley. FAO forecast of world coarse grain ending stocks in 2015-16 is 267.6 million tonnes, a marginal decline from the 2014-15 record stocks of 269.2 million tonnes.

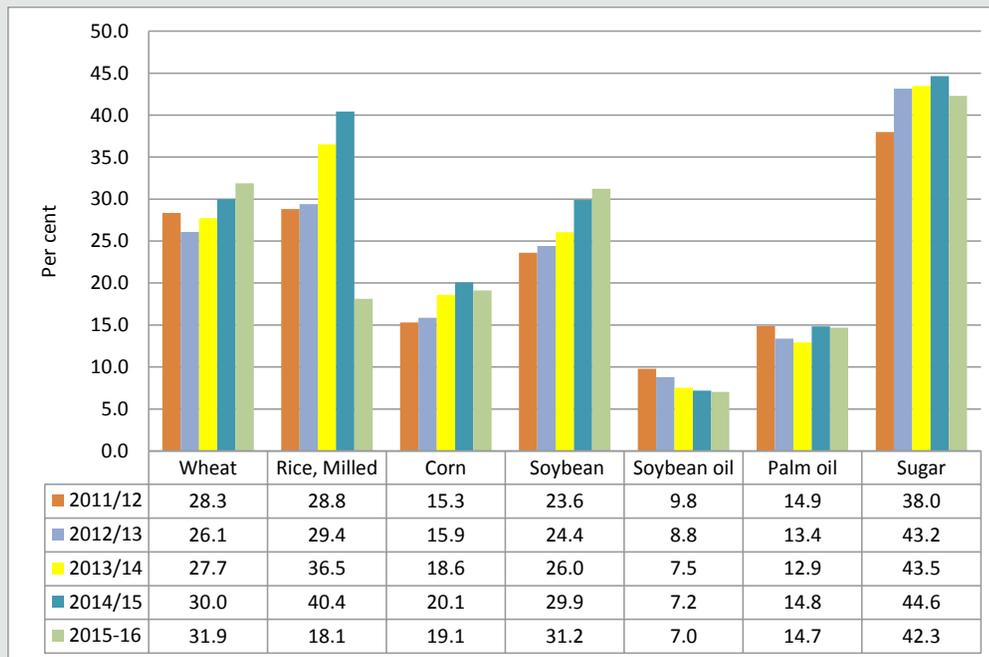
**Oilseed:** With global oilseed production gains outpacing consumption growth, the surplus is expected to replenish stocks. USDA forecasts global total oilseed ending stocks in 2015-16 to surge to a record 96.3 million tonnes from 91.9 million tonnes in 2014-15. Most of the increase in soybeans, projected at 85.1 million tonnes, compared to 78 million tonnes a year ago with the increase largely confined to the United States and South America.

**Vegetable oil:** End 2015-16 vegetable oil stocks are forecast by USDA to decline marginally to 18.82 million tonnes from 19.12 million tonnes in 2014-15. The increase in palm oil stocks in Indonesia and Malaysia is likely to be more than offset by the decline in rapeseed oil and sunflower seed oil. ABARES forecasts closing stocks of vegetable oils in 2015-16 to decline by 4 per cent to 18 million tonnes, close to USDA forecast. FAO also forecasts global inventories of oils/fats to fall in 2015-16.

**Sugar:** World closing stocks of sugar are forecast to decline marginally to 78.1 million tonnes in 2015-16 from 80.8 million tonnes in 2014-15. This is a result of world consumption being forecast to exceed world production for the first time since 2009-10. However, stocks are expected to be 18 per cent above the ten-year average to 2013-14 of 66.2 million tonnes.

With the exception of wheat and soybeans, stocks-to-use ratio (a convenient measure of supply and demand interrelationships of commodities measured by the level of carryover stocks for a commodity as a percentage of total use of the commodity) for all other commodities is forecast to show a decline. The most significant decline is in the case of rice.

Figure II.1: Stocks-to-Use Ratio of Major Ag Commodities

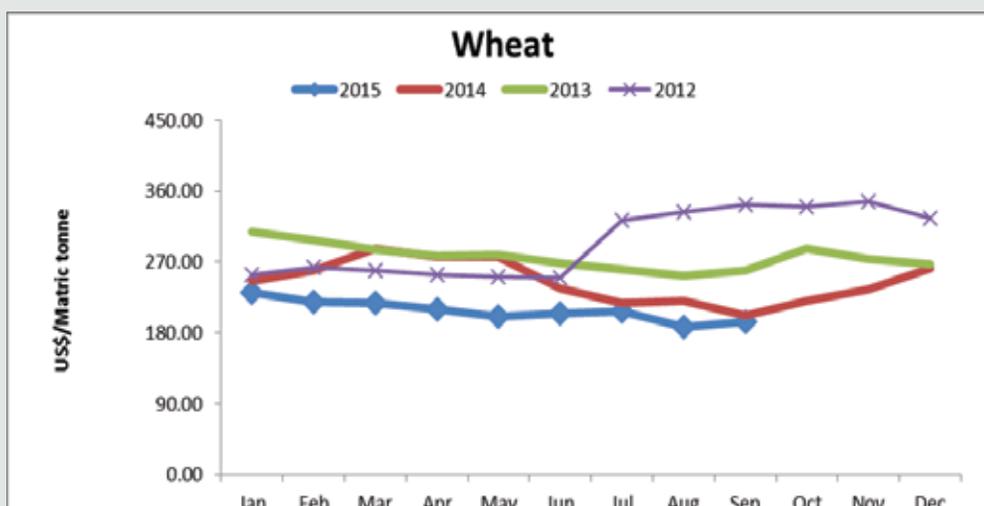


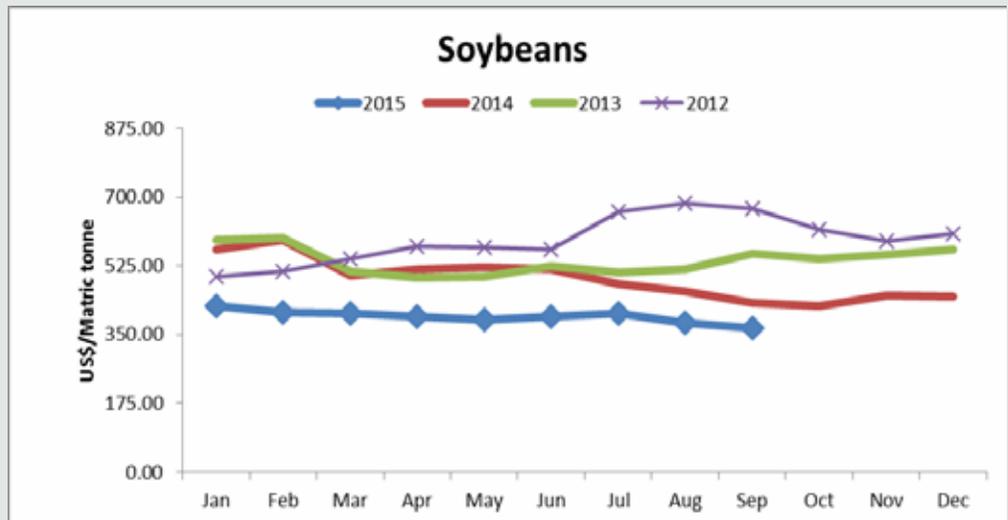
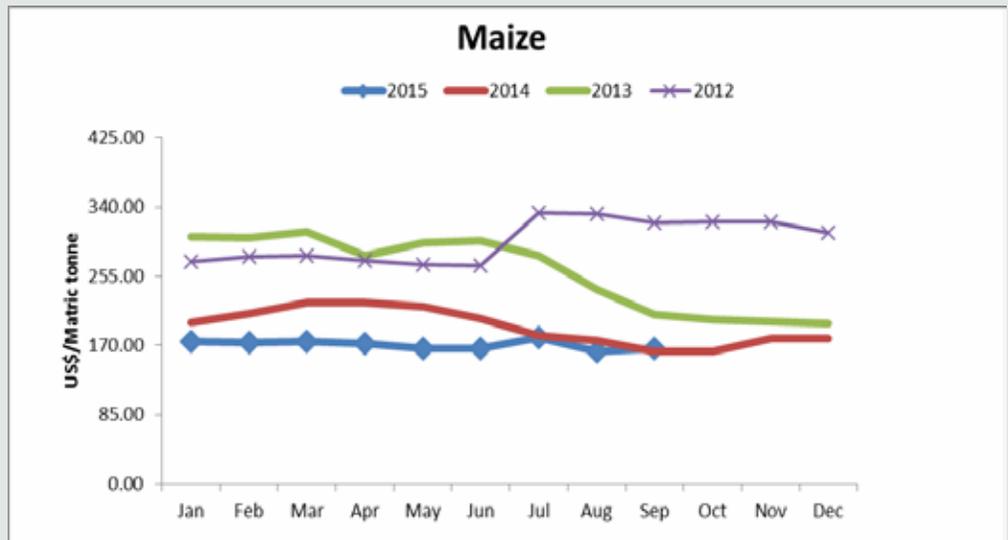
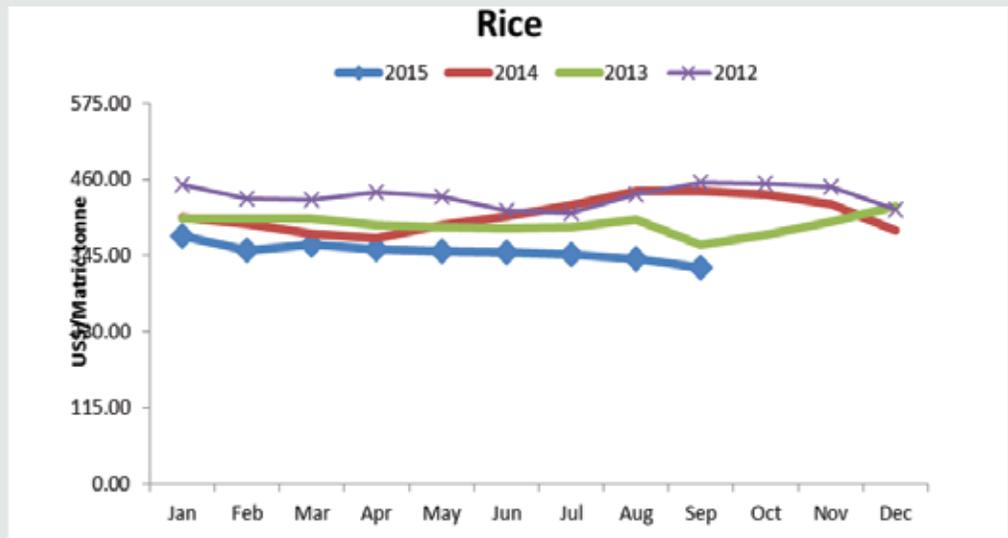
Source: USDA and ABARES (sugar)

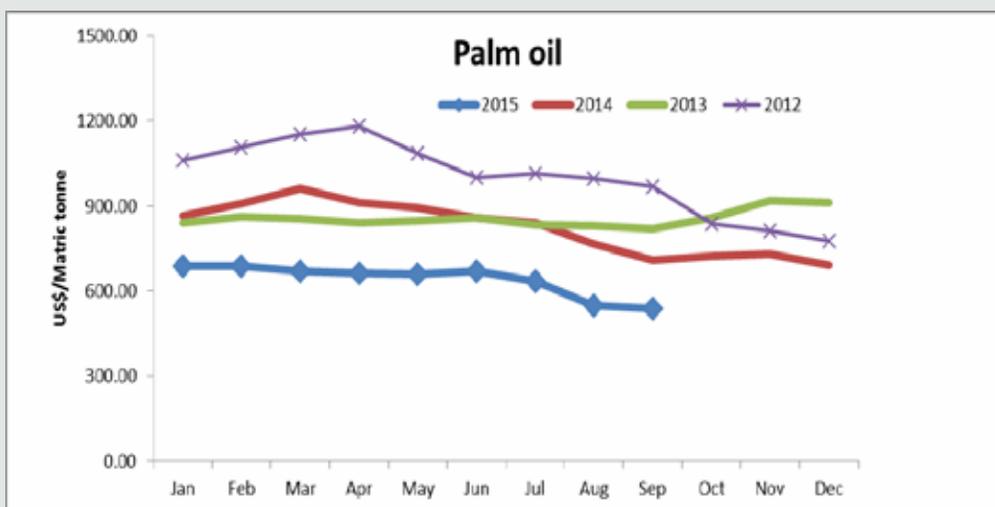
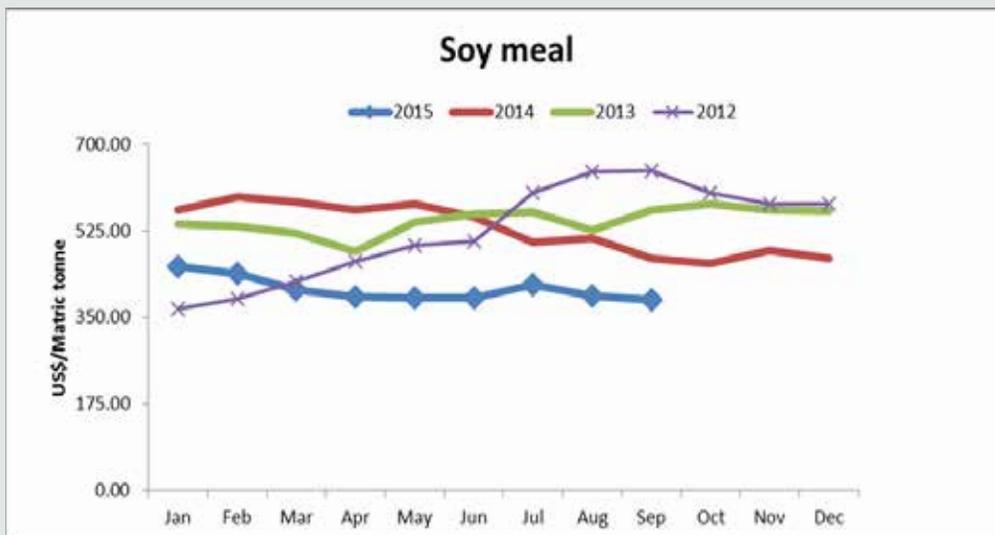
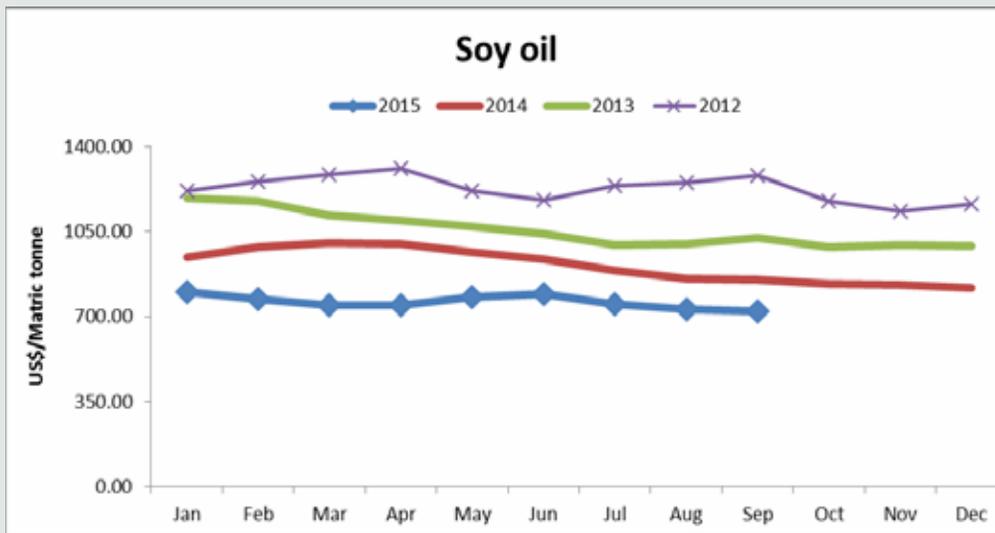
### II.2.5 Prices in 2015 significantly below the 2014 level

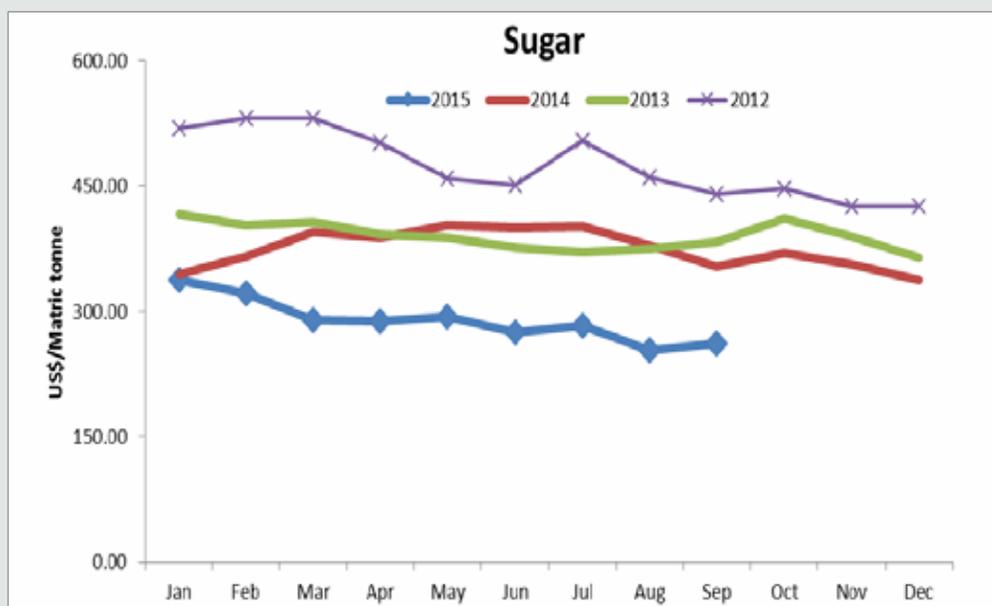
All commodity prices through September this year have remained well below the prices a year ago. Record productions, large carryover stocks in 2014-15 combined with an optimistic production outlook for most crops in 2015-16 are weighing on the international prices of most commodities. However, international indicative prices have shown some strengthening in recent months in the case of most commodities.

Figure II.2: Global price trend of major commodities (US\$/Metric Tonne)









**Source:** World Bank  
[http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/pink\\_data\\_m.xlsx](http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/pink_data_m.xlsx)

The FAO Food Price Index averaged 156.3 points in September 2015, up one point from its sharply reduced August value, but still 18.9 percent less than one year ago. The quotations of sugar and dairy products firmed last month, while those of the other commodities remained close to, or slightly below, their respective August levels.

The FAO Cereal Price Index averaged 154.8 points in September, nearly unchanged from August and 13.1 percent down year-on-year. International cereal prices have been under downward pressure since the beginning of 2015, amid large inventories and generally good crop prospects. Wheat is now over 20 percent cheaper than in September last year, following this season’s record production. Influenced by an expected decline in world maize production, coarse grains quotations have been more resilient, subsiding only 1.4 percent compared to September 2014. Despite prospects of crop shortfalls, rice quotations have continued to slide, albeit by only 1.7 percent in September, extending the declining trend to a thirtieth consecutive month.

The FAO Vegetable Oil Price Index averaged 134.2 points in September, marginally below the previous month (0.5 percent) but the lowest level since March 2009. The September fall was mainly driven by lower palm oil quotations, reflecting abundant export availabilities, especially in Malaysia where a weak currency is sustaining exports. International soy oil prices also declined, on ample supplies in South America and a favourable 2015/16 global production outlook. Meanwhile, prices of rape and sunflower seed oils increased somewhat on concerns about lower than anticipated global availabilities.

The FAO Dairy Price Index averaged 142.3 points in September, up 6.8 points (5 percent) from August. The rise followed a sharp fall in the Index in the previous month. While the prices of all dairy commodities firmed, those of milk powders exhibited the largest increase. This was associated mainly with higher quotations from New Zealand, where a substantial reduction in pay-outs has caused farmers to scale-back production.

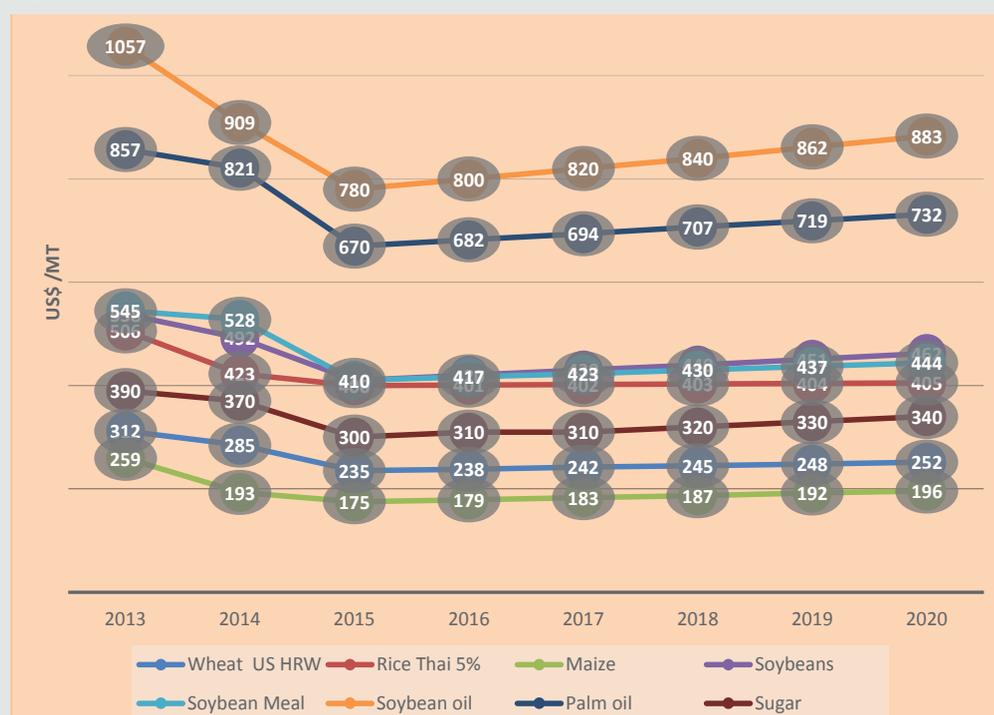
## II.2.6 Most commodity prices to firm up modestly in 2015-16

Most agencies forecast a tightening in international prices of most agricultural commodities in 2015-16. According to World Bank Commodity Markets Outlook Report, July 2015<sup>17</sup>, agricultural commodity prices are expected to experience a moderate increase in 2015-16. This report has provided a long-term forecast of commodity prices, which are summarized in Table II.3, and Figure II.3. However, a number of assumptions, along with associated risks, underpin the food commodity price projection which include occurrence of El Nino, global prices of petroleum products, government trade policies and biofuel policies.

**Table II.3: World Bank Commodities Price Forecasts, Nominal U.S. dollars per MT**

Crops	2013	2014	2015	2016	2017	2018	2019	2020	% Change 2016 over 2015
Wheat US HRW	312	285	235	238	242	245	248	252	1.3
Rice Thai 5%	506	423	400	401	402	403	404	405	0.3
Maize	259	193	175	179	183	187	192	196	2.3
Soybeans	538	492	410	420	430	440	451	462	2.4
Soybean Meal	545	528	410	417	423	430	437	444	1.7
Soybean oil	1057	909	780	800	820	840	862	883	2.6
Palm oil	857	821	670	682	694	707	719	732	1.8
Sugar	390	370	300	310	310	320	330	340	3.3

**Figure II.3: World Bank Commodities price forecasts, nominal U.S. dollars per MT**



<sup>17</sup>World bank outlook report July 2015

[http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/GEP2015\\_commodity\\_Jul2015.pdf](http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/GEP2015_commodity_Jul2015.pdf)

Most agencies forecast a tightening in international prices of most agricultural commodities in 2015-16.

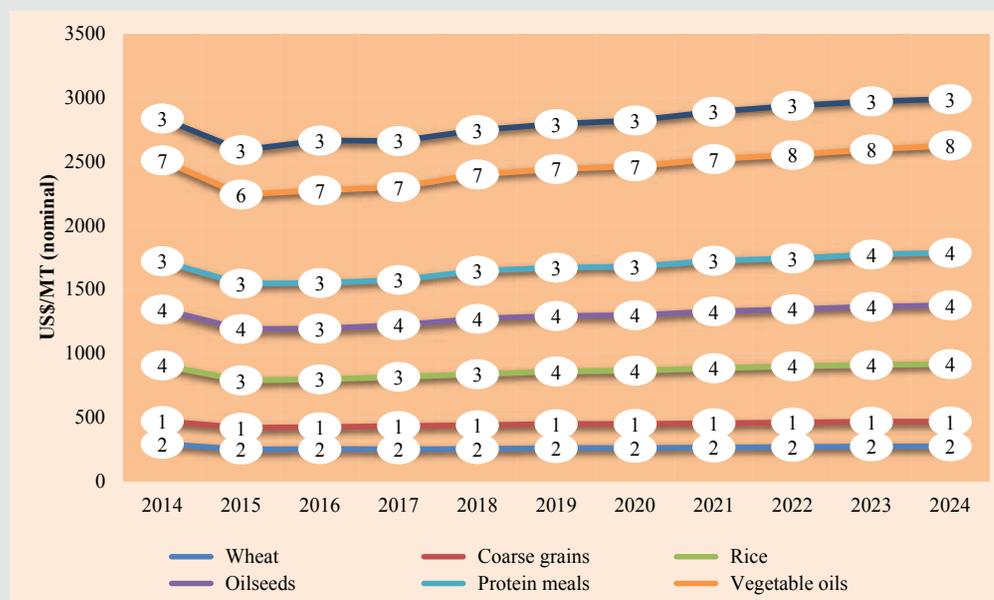
According to FAO/OECD Agricultural Outlook 2015-2025 Report<sup>18</sup>, prices for all agricultural products in nominal terms are expected to firm up in coming years although in real terms prices are expected to decline. Table II.4 and Figure II.4.

**Table II.4: FAO/OECD Commodities Price Forecasts, Nominal U.S. dollars per MT**

Crops	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	% Change 2016 over 2015
Wheat	290	247	249	248	249	257	258	262	266	270	272	0.94
Coarse grains	180	170	171	182	186	188	188	190	192	193	194	0.92
Rice	435	370	375	385	399	412	416	430	439	443	449	1.37
Oilseeds	437	403	397	404	434	434	435	445	447	457	460	-1.53
Protein meals	379	354	356	354	375	378	380	396	398	409	411	0.64
Vegetable oils	788	698	727	726	754	773	785	796	809	823	839	4.12
Raw Sugar (rse)	328	347	389	362	347	351	360	370	385	375	364	11.84

Source: OECD-FAO Agricultural Outlook 2015-2024

**Figure II.4: FAO/OECD Commodities price forecasts, nominal U.S. dollars per MT**



The latest ABARES forecasts of commodity prices are given below:

- The world wheat indicator price (US no. 2 hard red winter, fob Gulf) is forecast to average US\$215 a tonne in 2015–16, compared with US\$266 a tonne in 2014–15. The world indicator price continues to face a downward pressure as result of limited world import demand and abundant exportable supplies in some countries.
- The world coarse grain indicator price (US no. 2 yellow corn, fob Gulf) is forecast to average 5 per cent lower in 2015–16 at US\$165 a tonne.

<sup>18</sup><http://www.oecd.org/site/oecd-faoagriculturaloutlook/>

- The world oilseed indicator price (US no. 2 soybeans, fob Gulf) is forecast to fall by 9 per cent in 2015–16 to average US\$380 a tonne. The world canola indicator price (Europe rapeseed, fob Hamburg) is forecast to average US\$430 per tonne.
- The world indicator price for raw sugar (Intercontinental Exchange, nearby futures, no. 11 contract) is forecast to average US\$220.5 per tonne in 2015–16 (October to September), around 29 per cent lower than in 2014–15.

Among major globally traded pulses, prices for Canadian pulses typically ease towards the end of the year but a recent dry spell in India, the world's top producer and consumer, is keeping prices high although official forecast made in mid-June (given below) did not foresee this development.

- Canadian lentil prices in 2015-16 are forecast to increase to C\$585 to 615 per tonne from the 2014-15 average price of C\$555 to C\$585 per tonne as Canada is likely to get solid export demand due to a significant decline in pulse production in India, the major importer.
- The average price of Canadian dry peas is officially projected to fall from 2014-15 average price of C\$240 to 270 to C\$230 to 260 per tonne in 2015-16 due to higher production and larger carryover stocks.
- The average price for Canadian chickpeas in 2015-16 is forecast to remain relatively unchanged at C\$ 485 to 515 per tonne due to steady world supply and import demand from the Middle East.
- Prices of most pulses in Myanmar is likely to strengthen due to crop damage caused by floods.

### II.2.7 Implications for India

The current global agricultural outlook scenario characterized by abundant supplies of cereals, soybeans, vegetable oils, sugar and a significant decline in pulses in some major exporting countries has thrown open mixed blessings for India, which is a major exporter of rice, wheat, maize, sugar and soybean meal and importer of vegetable oils and pulses.

Despite global prices for rice, wheat, coarse grains, vegetable oils and sugar forecast to remain strong in 2016 by the World Bank and OECD/FAO, Indian exports could face tough competition in global market as domestic prices are likely to rule above world prices. Furthermore, the uneven distribution of monsoon rains this year has adversely impacted production of rice, maize, and soybeans besides other kharif season crops such as groundnut, sorghum, millets and pulses, resulting in reduced supplies and likely higher domestic prices making exports of some traditional items less competitive.

In view of the shortfall in grain production and lower grain stocks with the government and with likely higher wheat and rice offtake from government stocks as states start to implement the National Food Security act and increased allocation for drought relief, the government is unlikely to release wheat for exports in coming months. However, as the government currently carries a large quantity of low quality wheat following relaxation of quality norms for government procurement, there is a possibility of government offering some wheat for exports from its wheat inventory. Exports will have to be on private account sourced from the open market and with prevailing higher domestic prices vis-a-vis global prices, substantial exports are unlikely. In fact flour millers in south India started importing

**Indian exports could face tough competition in global market as domestic prices are likely to rule above world prices.**

With most countries, particularly Nigeria, a major destination for Indian non-basmati rice, striving to achieve self-sufficiency, export outlook for non-basmati rice remains bleak.

Indian basmati exports are expected to reach a new record of around 4.4 million tonnes in 2015-16 from estimated 4 million tonnes the previous year.

Maize exports from India are likely to remain subdued due to lower production and increasing domestic demand from the feed and starch industry leading to higher domestic prices.

India's competitiveness in the international sugar market will continue to be tempered by likely high domestic prices despite a forecast strengthening of global prices.

The forecast increase in global vegetable oils prices could make India's imports costlier.

There could be some increase in imports of pulses particularly of lentils and chickpeas from Australia.

wheat, mostly from Australia, to blend with low quality domestic wheat. To check large scale imports, the government has imposed 10 per cent import duty on wheat and raised it further to 25 per cent.

With Thai Commerce Ministry and rice exporters charting out plans to regain market share in major rice importing countries, and with substantial decline in rice export prices quoted by Thailand and Vietnam, major competitor for Indian non-basmati rice, in recent months, Indian non-basmati rice exports are likely to face increased competition in coming months. Besides Myanmar and Cambodia have also jumped into the fray in recent years following higher production government incentives. With most countries, particularly Nigeria, a major destination for Indian non-basmati rice, striving to achieve self-sufficiency, export outlook for non-basmati rice remains bleak.

However, India's mostly export-oriented basmati rice production is expected to be record for the second year in a row in 2015-16, at around 6 million tonnes. Opening stocks with millers and merchants are also reported to be high. Although domestic consumption of basmati rice is expected to increase sharply supported by lower prices and the increased use of branded products, low prices could also stimulate export demand. While the largest buyer, Iran, has been reducing its imports for the last couple of years, with depleting stocks and lower prices, Iranian demand is expected to revive in the current season. As a result, Indian basmati exports are expected to reach a new record of around 4.4 million tonnes in 2015-16 from estimated 4 million tonnes the previous year.

Despite the forecasted modest strengthening of international coarse grain prices, maize exports from India are likely to remain subdued due to lower production and increasing domestic demand from the feed and starch industry leading to higher domestic prices.

Similarly, although global soybean meal exports are forecast to increase along the trend line and global prices forecast to strengthen somewhat, Indian soybean meal exports will continue to face increased competition in 2015-16 because of likely lower domestic production and higher prices.

India's competitiveness in the international sugar market will continue to be tempered by likely high domestic prices despite a forecast strengthening of global prices. Continuation of various supportive measures will be necessary to make exports competitive. The changing government policies could also impact the credibility of Indian sugar exporters in the global market.

The forecast increase in global vegetable oils prices could make India's imports costlier. Nonetheless, poor monsoon rains have negatively impacted domestic production of most kharif season oilseeds and possibly the rabi season crops like rapeseed/mustard, which would keep domestic prices higher, supporting larger imports.

Expected higher international prices for pulses, particularly lentils in Canada, and most pulses in Myanmar, should result in higher import bill. Nevertheless, sky rocketing domestic prices of pulses, particularly for tur, following poor monsoon rains in growing regions, should prop imports. There could be some increase in imports of pulses particularly of lentils and chickpeas from Australia, where production prospects are reported to be good.

## NOTE

Most recent detailed country by country analysis of the commodity situation and outlook which we have used in this report are:

### **Food and Agriculture Organization of the United Nations**

#### **FAO Cereal Supply and Demand Brief October 2015**

<http://www.fao.org/worldfoodsituation/csdb/en/>

#### **Food Outlook, October 2015**

<http://www.fao.org/3/a-I5003E.pdf>

#### **Commodity markets monitoring and outlook**

<http://www.fao.org/economic/est/est-commodities/en/>

#### **International Commodity Prices**

<http://www.fao.org/worldfoodsituation/foodpricesindex/en/>

<http://www.fao.org/giews/pricetool/>

#### **OECD/FAO Agricultural Outlook Report**

<http://www.oecd.org/site/oecd-faoagriculturaloutlook/>

### **United States Department of Agriculture – Foreign Agricultural Service**

#### **Grain: World Markets and Trade October 2015**

<http://apps.fas.usda.gov/psdonline/circulars/grain.pdf>

#### **Oilseeds: World Market and Trade October 2015**

<http://apps.fas.usda.gov/psdonline/circulars/oilseeds.pdf>

#### **Agriculture and Agri-Food Canada**

#### **Canada-Outlook for Principal Field Crops June 2015**

[http://www.agr.gc.ca/resources/prod/doc/misb/mag-gam/fco-ppc/fco-ppc\\_2015-06-18-eng.pdf](http://www.agr.gc.ca/resources/prod/doc/misb/mag-gam/fco-ppc/fco-ppc_2015-06-18-eng.pdf)

### **International Grains Council**

#### **Grain Market Report, September 2015**

<http://www.igc.int/en/downloads/gmrsummary/gmrsumme.pdf>

### **ABARES**

#### **Agricultural Commodities Outlook, September Quarter 2015**

[http://data.daff.gov.au/data/warehouse/agcomd9abcc004/agcomd9abcc20150915/AgCommodities201509\\_1.0.0\\_lr.pdf](http://data.daff.gov.au/data/warehouse/agcomd9abcc004/agcomd9abcc20150915/AgCommodities201509_1.0.0_lr.pdf)

#### **Australian Crop Report September 2015**

[http://www.agriculture.gov.au/abares/display?url=http://143.188.17.20/anrd1/DAFFService/display.php?fid=pb\\_aucrpd9aba\\_20150908\\_11a.xml](http://www.agriculture.gov.au/abares/display?url=http://143.188.17.20/anrd1/DAFFService/display.php?fid=pb_aucrpd9aba_20150908_11a.xml)





### **World Bank**

Commodity Market Outlook Report July 2015 [http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/GEP2015c\\_commodity\\_Jul2015.pdf](http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/GEP2015c_commodity_Jul2015.pdf)

### **World Bank Commodity Price Data (The Pink Sheet)**

[http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/pink\\_data\\_m.xlsx](http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/pink_data_m.xlsx)

## PART III

# Domestic Agricultural Outlook Scenario for 2015-16

Agricultural outlook is shaped by various factors internal and external directly or indirectly impacting production. These can be broadly classified into (a) weather; (b) price environment; (c) input supply situation; (d) demand conditions; (e) supply bottlenecks; (f) trade environment; and (g) external factors. The following is the current status of various factors impacting the 2014-15 agricultural outlook.

### III.1 Weather

#### 2015 South West Monsoon Performance

Monsoon rains are the most critical factor impacting the agricultural production outlook in India as only 45 percent of the crop area is under assured irrigation and even the irrigation availability particularly in the *rabi* season is dependent on rains during the monsoon period. Monsoon arrival, progression, its spatial and temporal distribution, and time of withdrawal are crucial in determining the agricultural outcome. The highlights of the 2015 southwest monsoon, based on Indian Meteorology Department's (IMD) end season report<sup>19</sup> are given below:

- The South West monsoon season (June–September) rainfall over the country as a whole was 86% of its long period average (LPA). Thus years 2014 and 2015 was the fourth case of two consecutive all India deficient monsoon years during the last 115 years.
- Seasonal rainfall was 83% of its LPA over Northwest India, 84% of its LPA over Central India, 85% of its LPA over south Peninsula and 92% of its LPA over Northeast (NE) India.
- Out of the total 36 meteorological subdivisions, 18 subdivisions constituting 55% of the total area of the country received normal season rainfall and 17 subdivisions (39% of the total area of the country) received deficient season rainfall. One subdivision (West Rajasthan) constituting 6% of the total area of the country received excess rainfall.
- Monthly rainfall over the country as a whole was 116% of LPA in June, 84% of LPA in July, 78% of LPA in August, and 76% of LPA in September.
- Monsoon set in over Kerala on June 5, 4 days later than its normal date of 1st June and covered the entire country by 26th June, nearly 20 days earlier than its normal date of 15 July.
- Withdrawal of monsoon from west Rajasthan commenced on 4th September against its normal date of 1st September.
- During the season, 2 Cyclonic Storms ('Ashobaa' and 'Kemon'), 6 monsoon depressions and 3 monsoon low pressure areas were formed as against the normal of 6 monsoon depressions and 6 monsoon low pressure areas per season.

<sup>19</sup>[http://www.imd.gov.in/section/nhac/dynamic/endofseasonreport\\_2015.pdf](http://www.imd.gov.in/section/nhac/dynamic/endofseasonreport_2015.pdf)



For comparison, the monsoon parameters of 2014 and 2015 monsoon performance comparison are summarized in Table III.1. Figure III.1 shows the spatial distribution of monsoon in 2014 and 2015.

Figure III.1: Spatial Distribution of Monsoon Rains, 2015 vs. 2014

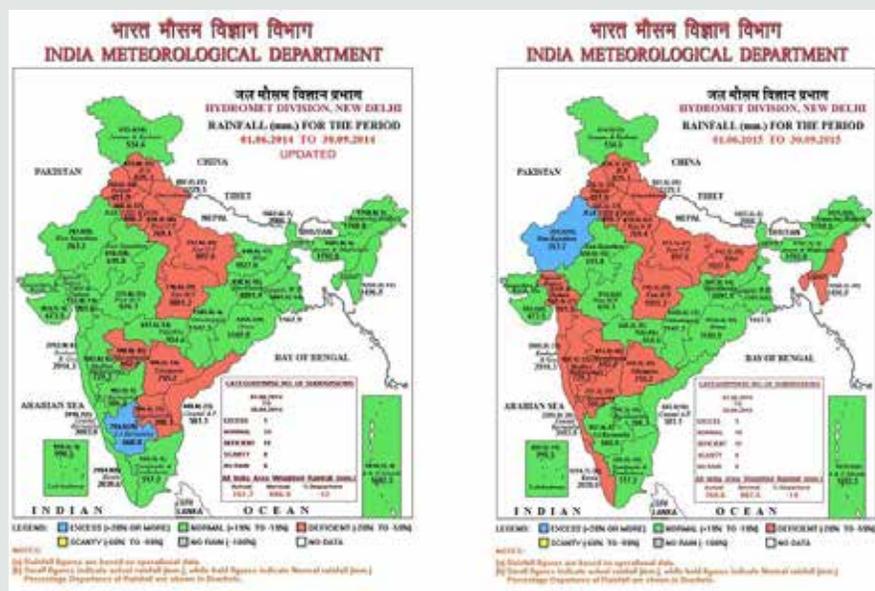


Table III.1: Southwest Monsoon Comparison 2015 vs. 2014

Parameters	2014	2015
Rainfall for the season (June-September) as % its LPA	88%	86%
Zonal rainfall as % of its seasonal rainfall (LPA)	NW - 79% ; C - 90% SP - 93%; NE - 88%	NW - 83%; C - 84% SP - 85%; NE - 92%
Number of Meteorological subdivision receiving (E) , (N), (D) and (S) rainfall 1/	E - 01 (03%); N- 23 (67%) D-12 (30%); S - 00 (0%)	E - 1 (06%); N - 18 (55%) D - 17 (39%); S - 00 (0%)
Monthly rainfall as % of its seasonal rainfall (LPA)	June (57%); July (90%); August (90%); Sept (108%)	June (116%); July (84%); August (78%); Sept (76%)
Monsoon set in over Kerala	June 6 (5 days behind normal)	June 5 (4 days behind normal)
Monsoon covering entire country	July 7 (2 days behind normal)	June 26 (20 days earlier)
Monsoon withdrawal from Rajasthan	Sept 17 (16 days later than normal)	Sept 4 (3 days later than normal)
No of Cyclonic storm, monsoon depressions, monsoon low pressure	1(0); 2(6); 10 (6) 2/	2 (0); 6 (6); 3(6) 2/
El Nino	Weak El Nino during the middle of the monsoon season,	Moderate to strong in the second half

1/ Figures in parentheses show geographical area coverage of the whole country2/ Figures in parentheses show normal occurrences.

Note: LPA – long period average; NW – North West India; C – Central India; SP – South Peninsular India; NE – North East India;

(E) Excess (→20% of LPA); (N) Normal (+19% to -19% of LPA; (D) Deficient (-20% to -59%); (S) Scanty (-60% to -99%); No rain (-100%)

From the above tables and map, it appears the performance of monsoon in 2015 was somewhat below the 2014 monsoon performance.

### 2015 NE Monsoon Forecast by IMD:

Five Meteorological Subdivisions of Southern India namely Tamil Nadu, Coastal Andhra Pradesh, Rayalaseema, Kerala and south interior Karnataka, receives about 30% of its annual rainfall during the North East (NE) monsoon season (October to December). It has a strong influence on the production outlook for rabi and summer season crops, particularly rice and ground nut. The IMD forecast<sup>20</sup> is that the NE monsoon rainfall for South Peninsula (Tamil Nadu, Coastal Andhra Pradesh, Rayalaseema, Kerala and south interior Karnataka), is most likely to be above normal (>111% of Long Period Average). The LPA of the North-East monsoon season rainfall for the south Peninsula for the base period 1951-2000 is 332.1 mm.

However, during October 1 to October 21, 2015, NE monsoon was 51% below normal. The deficiency was more severe in Coastal Andhra Pradesh, Telangana, North Interior Karnataka, and most parts of Maharashtra and Gujarat, besides Orissa, and most wheat growing regions of North India.

Despite a somewhat mediocre temporal and spatial distribution of monsoon rains this year, compared with last year, progressive planting data by the Ministry of Agriculture shows a marginal increase in planted area for most crops in 2015 compared to 2014, except for maize and total pulses. Nonetheless, the planted area so far is somewhat below the normal planting, except in the case of coarse grains, pulses, and oilseeds (Table III.2).

**Table III.2: Progressive Planting of Kharif Crops (Million Hectares)**

Crop	Progressive Planting				Normal Area for Kharif season
	2014 As on Sep 26	First Advance Estimate 2015 As on Sep 29	Change % 2015 over 2014	Fourth Advance Estimate 2014	
Rice	37.97	37.82	2.35	39.65	38.83
Jowar + other millets	3.55	3.61	1.69	3.75	4.71
Bajra	6.84	7.34	7.31	7.12	8.48
Maize	7.84	7.3	-6.89	7.49	7.25
Total C Grains	18.19	18.61	0.11	18.36	20.44
Tur	3.56	3.6	1.12	3.71	3.93
Urad	2.5	2.63	5.2	2.43	2.38
Moong	2.15	2.2	2.33	2.02	2.46
Total Pulses	10.29	11.56	-2.08	9.76	10.88
Total Foodgrains	65.83	66.92	1.66	58.01	70.15
Groundnut	3.7	3.82	3.24	3.94	4.5
Soybean	11.02	11.34	2.9	11.09	10.4
Total Oilseeds	18.52	17.8	5.01	18.34	18.52
Sugarcane	4.88	4.87	1.03	5.14	4.82

Source: Directorate of Economics and Statistics, Ministry of Agriculture <http://agricoop.nic.in/weather.html>

<sup>20</sup>[http://imd.gov.in/section/nhac/dynamic/pressrelease\\_nwfc.pdf](http://imd.gov.in/section/nhac/dynamic/pressrelease_nwfc.pdf)

## III.2 Price Environment

The current open market prices of most kharif crops with the exception of maize, pulses, and onion are lower than last year (Table I.4). However, the percent increases in Minimum Support Prices announced for most 2015-16 kharif crops this year are equal or lower than for 2014-15 crops<sup>21</sup>, with the exception of coarse grains, tur, urad, ground nut and soybeans, for which the % increase in 2015-16 is more than in 2014-15. (Table III.3).

**Table III.3: Minimum Support Prices for Kharif crops**

Commodity	MSP (Rs./Quintal)			Y-O-Y Increase (%)	
	2013-14	2014-15	2015-16	2014-15	2015-16
Paddy Common	1,310	1,360	1,410	3.7	3.5
Paddy Grade A	1,345	1,400	1,450	3.9	3.4
Jowar Hybrid	1,500	1,530	1,570	2.0	2.5
Jowar Maldandi	1,520	1,550	1,590	1.9	2.5
Bajra	1,250	1,250	1,275	0.0	2.0
Maize	1,310	1,310	1,325	0.0	1.1
Ragi	1,500	1,550	1,650	3.2	6.1
Tur	4,300	4,350	4,625 *	1.1	5.9
Moong	4,500	4,600	4,650 *	2.2	1.1
Urad	4,300	4,350	4,425 *	1.1	1.7
Groundnut-in shell	4,000	4,000	4,030	0.0	0.7
Soybean Yellow	2,560	2,560	2,600	0.0	1.5
Sunflower seed	3,700	3,750	3,800	1.3	1.3
Sesame	4,500	4,600	4,700	2.2	2.1
Niger seeds	3,500	3,600	3,650	2.8	1.4
Cotton Medium Staple	3,700	3,750	3,800	1.3	1.3
Long Staple	4,000	4,050	4,100	1.2	1.2

\*Includes Rs. 200 per quintal bonus over and above the MSP.

Input prices (fertilizer, diesel, electricity, pesticides) showed a mixed trend (Table III.3), with most input prices showing a decline or a marginal increase in 2015 over 2014 during planting season.

<sup>21</sup><http://eands.dacnet.nic.in/PDF/MSP-Kharif-Crops2015-16.pdf>

**Input prices (fertilizer, diesel, electricity, pesticides) showed a mixed trend.**

Table III.4: Y-O-Y Change in Farm Input Prices based on Wholesale Price Index

(Base 2004-05=100)

High Speed Diesel (Agriculture)												
	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
2014	226.6	228.6	231.2	230.1	232.3	235.2	238.8	240.4	242	239	218	211
2015	200.7	188.4	203.2	195.6	209.6	212	200.8	181.4	174.1			
Y-O-Y Change %	-11.43	-17.59	-12.11	-14.99	-9.77	-9.86	-15.91	-24.54	-28.06			
Fertilizer												
2014	153	152.9	153.1	154.4	154.3	154.2	154.4	154.2	154.6	155	155	155
2015	155.3	155.6	156.3	156.1	156.7	157.8	158.2	158.1	158.2			
Y-O-Y Change %	1.50	1.77	2.09	1.10	1.56	2.33	2.46	2.53	2.33			
Electricity (Agriculture)												
2014	205.5	205.5	211.3	212.1	212.1	212.1	211.3	211.3	211.5	212	212	212
2015	211.5	217.9	217.9	217.9	217.9	217.9	243.5	217.9	243.5			
Y-O-Y Change %	2.92	6.03	3.12	2.73	2.73	2.73	15.24	3.12	15.13			
Pesticide												
2014	127.2	128.2	130.5	130.6	131.7	135.2	135.4	135.4	137.2	137	136	137
2015	138.6	138.1	136.7	135.9	136.2	136.1	136.5	135.9	136.7			
Y-O-Y Change %	8.96	7.72	4.75	4.06	3.42	0.67	0.81	0.37	-0.36			

However, labour cost continued to remain high. At the all-India level, agricultural wage rates have increased by 19.4 percent at current prices while 9.5 percent at constant prices during TE 2014-15<sup>22</sup>. The CACP projects human labour cost to increase by 7.6 per cent in 2015-16. Table III.5 shows the kharif crop input index as computed by CACP in its Price Policy for Kharif Crops for the Marketing Season 2015-16.

<sup>22</sup>file:///F:/Kharif%20outlook%20and%20situation%20report/CACP%20report%20kharif%202015-16.pdf

The CACP projects human labour cost to increase by 7.6 per cent in 2015-16.

**Table III.5: Kharif Crop Input Index**

Inputs	Weight (2012-13)	Kharif Crops Input Index				% Change 2015-16 Over 2014-15
		2012-13	2013-14	2014-15	2015-16	
Human Labour	0.53	307	333	358	385	7.6
Bullock Labour	0.07	263	281	302	322	6.8
Machine Labour	0.13	188	217	207	198	-4.4
Seeds	0.07	243	257	274	291	6.3
Fertilizer	0.11	132	133	138	138	0.1
Manure	0.03	244	260	278	296	6.5
Insecticide	0.03	122	128	136	141	4
Irrigation Charges	0.04	154	155	158	162	2.4
Composite Input Index		253	274	290	307	5.8

The budgetary allocation for fertilizer subsidy for FY 2015-16 is Rs. 729.7 billion (Rs. 123 billion for imported urea, Rs. 382 billion for domestic urea and Rs. 224.7 billion for sale of decontrolled fertilizers with concessions to farmers) an increase of 2.82% over the 2014-15 revised subsidy of Rs. 709.7 billion (Rs. 121 billion for imported urea, Rs. 382 billion for domestic urea and Rs 206.7 billion for sale of decontrolled fertilizers with concessions to farmers).

Measures announced by the government to try and mitigate the impact of the drought in recent months in some states include a provision of Rs.100 crore as diesel subsidy to farmers so that they can operate diesel water pumps in drought and deficit rainfall areas and protect standing crops; an increase of subsidy on seeds by 50% over existing levels for distribution in drought-notified districts till December; and additional monetary support for farmers to buy fodder supplies for livestock.

### III.3 Input Supply Situation

Input supply situation for the 2015 kharif crops was generally favorable. The government had adequate supply of certified and quality seeds of most kharif crops to meet the requirement.

**Fertilizer** sales during the kharif season up to September 30, 2015 with the corresponding period of 2014 in parentheses in thousand metric tonnes are: urea – 14,601 (12,859); DAP – 4,325 (3,012); MOP – 1,044 (1,101), complex – 3,922 (3,330), SSP = 1,839 (1,655),

However, the **irrigation** water situation this year is worse than last year, when the monsoon began with a severe dry spell of six weeks, but rainfall improved significantly towards the end of the season and filled up reservoirs to optimal levels. This year, although the monsoon began strongly, it has tapered off in August, leaving reservoirs depleted. Water table in 91 major reservoirs monitored by the Central Water Commission tracked close to the previous year's level during most of the kharif season but toward the end of the season, water level dipped significantly below the previous year's level, and 16% below normal level, which will have a significant negative ramification on the rabi crop production. The situation is reported to be particularly disturbing in western and southern regions although

Input supply situation for the 2015 kharif crops was generally favorable.

The irrigation water situation this year is worse than last year.

central Indian reservoirs have adequate water. The situation in the north is also better due to heavy downpours in the Himalayan states.

As **agricultural credit** enables farmers to purchase inputs and make investments for agricultural production, the government in the 2015-16 Union Budget has set up an ambitious target of Rs. 850,000 crore of credit during the year 2015-16 compared to 800,000 crore in 2014-15. To support the agriculture sector with the help of effective and hassle-free agriculture credit, with a special focus on small and marginal farmers, the government has allocated Rs. 25,000 crore in 2015-16 to the corpus of Rural Infrastructure Development Fund (RIDF) set up in NABARD; 15,000 crore for Long Term Rural Credit Fund; Rs. 45,000 crore for Short Term Cooperative Rural Credit Refinance Fund; and Rs. 15,000 crore for Short Term RRB Refinance Fund.

The Union Cabinet on July 21 decided to extend the subsidy offered on interest rates to farmers for 2015-16 and increase the budget allocation for the interest subvention scheme by more than Rs. 5,000 crore to Rs. 18,110 crores. Under the scheme, banks extend loans up to Rs. 3 lakh to farmers at a concessional interest rate of 7%. The farmers get a further 3 percentage points discount for timely repayment, making the effective rate 4%.

### III.4 Demand Conditions

Food demand is influenced by income, price, population and taste factors. Successive NSS Consumer Expenditure Survey results indicate a change in food preferences in India with per capita consumption of most food grains declining where as demand for high value food products such as meat, fruits, milk and milk products increasing. However, with the implementation of Food Security Act in various states this year the demand for wheat and rice could go up as the price of grains distributed under the Act is lower than before and the quantity distributed is higher. The likely improved performance of the economy is expected to generate increased demand for high value products such as milk and milk products fruits and vegetables and meat adding to the price pressures in the economy unless the supply response in these commodities offsets the rise in demand. The mismatch between supply and demand of pulses has also widened following two consecutive poor pulse crops, which has resulted in a significant increase in pulse prices in recent months.

### III.5 Supply Bottlenecks

Although grain storage situation has improved considerably following a decline in government procurement and increased offtake from stocks, poor logistics, inadequate cold storage facilities and lack of processing facilities continue to hurt supply and availability of perishable food products such as vegetables (mainly onion and potato) and fruits. As per estimates by the National Centre for Cold Chain Development (NCCD), current gap in cold chain infrastructure is about 40 million metric tonnes<sup>23</sup>. The government's decision to bring potato and onions under the ambit of Essential Commodities Act and storage controls alone is unlikely to improve the supply situation and taming prices of these perishable foods without corresponding improvements in the infrastructure and logistics.

<sup>23</sup><http://www.nccd.gov.in/PDF/ChallengeColdChain-Development.pdf>

The likely improved performance of the economy is expected to generate increased demand for high value products such as milk and milk products fruits and vegetables and meat.

The mismatch between supply and demand of pulses has also widened following two consecutive poor pulse crops, which has resulted in a significant increase in pulse prices in recent months.

Poor logistics, inadequate cold storage facilities and lack of processing facilities continue to hurt supply and availability of perishable food products such as vegetables (mainly onion and potato) and fruits.

The government's decision to bring potato and onions under the ambit of Essential Commodities Act and storage controls alone is unlikely to improve the supply situation.

The government imposed 10 per cent import duty on wheat until March 31, 2016, which was later increased to 25 per cent on October 19.

Import duty on crude vegetable oils hiked to 12.5 per cent from 7.5 per cent and on refined oils to 20 per cent from 15 per cent.

The MEP on potato was abolished to encourage exports in view of declining domestic prices.

The government notified a mandatory export of 4 million tonnes of sugar for the 2015-16 season.

Minimum export price of onion was hiked by \$275 per tonne to \$700 per tonne on August 25, aimed at curbing exports.

Recent weakening Indian rupee exchange rate against U.S. dollar should provide some relief to exports while disadvantageous for imports of major food items such as vegetable oils and pulses.

### III.6 Trade Environment

The government issued or amended several tariff and non-tariff restrictions on international trade over the past few months to protect the interest of producers and consumers.

To check large scale imports of wheat by flour millers in south India due to the poor quality of wheat available domestically, the government imposed 10 per cent import duty on wheat until March 31, 2016, which was later increased to 25 per cent on October 19.

Import duty on crude vegetable oils hiked to 12.5 per cent from 7.5 per cent and on refined oils to 20 per cent from 15 per cent on September 17.

On September 18, the government notified a mandatory export of 4 million tonnes of sugar for the 2015-16 season (October to September) to help take pressure off prices by reducing domestic stockpiles. On September 7, the requirement of registration of quantity with DGFT for export of sugar was dispensed to facilitate sugar exports and withdrew Duty Free Import Authorization for import of raw sugar.

On May 26, the MEP on potato was abolished to encourage exports in view of declining domestic prices.

Minimum export price of onion was hiked by \$275 per tonne to \$700 per tonne on August 25, aimed at curbing exports and boosting domestic supply to check price rise.

On October 5, 2015, the government increased the basic customs duty on ghee, butter and butter oil from the present rate of 30% to 40% for a period up to and inclusive of the 31st day of March, 2016.

On the domestic trade front, on September 22, 2015, the Cabinet approved extension of the time limit regulating trade in pulses, edible oils and edible oilseeds till September 30, 2016 under the Essential Commodities Act. This should enable States to regulate the trade of these essential commodities and to continue to take effective operations under the Essential Commodities Act.

### III.7 External Factors

External factors are not as conducive to agricultural exports this year as last year due to better global production outlook for most traded commodities such as wheat, rice, maize, soybean/soybean meal and sugar. This could adversely impact Indian exports of these commodities in 2015 - 16. However, the rupee/dollar exchange rate fluctuations will be a major factor impacting trade flows. Recent weakening Indian rupee exchange rate against U.S. dollar should provide some relief to exports while disadvantageous for imports of major food items such as vegetable oils and pulses.

### III.8 Quantification of Agricultural Outlook

The index of agricultural outlook was introduced in our quarterly report of July 2013 to quantify the agricultural outlook for 2014-15 using agricultural production index provided by the DES as a proxy. The FAO and World Bank agricultural production index has also been used as an alternative. The agricultural production index (API) was regressed on major exogenous factors impacting production such as rainfall, fertilizer use (NPK) and a trend variable to account for gradual technology improvements. Using this regression equation,

forecast of outlook for 2015-16 is made based on available information on weather, input use and trend.

The estimated linear regression equation using the **DES production index** data (2007-08 to 2013-14) is:

$$\text{API}_{\text{DES}} = 0.673768 \text{ RI} + 4.082769 \text{ F} + 3.203767 \text{ T}$$

$$(0.287949) \quad (0.240550) \quad (1.359827)$$

$$R^2 = 0.998$$

Where API = Agricultural Production Index; RI = Rainfall Deviation from LPA; FI = Total NPK consumption; T = Trend variable. Figures in parentheses are t values.

The estimated linear regression equation using the **FAO production index** (2005-06 to 2012-13) is:

$$\text{API}_{\text{FAO}} = 0.413392 \text{ RI} + 4.743379 \text{ FI} + 0.210558 \text{ T}$$

$$(0.335501) \quad (0.286263) \quad (1.424298)$$

$$R^2 = 0.997$$

The estimated linear regression equation using the **World Bank production index** (2005-06 to 2013-14) is:

$$\text{API}_{\text{WB}} = 0.684686 \text{ RI} + 4.475750 \text{ FI} + 2.306312 \text{ T}$$

$$(0.396926) \quad (0.327312) \quad (1.421973)$$

$$R^2 = 0.996$$

The estimated API for 2015-16 using the regression equation is: 119.4 using the DES data, 112.7 using the FAO data and 125.4 using World Bank data, depicting a decline of around zero per cent, 2.6 per cent, and 1.0 per cent, respectively over estimated 2014-15 API. API forecast for 2015-16 is made using the current IMD reports of the monsoon (14% below LPA) and assuming fertilizer consumption marginally lower than the estimated 2014-15 level at 24.5 million tonnes of NPK. This implies that based on prevailing conditions agricultural outlook for 2015-16 is expected to be more or less unchanged or marginally below 2014-15 but significantly better than in the previous drought year of 2009. The outlook will undergo further changes as the monsoon season ends and better data become available regarding fertilizer application. Poor monsoon rains towards the tail-end of the 2015 monsoon season and significantly lower post-monsoon rains could deteriorate prospects for rabi crops particularly wheat, gram and rapeseed/mustard leading to a further weakening in the agricultural outlook for 2015-16 from the current projected level.

**Poor monsoon rains towards the tail-end of the 2015 monsoon season and significantly lower post-monsoon rains could deteriorate prospects for rabi crops.**



## PART IV

# COMMODITY OUTLOOK ASSESSMENT

## IV.1 Rice

### IV.1.1 Modest decline in 2015-16 production forecast

Despite a 14% deficiency in 2015 monsoon season (June-September) rainfall from the LPA (compared to 12% in 2014), 2015-16 kharif rice production is forecast to remain more or less unchanged from the 2014-15 production. According to the Ministry of Agriculture's 1st AE<sup>24</sup>, 2015-16, kharif rice production is 90.61 million tonnes, compared to the 2014-15 4th AE of 90.86 million tonnes, close to NCAER current forecast of 89 million tonnes. The drought impact on production was minimised by the formulation and effective implementation of contingency plans by the government comprising of diesel subsidy for protective irrigation and enhancement of seed subsidy to farmers in drought affected districts.

According to All India Rice Exporters Association (AIREA), India's mostly export-oriented basmati rice production in 2014-15 was a record 8.8 million tonnes<sup>25</sup>, compared to 6.6 million tonnes in the previous year. Production in 2015-16 is expected to decline marginally as owing to low international demand and lower prices, farmers are reported to have reduced acreage. One of the reasons for the significant increase in basmati rice production in recent years was the introduction of a new short duration variety PUSA 1509<sup>26</sup>, which has a significantly higher yield potential vis-à-vis other varieties. However, millers have reportedly resisted buying the PUSA 1509 variety due to its poor recovery rates and lack of acceptance in the export market.

### IV.1.2 Rabi rice production outlook murky

*Rabi/summer* rice is normally sown during November to February and harvested during March to June. The area under *rabi* rice in recent years has ranged from 4.0 to 4.8 million hectares (about 7 to 9 per cent of total rice area in the country). It is known by different names in different states: *Boro* in Assam and West Bengal, *Dalua* in Orissa, *Dalwa* in Andhra Pradesh, *Punja* in Kerala, *Navarai* in Tamil Nadu and *Garma* in Bihar. Early maturing varieties are typically planted in the rabi season. Efforts are being made by the government to increase the per hectare productivity of rice from traditional rabi rice growing areas so as to compensate any shortfall in kharif rice production owing to poor monsoon.

Below normal post-monsoon monsoon rains, particularly in major rabi rice growing states of southern India and low water table in major reservoirs could negatively impact rabi/summer rice planting. Currently we forecast rabi rice production at 13 million tonnes and total MY 2015-16 rice production at 103.5 million tonnes against the government's 4th AE of 104.8 million tonnes in 2014-15, which comprised of 90.86 million tonnes of kharif and 13.94 million tonnes of rabi production.

<sup>24</sup>[http://eands.dacnet.nic.in/Advance\\_Estimate/1stAdv2015-16Eng.pdf](http://eands.dacnet.nic.in/Advance_Estimate/1stAdv2015-16Eng.pdf)

<sup>25</sup><http://www.airea.net/page/60/statistical-data/state-wise-basmati-rice-production>

<sup>26</sup><http://www.rkmp.co.in/category/news-events-optional-tags/pusa-1509>

We forecast rabi rice production at 13 million tonnes and total MY 2015-16 rice production at 103.5 million tonnes against the government's 4th AE of 104.8 million tonnes in 2014-15

Year-on-year wholesale price index-based rice inflation has shown a downward slide since June 2014 and has become negative since May 2015.

Rice consumption in MY 2015-16 is forecast to increase to 100.5 million tonnes, closer to the trend line, due to higher distribution through the PDS.

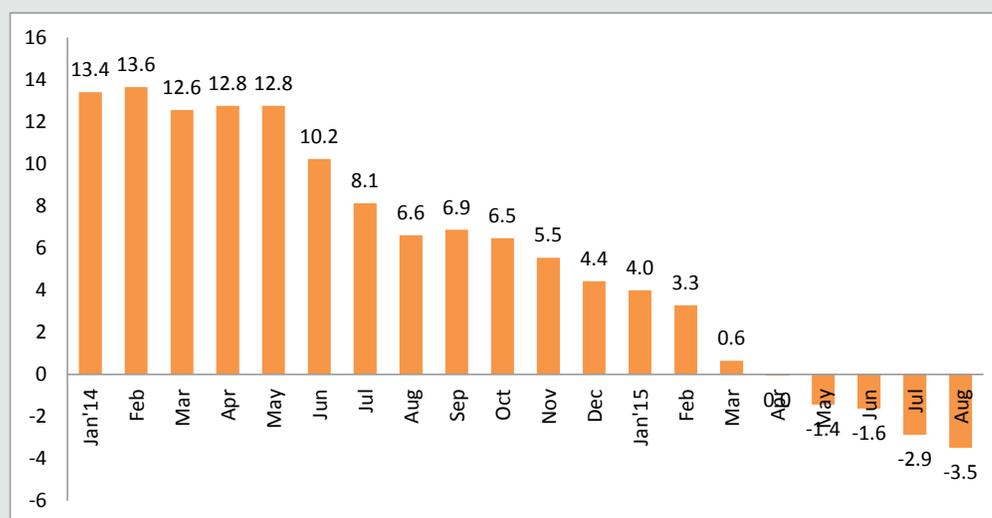
India's rice export in MY 2014-15 (Oct-Sep) is estimated to have increased to 11.7 million tonnes from 10.3 million tonnes in 2013-14.

Indian non-basmati rice exports are likely to face increased competition in the world market in 2015-16 due to expected stiff competition from Southeast Asian rivals, Thailand and Vietnam.

### IV.1.3 Consumption to decline marginally

Year-on-year wholesale price index-based rice inflation has shown a downward slide since June 2014 and has become negative since May 2015 (Figure IV.1.1), responding to government decision to supply more rice through the PDS. Even the poor monsoon last year and this year did not impact rice price inflation.

Figure IV.1.1: % Year on Year Change in Rice Wholesale Price Index



Rice consumption based on the food balance sheet analysis is estimated to have declined by around 5.0 per cent in MY 2014-15 to around 97.5 million tonnes. However, this consumption estimate could be somewhat on the lower side as the balance sheet approach does not take into consideration the change in privately-held stocks for which estimates are not available. Apparently there has been a build-up in private rice stocks in 2014-15 considering the near record production and a significant drop in procurement for the second consecutive year. Furthermore, offtake through PDS is also estimated to have increased. Rice consumption in MY 2015-16 is forecast to increase to 100.5 million tonnes, closer to the trend line, due to higher distribution through the PDS as part of the government strategy to contain food price inflation.

### IV.1.4 Exports likely to decline in 2015-16

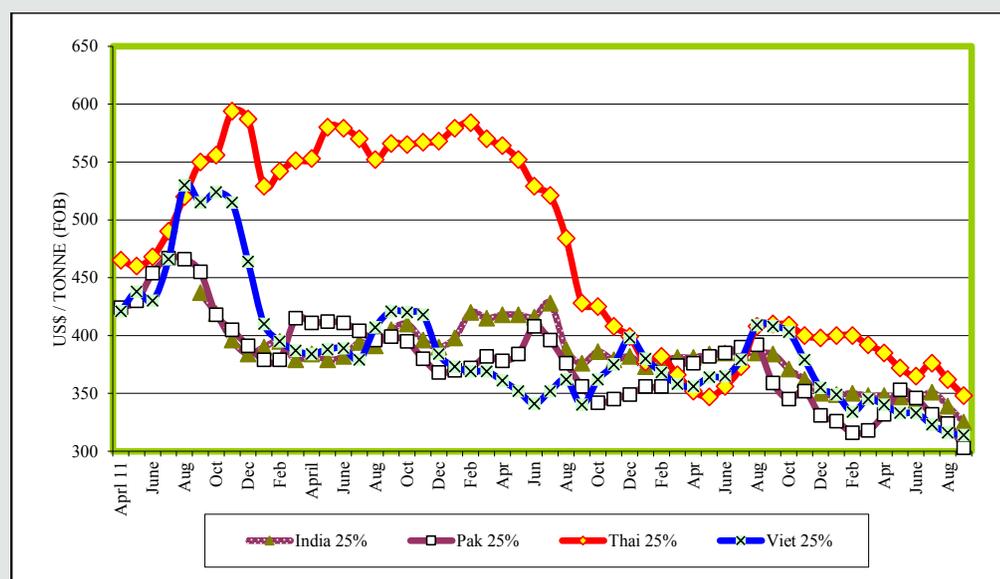
India's rice export in MY 2014-15 (Oct-Sep) is estimated to have increased to 11.7 million tonnes from 10.3 million tonnes in 2013-14 despite earlier apprehension of lower exports due to various factors. The relatively strong export offtake in August and September, mostly non-basmati rice exports to African and Middle Eastern markets due to competitive pricing of Indian rice vis-à-vis other exporting countries (Figure IV.1.2) and larger exports of basmati rice exports supported exports. Rice exports on FY basis (April-March) in 2014-15 are available at the Agricultural and Processed Food Export Development Authority (APEDA) website<sup>27</sup>. Indian non-basmati rice exports are likely to face increased competition in the world market in 2015-16 due to expected stiff competition from Southeast Asian rivals, Thailand and Vietnam. Increased rice export from Myanmar has also posed additional competition for Indian non-basmati rice exports. The Myanmar government is keen on increasing rice exports and is planning to prioritize

<sup>27</sup><http://agriexchange.apeda.gov.in/indexp/reportlist.aspx>

rice in its National Export Strategy. Rice import restrictions, both tariff and non-tariff, by major Indian rice importing countries such as Nigeria and Iran are also likely to have a negative impact on Indian basmati and non-basmati rice exports in MY 2015-16. In an effort to become self-sufficient in rice, Nigeria is attempting to gradually discourage rice imports. Iran also restricts basmati rice imports through tariff and non-tariff barriers. According to trade sources, Iran is expected to resume basmati rice imports soon, which would benefit Indian exports. Currently we forecast MY 2015-16 Indian rice exports at 9.0 million tonnes.

India was planning to import small quantities of rice from Myanmar in MY2014-15 to meet public distribution system (PDS) requirements in its two north-eastern states (Tripura and Mizoram) due to some temporary logistical problems. However, such imports turned out to be miniscule due to lack of parity with domestic prices.

Figure IV.1.2: Rice Export Price – India vis-a-vis International



Source: FAO

Table IV.1.1 show the government operations in rice over the past several years. Table IV.1.2 shows the rice balance sheet in 2013-14, 2014-15 and forecast for 2015-16.

Table IV.1.1: Government Operations in Rice

MY (Oct- Sep)	Beginning Stocks MMT	Govt Procurement MMT	MSP for Paddy Rs. Per MT		PDS Monthly Offtake * MMT	PDS Issue Price for Milled Rice Rs. Per MT			Ending Stocks MMT
			Common	Grade A		APL Grade A	BPL	AAY	
2003/04	5.2	22.9 (25.9)	5,500	5,800	2.092	8,300	5,650	3,000	6.1
2004/05	6.1	24.7 (29.7)	5,600	5,900	1.733	8,300	5,650	3,000	4.8
2005/06	4.8	27.6 (30.1)	5,700	6,000	2.000	8,300	5,650	3,000	6.0
2006/07	6.0	25.1 (26.9)	6,200	6,500	2.067	8,300	5,650	3,000	5.5
2007/08	5.5	28.7 (29.7)	7,450	7,750	2.100	8,300	5,650	3,000	7.9
2008/09	7.9	34.1 (34.4)	9,000	9,300	2.058	8,300	5,650	3,000	15.3
2009/10	15.3	32.0 (35.9)	10,000	10,300	2.300	8,300	5,650	3,000	18.4
2010/11	18.4	34.2 (35.6)	10,000	10,300	2.494	8,300	5,650	3,000	20.4

We forecast MY 2015-16 Indian rice exports at 9.0 million tonnes.

2011/12	20.4	35.0 (33.2)	10,800	11,100	2,847	8,300	5,650	3,000	23.4
2012/13	23.4	34.0 (32.3)	12,500	12,800	2,711	8,300	5,650	3,000	23.1
2013/14	23.1	31.9 (29.9)	13,100	13,450	2,420	8,300	3000**	3000**	18.6
2014/15	18.6	32.1 (30.6)	13,600	14,000	2,964	8,300	3000**	3000**	14.2
2015/16 F	14.2	30.0 (29.0)	14,100	14,500	3,000	8,300	3000**	3000**	8.2

\* Based on Fiscal year; \*\* Under NFSA; F – forecast, Note: Figures in parentheses % of production.;  
 \* Based on Fiscal year; \*\* Under NFSA; F – forecast, Note: Figures in parentheses % of production.;

**Source:** Department of Food and Public Distribution and Food Corporation of India

**Table IV.1.2: Supply and Demand Balance for Rice (1000 Tonnes)**

Particulars	2013-14 E	2014-15 E	2015-16 F
	Oct-Sep	Oct-Sep	Oct-Sep
Production	106,650	104,800	103,500
Beginning Stocks (with government)	23,100	18,600	14,200
Imports	0	Neg	0
<b>Total Supply</b>	<b>129,750</b>	<b>123,400</b>	<b>117,700</b>
Exports	10,300	11,700	9,000
Food Use	98,250	95,500	98,500
Seed, Feed, Waste, Other	2,600	2,000	2,000
Total Use 1/	100,850	97,500	100,500
Ending Stocks (with government)	18,600	14,200	8,200
<b>Total Distribution</b>	<b>129,750</b>	<b>123,400</b>	<b>117,700</b>
Stocks to Use Ratio %	18.5	13.0	8.2

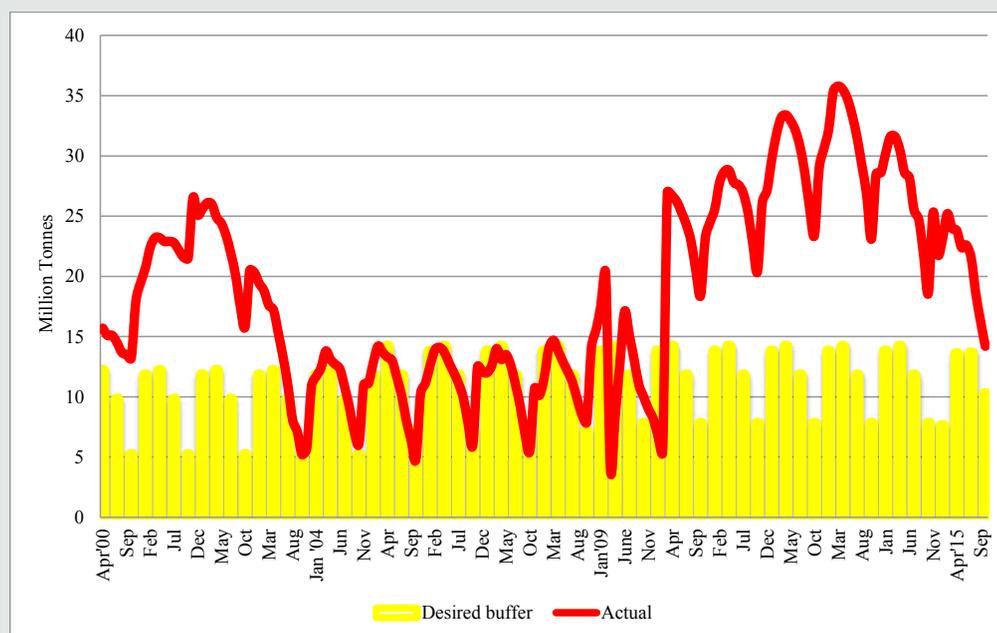
Note: Stocks are only government stocks. Total use is the residual and includes private stocks change. E- Estimate; F- Forecast. 1/ Residual, includes PDS and other programs +storage losses

### IV.1.5 Stocks

Government rice stocks on October 1, 2015, stood at 14.2 million tonnes (including 1.58 million tonnes of milled rice equivalent of paddy), down 24 per cent from 18.6 million metric tonnes a year ago, which although 34 per cent more than the required buffer and strategic stocks norm of around 10.3 million tonnes for this time of the year, is the lowest since 2008-09. Despite a marginal increase in rice procurement in MY 2014-15, estimated at 32.1 million tonnes, the drop in stocks was mainly due to larger offtake of rice through the PDS estimated at around 3 million tonnes per month, 22 per cent more than the monthly offtake during 2013-14. This was in response to government decision to allocate more rice to the PDS to contain food inflation. The likelihood of a marginal decline in rice procurement in MY 2015-16 due to lower production combined with larger offtake through PDS could result in a further drawdown in government rice stocks by the end of MY 2015-16 to a projected 8.2 million tonnes on October 1, 2016, below the desired buffer stock plus security stock level (Table IV.1.1). The government's decision to cap levy rice procurement by states at 25% could reduce procurement on government account, but infuse additional rice availability in open market and help to keep rice price inflation under check.

The government's decision to cap levy rice procurement by states at 25% could reduce procurement on government account, but infuse additional rice availability in open market and help to keep rice price inflation under check.

Figure IV.1.3: Government Rice Stocks vis-à-vis Desired Buffer + Strategic Stocks



## Assessment

A 14 per cent deficiency in 2015 monsoon season (June–September) rainfall from the LPA and its skewed spatial and temporal distribution resulted in 2015–16 *kharif* rice production remaining more or less unchanged from the 2014–15 drought impacted *kharif* output, which according to the Ministry of Agriculture’s 1st AE, is 90.61 million tonnes. Like last year, formulation and effective implementation of contingency plans helped to minimize production losses. The 2015–16 *rabi* rice production is also expected to be somewhat lower than the 2014–15 *rabi* production of 13.94 million tonnes at a projected 13.0 million tonnes due to poor post monsoon-rains and lower water table in reservoirs, taking total 2015–16 rice production to 103.5 million tonnes, a decline of about 1.3 million tonnes from the 2014–15 production. Rice price inflation has slowed in recent months, largely due to increased distribution through the PDS. However, government-held rice stocks have dipped 24 per cent y-o-y to 14.2 million tonnes on October 1, 2015 and are projected to decline to 8.2 million by the end of the 2015–16 marketing year on September 30, 2016, the lowest level since 2008–09. The overall stocks-to-use ratio is also forecast to decline to one of the lowest levels in recent years, making 2016–17 vulnerable to price volatility, in case the monsoon turns out to be poor like in 2014 and 2015. India’s rice exports in MY 2015–16 (Oct–Sep) are forecast to decline to 9.0 million tonnes from 11.7 million tonnes in MY 2014–15, thus losing its top-most rice exporter position due to stiff competition from traditional Southeast Asian rivals like Thailand and Vietnam and new emerging exporters such as Myanmar and Cambodia.

## IV. 2 Wheat

### IV.2.1 Wheat production outlook subdued

Reflecting the various adverse factors impacting crops outlook this year listed in Part III, most importantly the rainfall and irrigation -related factors, wheat production in 2016

2015–16 *kharif* rice production remaining more or less unchanged from the 2014–15 drought impacted *kharif* output

The 2015–16 *rabi* rice production is also expected to be somewhat lower than the 2014–15 *rabi* production of 13.94 million tonnes at a projected 13.0 million

Rice price inflation has slowed in recent months, largely due to increased distribution through the PDS.

India’s rice exports in MY 2015–16 (Oct–Sep) are forecast to decline to 9.0 million tonnes from 11.7 million tonnes in MY 2014–15

(MY 2016-17) is unlikely to show any significant improvement over the 2015 production of 88.94 million tonnes, the lowest since 2010. Wheat production in 2015 was impacted by unseasonal heavy rains in major growing areas at harvest time, which not only pulled down production but also caused quality deterioration. Initial reports indicate that this year's wheat planting is lagging behind last year's level. Although too early, we are currently forecasting 2016 wheat production at 88.5 million tonnes, assuming normal weather through harvest.

Government's latest production estimate (4th AE) pegs 2015 (MY 2015-16) wheat production at 88.94 million tonnes, a 7.2 per cent decline over the 2014 record production of 95.85 million tonnes. The decline in production in 2015 was solely due to a decline in per hectare yield, exacerbated by untimely heavy rains at harvest time. As a result the government continuously revised the production estimate downward from 95.76 million tonnes (2nd AE made in mid-February 2015) to 90.78 million tonnes (3rd advance estimate made in mid-May) and to 88.94 million tonnes (4th AE made in mid-August 2015).

There are recent scientific studies to highlight the vulnerability of India's wheat production system to climate change<sup>28</sup>, which could have serious implications in the future. Greater warmth during the reproductive and ripening periods, in particular, was found to have a significant negative impact on wheat productivity. Of late, occurrences of untimely heavy rains are also proving to be detrimental to wheat production, both quantity and quality. Yellow rust is also emerging as a major threat to wheat productivity. However, there are reported advances in breeding more suitable varieties of the crop that can withstand some of the changes in climate.

## IV.2.2 Consumption declines

Based on food balance sheet analysis, wheat consumption (estimated as residual in the food balance sheet) residual in MY 2015-16 is forecast to decline by around 2 per cent to 91.3 million tonnes due to lower production. Despite a likely 3 per cent increase in offtake through the PDS in government efforts to contain wheat price inflation, government wheat sales through tenders, mostly bought by millers in South India, is likely to decline due to quality issues. Furthermore, open market availability is likely to be reduced due to lower production and larger share of government wheat procurement from domestic production in MY 2015-16 (31.6%) compared to 29.2% in MY 2014-15. (Table IV.2.1)

**Table IV.2.1: Govt. Operations in Wheat**

Marketing Year (Apr-Mar)	Beginning stocks MMT	MSP Rs. per MT	Govt Procurement MMT	PDS Monthly Offtake MMT*	Exports MMT	PDS Issue Price Rs. Per tonne			Ending Stocks MMT
						APL	BPL	AAY	
2003/04	15.6	6,300	15.8 [24.0]	2.03		6,100	4,150	2,000	6.9
2004/05	6.9	6,300	16.8 [23.3]	1.41		6,100	4,150	2,000	4.1
2005/06	4.1	6,400	14.8 [21.6]	1.39		6,100	4,150	2,000	2.0
2006/07	2.0	6,500	9.2 [13.3]	0.99		6,100	4,150	2,000	4.7
2007/08	4.7	8,500	11.1 [14.6]	1.02		6,100	4,150	2,000	5.8
2008/09	5.8	10,000	22.7 [28.9]	1.24		6,100	4,150	2,000	13.4

<sup>28</sup><http://www.int-res.com/abstracts/cr/v59/n3/p173-187/>

2009/10	13.4	10,800	25.3 (31.4)	1.87		6,100	4,150	2,000	16.1
2010/11	16.1	11,000	22.5 (25.9)	1.93		6,100	4,150	2,000	15.3
2011/12	15.3	11,700	28.3 (32.0)	2.02	0.100	6,100	4,150	2,000	20.0
2012/13	20.0	12,850	38.1 (40.1)	2.51	2.973	6,100	4,150	2,000	24.2
2013/14	24.2	13,500	25.1 (26.8)	2.35	2.647	6,100	2,000**	2,000**	17.8
2014/15	17.8	14,000	28.0 (29.2)	2.43	0.327	6,100	2,000**	2,000**	17.2
2015/16	17.2	14,500	28.1 (31.6)	2.50	0	6,100	2000**	2,000**	15.3

\* On Fiscal Year (Apr-Mar) basis and includes open market sale. \*\* Under NFSA

\* On Fiscal Year (Apr-Mar) basis and includes open market sale. \*\* Under NFSA

PDS = Public Distribution System; APL = Above Poverty Line; BPL = Below Poverty Line; AAY = *Antyodaya Anna Yojana* (Poorest of the Poor). E –estimate; F- forecast

*Note: Figures in parenthesis show government procurement as per cent of production. Total use is residual and would include private stocks change.*

Source: Food Corporation of India, Directorate of Economics and Statistics, NCAER Estimate

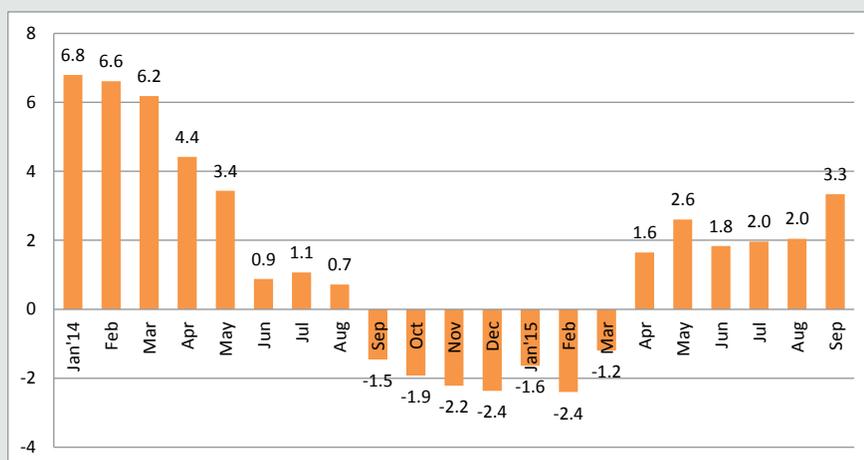
### IV.2.3 Wheat price inflation firms

Year-on-year wheat price inflation measured by wholesale price index continued to weaken in 2014 and contrary to the normal cyclical trend, turned negative since September 2014 through March 2015 (the lean period) as the government started releasing more wheat through the PDS and in open market sale. However, wheat price inflation turned positive since April 2015 and reached 3.3 per cent in September 2015, the latest month for which data is available, reflective of lower production in 2015 and quality problems (Figure IV.2.1). Although the government continued to offer wheat to millers from its stocks this year, due to the poor quality of the wheat in government inventory, millers were not interested and preferred to import wheat, mostly from Australia, to meet their requirement. According to trade sources the private trade/miller import of wheat is around one million tonnes. However, with the government imposing an import duty on wheat at 10 per cent which was later increased to 25 per cent, additional private imports are unlikely in MY 2015-16.

Regarding future outlook, wheat prices are likely to remain firm until the next harvest in April 2016. Price situation in MY 2016-17 will depend on the production next year, which is not optimistic at this stage. Private traders and flour millers are likely to remain more active in purchasing wheat from the domestic market, which could result in lower wheat procurement by the government.

**Wheat prices are likely to remain firm until the next harvest in April 2016.**

**Figure IV.2.1: Wheat Price Inflation: WPI (%YOY)**

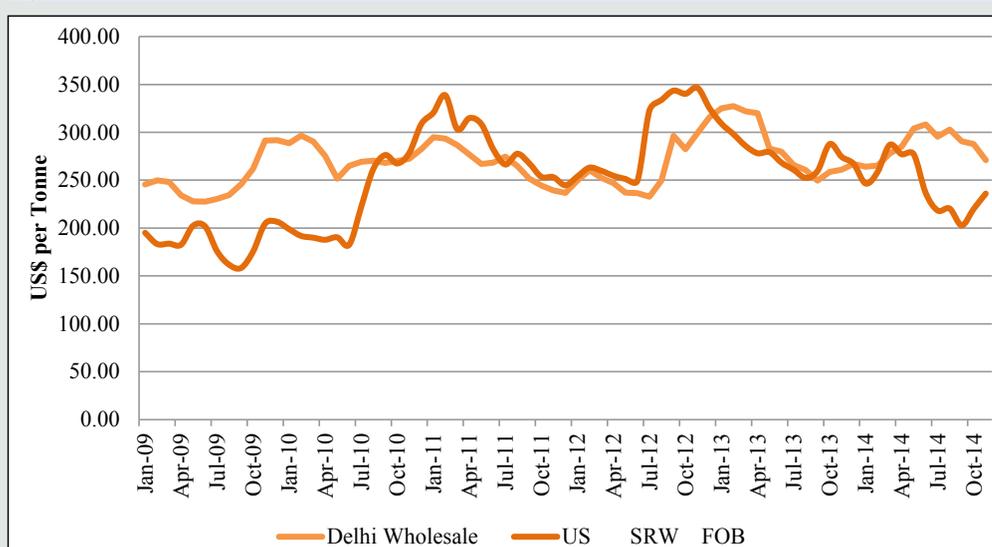


Indian wheat exports in MY 2015-16 and MY 2016-17 will face increased competition from near record global production.

### IV.2.4 Export outlook bleak

Indian wheat exports in MY 2015-16 and MY 2016-17 will face increased competition from near record global production. Lower wheat stocks with the government combined with low export prices due to a global glut (Figure IV.2.2 ) discouraged wheat export allocation from government stocks except for some carry over from the previous year. Limited wheat exports on private account took place. According to official trade statistics, exports (including wheat equivalent of flour) during MY 2015-16 through August were 540,000 tonnes, compared to 3.4 million tonnes in MY 2014-15 and 6.0 million tonnes in MY 2013-14. A further decline in government stocks and a lower production outlook for MY 2016-17, combined with likely lower global wheat prices could result in a further drop in wheat exports in MY 2016-17. However, large quantity of damaged wheat in government inventory and poor interest for this type of wheat by Indian flour millers, could prompt the government to offer wheat for exports. As stated earlier, wheat imports by south Indian millers due to poor quality of available domestic wheat is estimated by trade sources at 1 million tonnes.

Figure IV.2.2 Indian Wholesale Wheat Price vis-à-vis US SRW Wheat Price FOB



**Note:** US SRW has typically sells at a premium over Indian wheat. Indian FOB price will be higher than the indicated Delhi wholesale price by around \$40 per tonne on account of transportation cost and other handling charges.

**Source:** US Price – World Bank; Indian Price- Department of Consumer Affairs;

### IV.2.5 Stocks down

Government wheat stocks on April 1, 2015, were 17.2 million tonnes, a marginal decline over a year ago level. Socks on October 1, 2015, were 32.5 million tonnes, well above the government’s desired buffer+ strategic stocks level of 25.2 million tonnes (Figure IV.2.3). With larger offtake of wheat through PDS expected during October 2015 through March 2016, government wheat stocks are projected to decline to around 15.3 million tonnes on April 1, 2016, about 2 million tonnes below the stocks on April 1, 2015. Furthermore, because of the government’s relaxed wheat procurement norms for MY 2015<sup>29</sup>, a significant share of wheat now in government inventory is of poor quality. The stocks-to-use ratio is

<sup>29</sup>See: <http://fci.gov.in/procurements.php?view=91>

also likely to dip to 16.8% in MY 2015-16, the lowest in recent years. Due to a possible decline in wheat procurement in MY 2016-17 due to likely lower production and larger private trade purchases, government-held wheat stocks are likely to further decline by the end of MY 2016-17, but still significantly above the stipulated buffer+ strategic stocks of 7.46 million tonnes on April 1. The supply demand balances for wheat with estimate for MY 2015-16 are summarised in Table IV.2.2. The same for MY 2016-17 will be made in our next Rabi Outlook Report.

Figure IV.2.3. : Government Wheat Stocks vis-à-vis Desired Buffer + Strategic Stocks

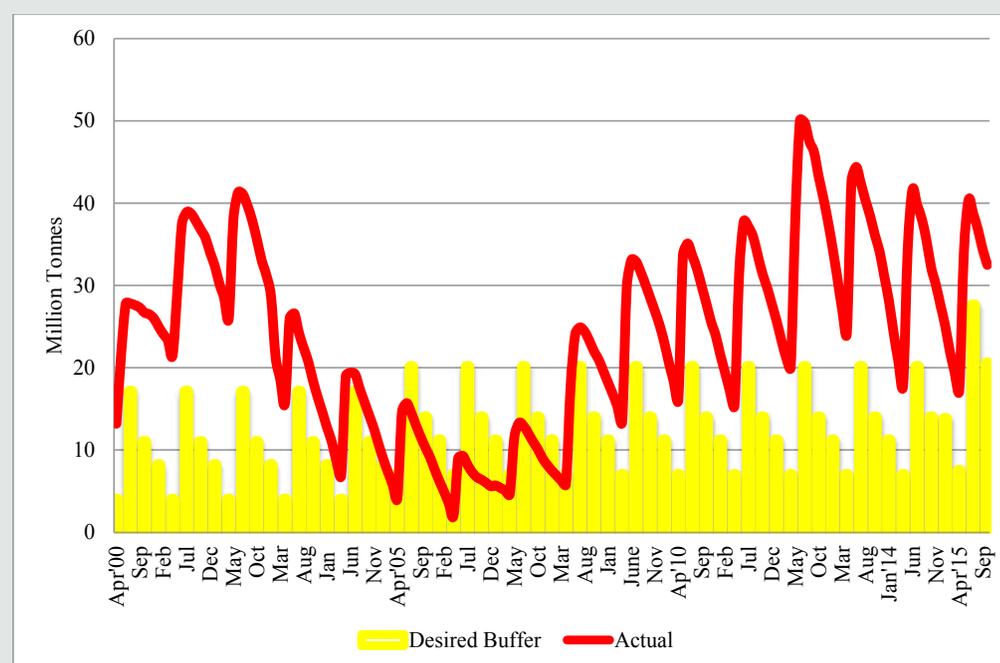


Table IV.2.2: Supply and Demand Balance for Wheat (1000 metric tonnes)

Particulars	2013-14 Apr-Mar	2014-15 Apr-Mar	2015-16F Apr-Mar
Production	93,510	95,850	88,940
Beginning Stocks (with government)	24,207	17,834	17,221
Imports	14	32	1,000
<b>Total Supply</b>	<b>117,731</b>	<b>113,716</b>	<b>107,161</b>
Exports	6,040	3,380	540
Food Use	88,357	87,115	86,321
Seed, Feed, Waste, Other	5,500	6,000	5,000
<b>Total Use</b>	<b>93,857</b>	<b>93,115</b>	<b>91,321</b>
Ending Stocks (with government)	17,834	17,221	15,300
<b>Total Distribution</b>	<b>117,731</b>	<b>113,716</b>	<b>107,161</b>
Stocks to Use Ratio %	19.0	18.5	16.8

Wheat production is now expected to be somewhat lower than the 2015 poor weather-impacted production of 88.9 million tonnes.

Wheat exports in MY 2015-16 are likely to remain low due to likely lower production and lower government procurement.

Government-held wheat stocks are likely to be around 15.3 million tonnes on April 1, 2016, about 2 million tonnes below the stocks on April 1, 2015.

A significantly below normal monsoon rainfall in major coarse growing regions this year has negatively impacted the mostly rain-fed kharif coarse grain production in 2015-16.

The rabi outlook for coarse grains which include maize, barely and jowar is also not promising, although official planting data as on October 30, 2015, shows sowing this year is ahead of last year.

## Assessment

Based on progressive planting report and taking into consideration various negative factors impacting wheat production, particularly the irrigation water availability, the 2016 (MY 2016-17) wheat production is now expected to be somewhat lower than the 2015 poor weather-impacted production of 88.9 million tonnes. Despite lower production, procurement of wheat in MY 2015-16 was not adversely affected as the government relaxed quality norms for wheat procurement in major growing states in order to reduce the hardship of farmers and to avoid distress sale of wheat. However, this resulted in government overloaded with large quantity of sub-normal quality wheat, which the domestic millers do not prefer. To meet their requirement of quality wheat, millers, particularly in South India, started importing wheat, mostly from Australia. Trade sources estimate such imports at about one million tonnes. To check imports, the government imposed 10 per cent import duty on wheat, which was later enhanced to 25 per cent, which would effectively block additional imports. Wheat exports in MY 2015-16 are likely to remain low due to likely lower production and lower government procurement. However, there is a likelihood of government releasing some low quality wheat in its inventory for exports. With larger offtake of wheat through PDS expected during October 2015 through March 2016, and a possible decline in wheat procurement in MY 2016-17 due to likely lower production and larger private trade purchases, government-held wheat stocks are likely to be around 15.3 million tonnes on April 1, 2016, about 2 million tonnes below the stocks on April 1, 2015. The stocks-to-use ratio is estimated to decline to the lowest level in recent years.

## IV.3 Coarse Grains

### IV.3.1 Significant decline in 2015-16 production

A significantly below normal monsoon rainfall in major coarse growing regions this year has negatively impacted the mostly rain-fed *kharif* coarse grain production in 2015-16. According to government's first advance estimate, kharif coarse grain production in 2015-16 is estimated at 27.9 million tonnes, close to current NCAER forecast of around 28 million tonnes, about 2 million tonnes below the 2014-15 drought-reduced output of 29.8 million tonnes (4th AE), the lowest since 2010-11. The 2015-16 kharif coarse grain production (1st AE) by type with the 2014-15 production (4th AE) within parentheses, in million metric tonnes are: maize – 15.51 (16.39); jowar – 1.87 (2.01); bajra – 8.64 (9.05); and other millet – 1.74 (2.60).

The *rabi* outlook for coarse grains which include maize, barely and jowar is also not promising, although official planting data as on October 30, 2015, shows sowing this year is ahead of last year by almost 100 per cent at 2.7 million hectares, with most of the increase expected to be in maize. However, considering the poor post-monsoon and north-east monsoon rainfall so far, it is doubtful whether this sowing tempo will be sustained, especially for jowar. However, it is likely that the decline in rabi maize production could be only marginal from the previous year's level of 7.3 million tonnes, currently forecast at 7.0 million tonnes, taking total 2015-16 production to 22.5 million tonnes, a decline of 5.0 per cent from 2014-15.

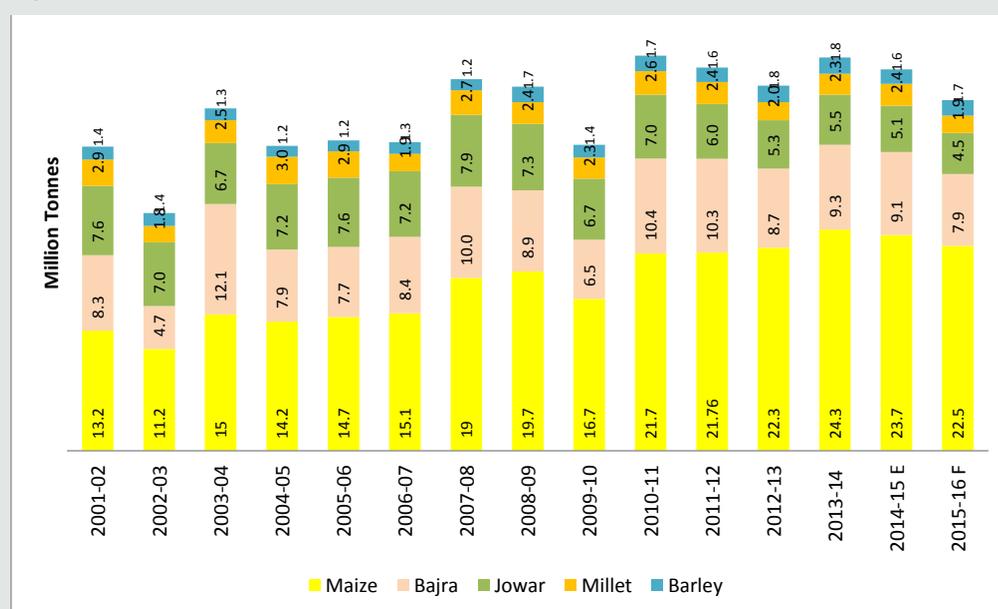
Coarse grain production has shown a mixed growth trend over the past years. With the exception of maize, most other coarse grains have lost their growth momentum due to lower productivity and profitability, wide year-to-year fluctuations in yields due to its dependence on monsoon rains and lack of an effective market support mechanism unlike

that for wheat and rice. Competition from commercial crops such as soybeans and cotton has caused erosion in planted area under most of these crops. However, maize has been an exception as increasing demand from the growing feed and starch industry, increased use of hybrid seeds and increasing export demand gave a fillip to production, which has registered a steady growth over the past few years (Figure IV.3.1). There is a potential to expand production of other coarse grains such as jowar and ragi, with the rising awareness of nutritive benefits of these grains globally.

### IV.3.2 Consumption, Price and Trade

The demand for coarse grains as a food source is shrinking as, with increasing income and larger availability of wheat and rice through the PDS, consumers are shifting from coarse grains to finer grains. Although the government has included coarse grains in the National Food Security Act to be distributed through the PDS at a subsidised rate of Rs. 1 per Kg, no substantial distribution is likely unless the government starts procuring coarse grains. Although food use of maize has shrunk, there has been a significant increase in the non-food usage of corn – mainly for feed and starch and starch derivatives in recent years. According to industry sources almost two-third of annual maize production goes for feed use and about 16 per cent for industrial use mainly starch. A growing poultry sector is generating increased demand for maize for feed use. There is also a potential to expand production and export of other coarse grains such as Jowar and ragi, with the rising global awareness of nutritive benefits of these grains.

Figure IV.3.1 Coarse Grain Production Trend



Indian domestic prices of maize (in US\$ terms) remained somewhat below the global prices for several months during November 2010 through July 2014 (Figure IV.3.2) facilitating larger exports, mostly to neighbouring countries. However, with a steep fall in global prices in recent years, Indian maize prices in US\$ terms ruled above world prices, negatively impacting exports. India's maize shipments have slowed down as overseas buyers are shifting to the cheaper origin maize in South America and the U.S. A significant decline in Indian maize production in 2015-16 due to poor monsoon rains could result in further strengthening of Indian prices and lower exports in MY 2015-16, currently forecast

The demand for coarse grains as a food source is shrinking as, with increasing income and larger availability of wheat and rice through the PDS.

There is also a potential to expand production and export of other coarse grains such as Jowar and ragi, with the rising global awareness of nutritive benefits of these grains.

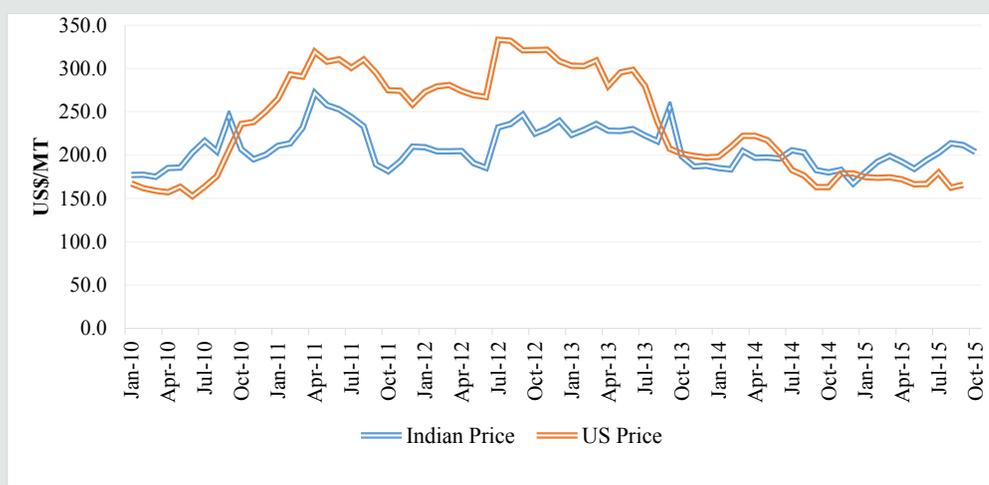
A significant decline in Indian maize production in 2015-16 due to poor monsoon rains could result in further strengthening of Indian prices and lower exports in MY 2015-16

If domestic prices continue to strengthen, there is a possibility of the feed industry and the starch industry demanding access to global market to meet their requirement as in the case of wheat.

at 800,000 marginally down from 2014-15, compared to about 3.8 million tonnes in MY 2013-14.

On a fiscal year basis (Apr-Mar), Indian maize exports in 2014-15 were around 2.8 million tonnes compared to 4.0 million tonnes in 2013-14 and 4.8 million tonnes in 2012-13. Major destinations were Indonesia, Malaysia, Vietnam, and Bangladesh, and Nepal. Exports during IFY 2015-16 through August were around 360,000 tonnes, significantly below exports during the corresponding period of 2014-15. If domestic prices continue to strengthen, there is a possibility of the feed industry and the starch industry demanding access to global market to meet their requirement as in the case of wheat.

Figure IV.3.2: Maize price comparison – India vs. U.S.



Note: Indian price – wholesale price at Nizamabad market, Telangana. U.S. Price # 2 yellow FOB  
Source: World Bank and Agricultural Marketing Information Network, Ministry of Agriculture

Table IV.3.1 Demand Supply Balance Sheet for Maize ('000 tonnes)

Particulars	2013-14 E Oct-Sep	2014-15 F Oct-Sep	2015-16 F Oct-Sep
Opening stocks	550	1,000	1,000
Production	24,260	23,670	22,500
Imports	20	20	50
Domestic Availability	24,830	24,690	23,550
Exports	3,800	1,000	800
Domestic Utilisation	20,030	22,690	22,250
Closing Stocks	1,000	1,000	500

There could be a marginal decline in rabi maize production currently forecast at 7.0 million tonnes compared to 7.3 million tonnes in 2014-15.

### Assessment

A significantly below normal rainfall this year in major coarse growing regions negatively impacted the mostly rain-fed kharif coarse grain production in 2015-16, currently estimated by the government at 15.51 million tonnes, almost 1 million tonnes below 2014-15 official kharif production estimate. There could be a marginal decline in *rabi* maize production currently forecast at 7.0 million tonnes compared to 7.3 million tonnes in 2014-15 due to poor post-monsoon rains and irrigation constraints, taking total 2015-16 maize production

to 22.5 million tonnes, a decline of 5.0 per cent from 2014-15. With a steep fall in global prices in recent years, Indian maize prices are now ruling above world prices, negatively impacting exports. A likely decline in Indian maize production in 2015-16 could result in further strengthening of Indian prices and lower exports in MY 2015-16, currently forecast at 800.000 tonnes or even lower. There could be even clamouring from the domestic feed and starch industry for access to imported maize.

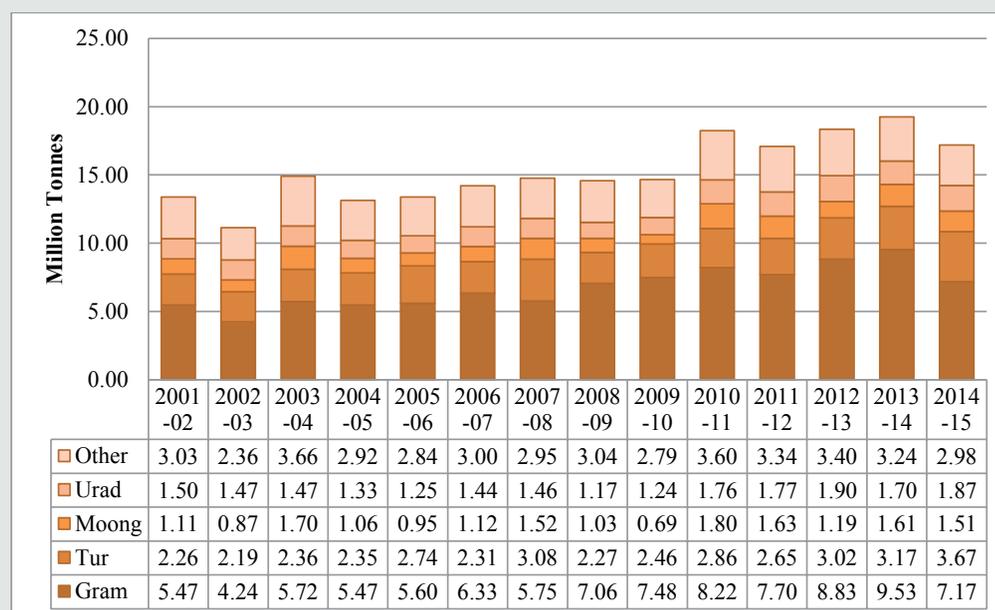
## IV.4 Pulses

### IV.4.1 Production forecast to decline

For the second consecutive year, a significant rainfall deficiency in major pulse growing regions this year resulted in a marginal decline in 2015-16 kharif pulse production, now officially placed at 5.56 million tonnes (1st AE), close to NCAER forecast of 5.4 million tonnes, on top of a 5 per cent decline in 2014-15 kharif pulse production. This is the lowest production level since 2009-10 (Figure IV.4.1). The 2015-16 kharif pulse production (1st AE) by type with the 2014-15 production (4th AE) within parentheses in million tonnes are: tur – 2.61 (2.78); urad – 1.37 (1.27); mung – 0.86 (0.85); other kharif pulses – 0.72 (0.73).

Progressive planting report of 2015-16 rabi crops as on October 30, 2015, shows rabi pulse planting this year is lagging marginally behind planting during the corresponding period of last year. Considering the poor post-monsoon rains this year, which as on October 28 was 52 percent below normal, outlook for rabi pulse production is not promising. Currently we forecast rabi season pulse production at 11 million tonnes compared to 11.6 million tonnes in 2014-15, taking total 2015-16 pulse production to 16.5 million tonnes, 4 percent below the 2014-15 production of 17.2 million tonnes.

Figure IV.4.1: Trend in Pulse Production by Type



### IV.4.2 Consumption, trade and price

Despite record imports in 2014-15, India's per capita pulse consumption is estimated to have declined to about 46 grams per day, compared to around 50 grams in 2013-14 as

A likely decline in Indian maize production in 2015-16 could result in further strengthening of Indian prices and lower exports in MY 2015-16

For the second consecutive year, a significant rainfall deficiency in major pulse growing regions this year resulted in a marginal decline in 2015-16 kharif pulse production

We forecast rabi season pulse production at 11 million tonnes compared to 11.6 million tonnes in 2014-15, taking total 2015-16 pulse production to 16.5 million tonnes, 4 percent below the 2014-15 production of 17.2 million tonnes.

No significant change in per capita pulse consumption is expected in 2015-16, although imports are likely to scale to a new record due to forecast lower production for the second consecutive year.

Pulse imports in FY 2014-15 are officially placed at 4.64 million tonnes, an increase of 27 per cent over 2013-14.

Imports are likely to scale a new high 5.5 million tonnes in 2015-16.

increase in imports was not adequate to offset the decline in production. No significant change in per capita pulse consumption is expected in 2015-16, although imports are likely to scale to a new record due to forecast lower production for the second consecutive year.

Pulse imports in FY 2014-15 are officially placed at 4.64 million tonnes, an increase of 27 per cent over 2013-14 (Figure IV.4.2). Most of the increase in pulse imports was in dry peas, imported mostly from Canada and the U.S. Imports by type of pulses and by country of origin are shown in Figure IV.4.1. Imports are likely to scale a new high 5.5 million tonnes in 2015-16, as the government parastatals such as the State Trading Corporation of India (STC) and Minerals and Metals Trading Corporation of India (MMTC) are also asked to import pulses and supply it through PDS and other distribution channels at subsidized prices to check the spiralling domestic prices. The government has agreed to reimburse the government trading companies for the losses incurred by them. According to a study by a reputed Industry and Trade Association (ASSOCHAM)<sup>30</sup>, India's pulse imports are projected to scale to 10 million tonnes in 2015-16, which appears to be very much on the higher side considering global availability. Pulse production in Myanmar, a major supplier of pulses to India, is reported to have declined due to untimely rains in late July and early August.

**Table IV.4.1: India – Imports of Pulses by Country of Origin (1000 tonnes)**

Country/Pulses	2012-13	2013-2014	2014-2015	2015-2016 (Apr-Aug)
<b>Dry peas</b>				
Canada	709	939	1,538	482
U s a	124	111	197	33
Australia	119	82	79	41
Russia	218	147	74	35
Ukraine	47	20	56	2
Other	154	30	9	7
<b>Total</b>	<b>1,371</b>	<b>1,330</b>	<b>1,952</b>	<b>600</b>
<b>Lentil</b>				
Canada	396	562	652	297
Usa	42	76	104	22
Australia	68	70	57	15
Other	130	1	3	0
<b>Total</b>	<b>506</b>	<b>709</b>	<b>817</b>	<b>335</b>
<b>Chickpeas</b>				
Australia	489	170	191	113

<sup>30</sup><http://www.assochem.org/newsdetail.php?id=5300>

(Contd...)

Table IV.4.1: (Contd...)

Russia	99	63	163	116
Tanzania rep	39	22	20	4
Myanmar	33	18	14	9
U s a	8	1	10	3
Ukraine	1	0	6	1
Ethiopia	9	0	5	13
Canada	1	1	4	4
Turkey	0	0	2	0
Mexico	11	0	2	4
Argentina	5	0	0	3
Other	2	1	1	6
<b>Total</b>	<b>698</b>	<b>276</b>	<b>419</b>	<b>275</b>
<b>Pigeon peas</b>				
Myanmar	0	239	0	0
Tanzania rep	0	128	0	0
Mozambique	0	69	0	0
Malawi	0	21	0	0
Kenya	0	8	0	0
Other	25	1	8	14
<b>Total</b>	<b>25</b>	<b>466</b>	<b>8</b>	<b>14</b>
<b>Mung beans</b>				
Myanmar	508	517	533	283
Tanzania rep	15	26	35	16
Uzbekistan	13	11	12	0
Mozambique	10	10	9	2
Kenya	13	22	9	10
Ethiopia	7	0	7	0
Australia	44	19	4	28
Argentina	7	4	4	5
Afghanistan tis	4	7	3	0
Indonesia	13	0	3	0

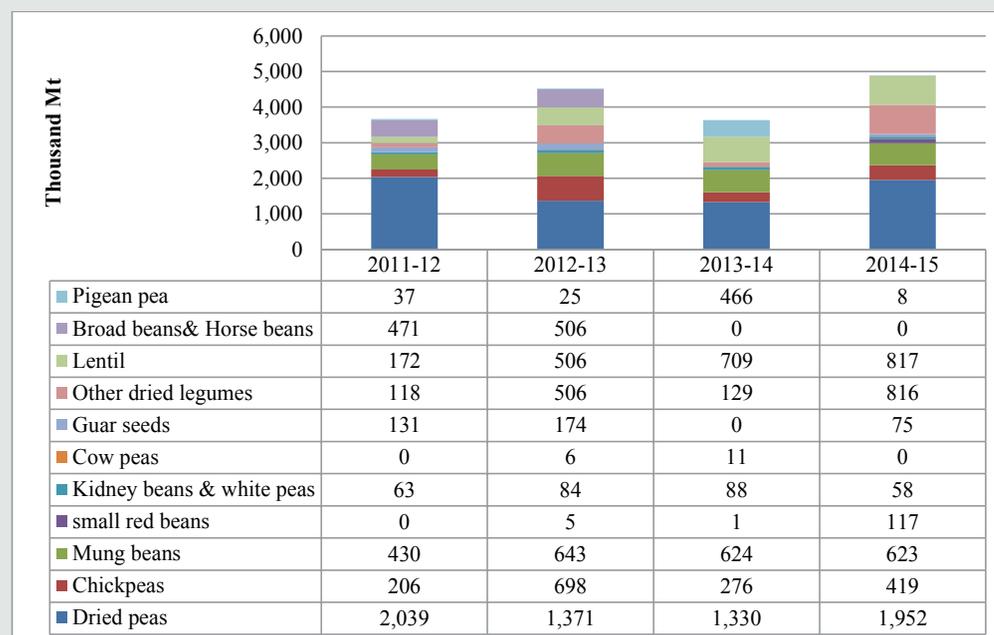
(Contd...)



Table IV.4.1: (Contd...)

Madagascar	1	1	1	2
Other	9	7	2	1
<b>Total</b>	<b>643</b>	<b>624</b>	<b>623</b>	<b>348</b>
<b>Broad beans&amp; Horse beans</b>				
Myanmar	79	98	69	47
Pakistan ir	1	3	3	0
Tanzania rep	12	3	2	1
Afghanistan	9	6	0	0
Mozambique	7	0	0	0
Madagascar	13	4	0	0
Malawi	2	0	0	0
Brazil	26	7	0	1
France	10	0	0	0
Turkey	1	0	0	0
Other	436	8	742	286
<b>Total</b>	<b>596</b>	<b>129</b>	<b>816</b>	<b>335</b>

Figure IV.4.2. Pulse Imports by Type (Thousand Metric Tonne)

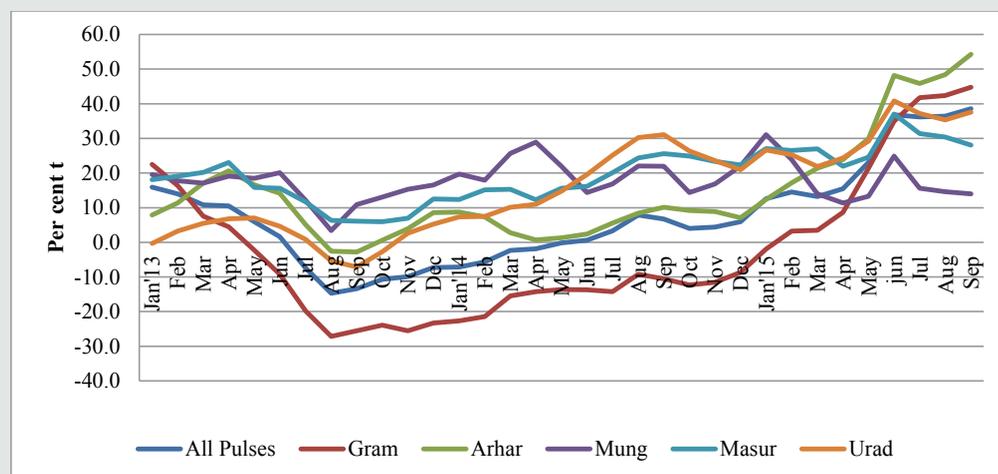


Prices started shooting up since January 2015 reaching two-digit level with y-o-y price rise skyrocketing to 38.6 per cent.

Domestic year-on-year price inflation for pulses as a group measured by Wholesale Price Index remained in the negative territory during July 2013 through May 2014, but became positive since June 2014 largely due to increasing prices of mung, urad and masur (Figure IV.4.3) in response to poor monsoon performance, resulting in lower production. Prices

started shooting up since January 2015 reaching two-digit level with y-o-y price rise skyrocketing to 38.6 per cent (measured by wholesale price index) to close to 39 percent in September 2015 (Figure IV.4.3). The pulse price inflation was ignited mostly by arhar (pigeon pea or tur), gram (chickpea) and masur (lentil) although prices of other pulses also hardened modestly.

Figure IV.4.3. Wholesale Price Inflation Trend in Pulses (% change in 2014 over 2013)



To contain the spiralling prices of pulses, a major source of protein in the Indian diet, the central government initiated various policy measures on a war footing. These included authorizing government trading companies such as MMTC and STC to import pulses in large quantities for supplying through PDS and other distribution channels at subsidized prices with the government absorbing the losses, imposing stocks limit on pulses under the essential commodities and asking state governments to intensify de-hoarding operations, building up buffer stocks of pulses and allocating large funds for price stabilization operation which will be used to buy pulses directly from farmers.

Table IV.4.2. Demand and Supply Balance Sheet for Pulses (000 tonnes)

Total pulses	2012-13	2013-14	2014-15 E	2015-16 F
Production	18,340	19,250	17,200	16,500
Imports	4,020	3,655	4,640	5,500
Total supply	22,360	22,905	21,840	22,000
Total Export	200	200	100	50
Domestic Use	22,160	22,705	21,740	21,950
Total utilization	22,360	22,905	21,840	22,000
% imports to production	22	19	27	33

E-estimate; F- forecast

## Assessment

Poor monsoon rains in major pulse growing regions for the second consecutive year this year resulted in lower kharif pulse production in MY 2015-16. Adverse growing conditions are likely to cause a significant decline in rabi pulse production as well based on progressive sowing data and weather developments. Currently we forecast total MY 2015 -16 pulse

Poor monsoon rains in major pulse growing regions for the second consecutive year this year resulted in lower kharif pulse production in MY 2015-16.

Adverse growing conditions are likely to cause a significant decline in rabi pulse production as well

Despite government attempts to control domestic pulse prices through imports and de-hoarding operations, prices are likely to remain firm in 2015-16 due to lower supplies.

The government's recent decision to build a buffer stock of pulses through direct procurement from farmers and setting up a price stabilization fund should help to mitigate price spikes.

production at 16.5 million tonnes, 700,000 tonnes below the 2014-15 production, which was 2 million tonnes down from the record 2013-14 production of 19.3 million tonnes. The production decline will be partly offset by larger imports forecast at 5.5 million tonnes compared to 4.64 million tonnes in 2014-15, but not adequate to bridge the widening demand-supply gap, as production in major exporting countries will not be adequate to meet Indian demand at an affordable price. Despite government attempts to control domestic pulse prices through imports and de-hoarding operations, prices are likely to remain firm in 2015-16 due to lower supplies. As long as farmers with access to irrigated land are not interested in growing pulses, due to production and price risk, supply and price shocks will keep haunting consumers and governments. The government's recent decision to build a buffer stock of pulses through direct procurement from farmers and setting up a price stabilization fund should help to mitigate price spikes. However, the ultimate goal should be to increase productivity through better seeds, improved agronomic practices and setting up of better price support operation.

## IV.5 Oilseeds and Edible Oils

### IV.5.1 Kharif Oilseeds

The government's first AE for 2015-16 agricultural production pegs total kharif oilseed production of nine major oilseeds, which include non-edible oil sources such as castor seed, at 19.89 million tonnes, 1.56 million tonnes more than the 4th AE for 2014-15 of around 18.33 million tonnes. Most of the increase is in soybeans estimated at 11.83 million tonnes. The 2014-15 rabi oilseed production is estimated at 8.35 million tonnes, including 6.31 million tonnes of rapeseed/mustard and 1.48 million tonnes of groundnut, taking total 2014-15 oilseed production to 26.67 million tonnes. According to the latest data available from the Ministry of Agriculture, total area under kharif oilseeds is 18.4 million hectare, up 3.8 per cent from 17.73 million hectare during the corresponding period of last year. Progressive sowing of various kharif oilseed crops as on October 1, 2015, with the corresponding sowing a year ago is summarised in Table IV.5.1. Despite the increase in soybean sown area, the 14 per cent deficiency in this year's South West monsoon rains from the LPA has negatively impacted in kharif season oilseed seed crop yields in general and soybean yield in particular.

**Table IV.5.1: Sowing of Kharif Oilseeds (lakh hectare)**

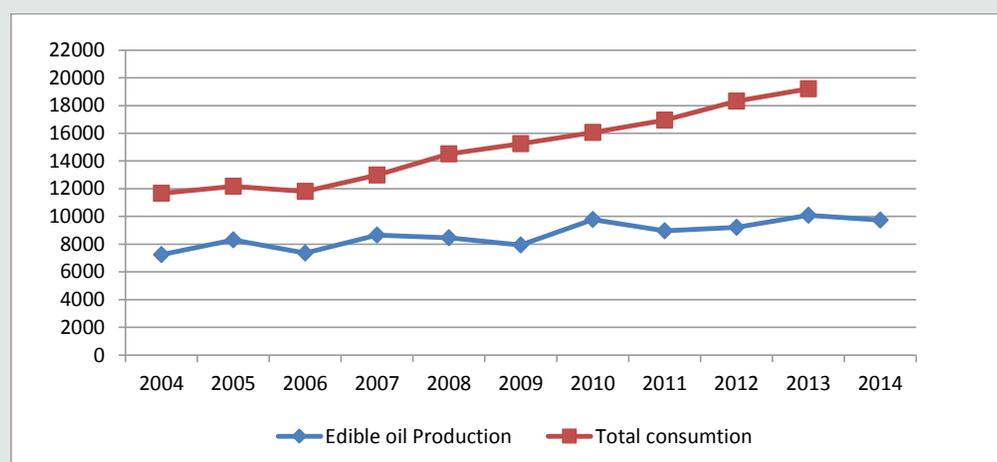
Crop	1 <sup>st</sup> Oct-14	1 <sup>st</sup> Oct -15	% Change
Groundnut	37.21	36.56	-1.7
Soybean	110.23	116.29	5.5
Sunflower	1.95	1.50	-23.1
Sesame	16.34	17.22	5.4
Niger seed	1.62	1.61	-0.6
Castor seed	9.90	10.82	9.3
Total Oilseeds	177.25	184.00	3.8

**Source:** Weather Watch Reports, Ministry of Agriculture.

## IV.5.2 Consumption and Price

Fluctuating domestic production of oilseeds has a direct impact on the edible oil sector, with domestic prices and imports increasing in periods of low domestic production. India's edible oil consumption is estimated at around 18-19 million tonnes in 2013-14. Although consumption has grown steadily over the past few decades, and is projected to increase at the same pace over the medium term, year-on-year consumption growth rate has varied depending on availability and price. A rising population and increasing prosperity are stoking vegetable oil demand in India. During oil year (October –September) 2004-05 to 2013-14, edible oil production grew at the rate of 3.36 per cent per year and consumption increased at 5.10 per cent. Edible oil production in 2014-15 is estimated at 9.74 million tonnes.

Figure IV.5.1: Edible oil Production and Consumption (Oil Year Nov-Oct)



**Source:** The Solvent Extractors' Association of India.

Since December 2013, vegetable oil price inflation has remained mostly in the negative territory due to larger imports although domestic oilseed prices have strengthened since February 2014 following two consecutive years of poor monsoon in major kharif oilseed growing regions (Figure IV.5.2). Price trend by the type of edible oils is shown in Figure IV.5.3. Larger vegetable oil imports due to low global prices, triggered by record production, should help to moderate the price rise in coming months.

The minimum support price (MSP) for all the kharif oilseeds for MY 2015-16 were increased from the previous year's level to give a boost to domestic production. The MSP for soybean was raised by Rs. 40 per quintal to Rs. 2,600, Groundnut by Rs. 30 per quintal to Rs. 4030, sunflower and niger seed by Rs. 50 per quintal Rs 3800 and Rs. 3650, respectively. The MSP for sesame seed was increased by Rs. 100 per quintal to Rs. 4700.

Initial planting reports by the Ministry of Agriculture as on November 6, 2015, shows rabi season oilseed planting this year at 2 million hectares is lagging significantly behind planting during the corresponding period of last year at 3.2 million hectares. This is mainly due to poor subsoil moisture in major growing areas such as Rajasthan, Uttar Pradesh, and Haryana and below normal post-monsoon rains. The Cabinet Committee on Economic Affairs has recently approved the MSPs for rabi oilseeds crops for MY 2015-16. The MSP for both the rapeseed/mustard and safflower seed has been raised by Rs. 250 per quintal (about 8 per cent) from the 2014-15 levels to Rs. 3,350 and 3,300 per quintal, respectively. However, this increase has failed to enthruse farmers to bring more area under rabi oilseeds.



Figure IV.5.2: Oilseed and Vegetable Oil Price Inflation (YoY % Change)

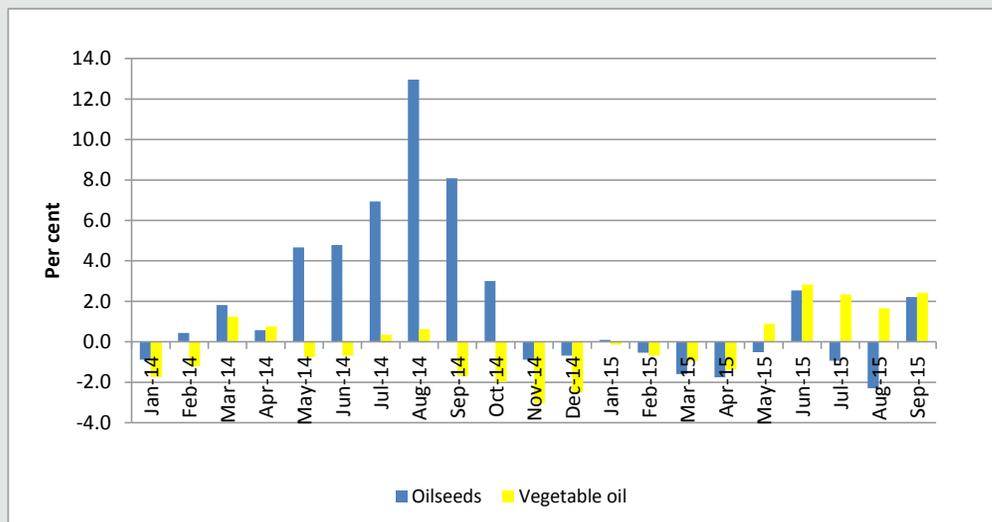
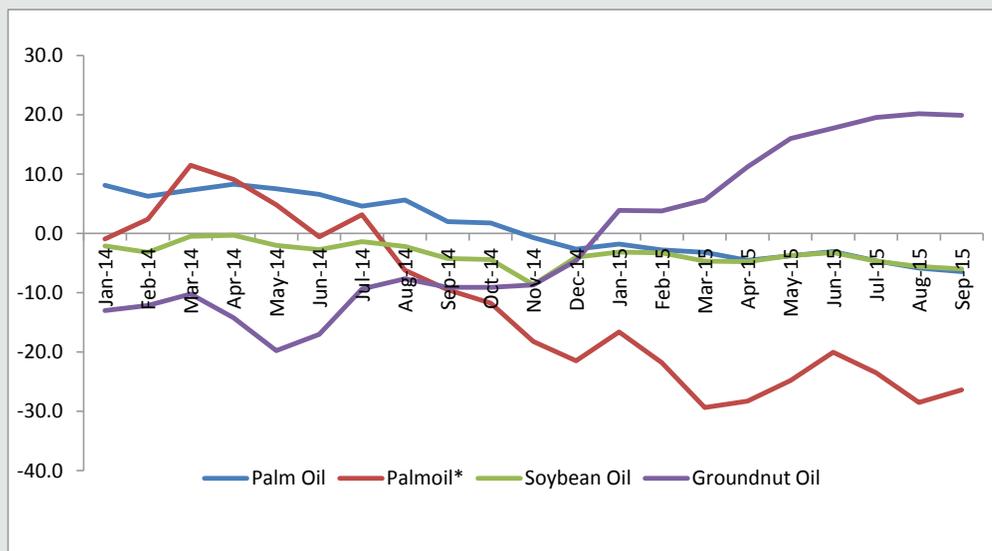


Figure IV.5.3: Whole Price Index of Vegetable Oils (YOY % Change)



Note: Palm oil\* International price of Palm oil.

### IV.5.3 Market Arrivals and Prices

The market arrivals and prices during 2014 and 2015 of important oilseeds in some major markets are shown in Figure IV.5.4-IV.5.9. The soybean harvesting is gaining momentum and average daily new crop supplies have edged- up compared to the previous month. Arrivals have increased in all the market except Indore market in Indore District of MP. The peak supplies are expected to be around third week of October. The new prices at bench mark, Indore shot up within a week.

The arrivals of groundnut in Rajkot, a major groundnut producing region in Gujarat has decreased resulting in increase in prices.

Figure IV.5.4 Arrival and Prices of Soybean in Indore market in MP

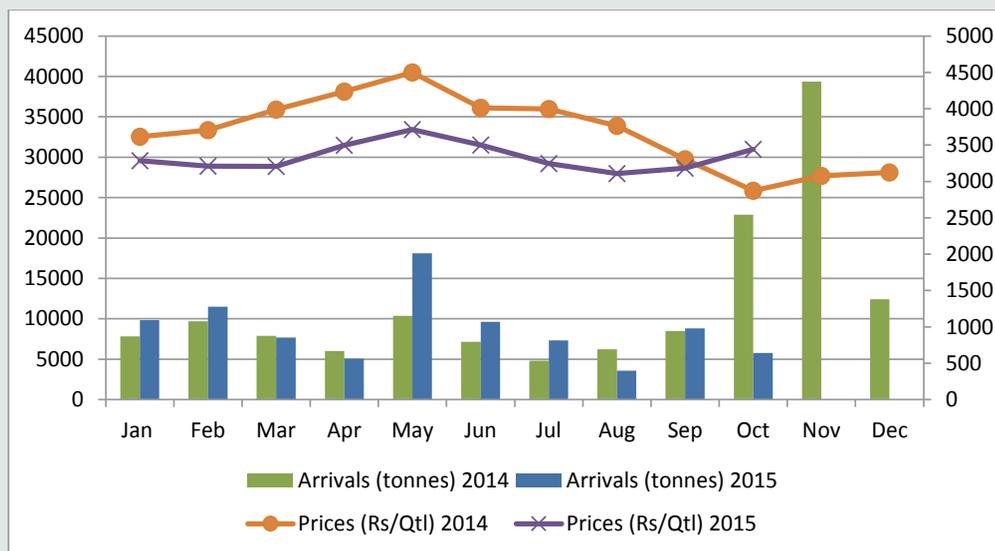


Figure IV.5.5 Arrival and Prices of Soybean in Kota market in Rajasthan

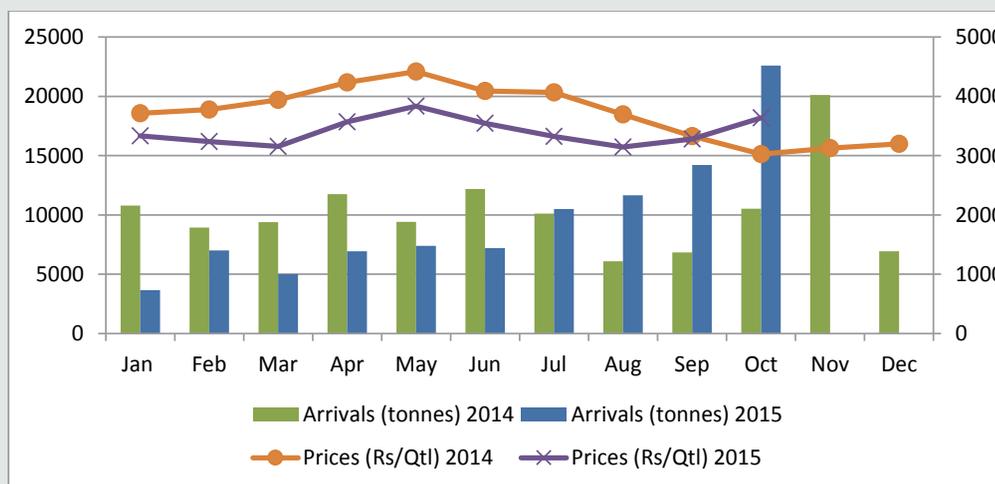
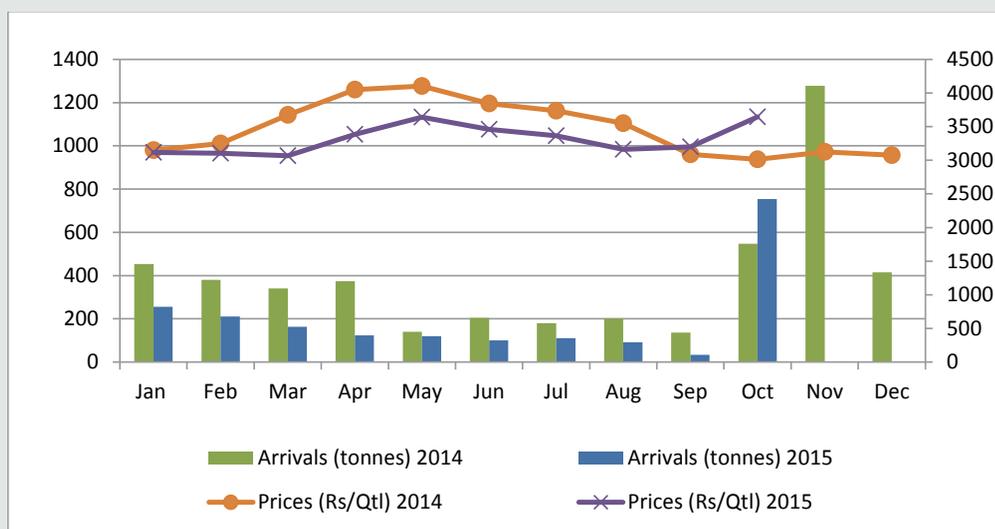
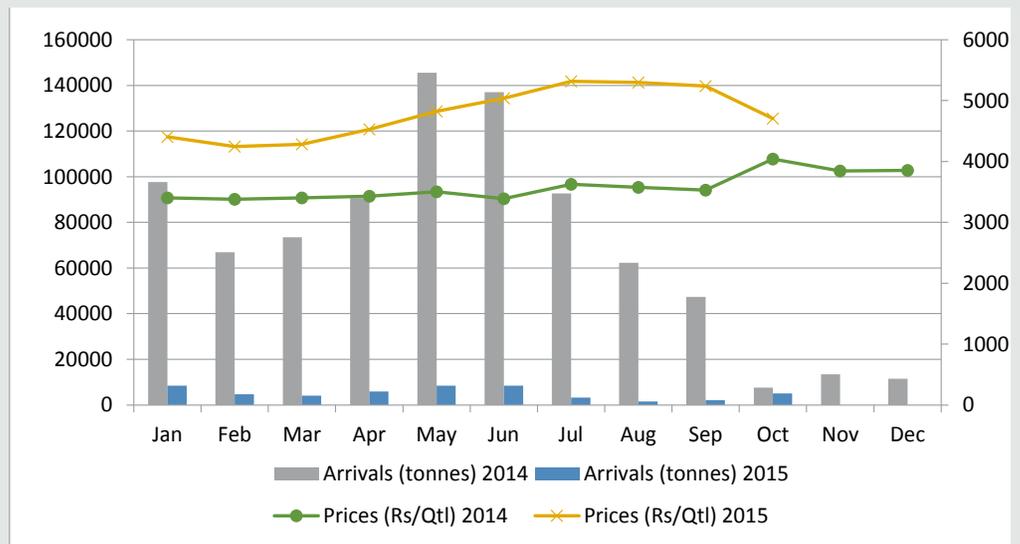


Figure IV.5.6: Arrival and Prices of Soybean in Nagpur market in Maharashtra



Planting of rapeseed and mustard is expected to increase in 2015-16 as the seed prices witnessed new highs this season; this is despite huge edible oil import during the season.

Figure IV.5.7 Arrival and Prices of Groundnut in Gondal market in Gujarat



Rapeseed/mustard seed prices in key spot market across Rajasthan witnessed an increasing trend. The stockists and farmers continued to offload the seed at the current improved prices, hence the supplies increased compared to the arrivals. It is expected that the approaching winter season may uplift the demand for oils and is likely to lend some support to the market. Rapeseed and Mustard seed continued uptrend on good buying support from solvent extractors to cover their stock ahead of festivities, to meet the upcoming mustard oil demand. Planting of rapeseed and mustard is expected to increase in 2015-16 as the seed prices witnessed new highs this season; this is despite huge edible oil import during the season.

Figure IV.5.8: Arrival and Prices of Mustard in Nagar Market in Rajasthan

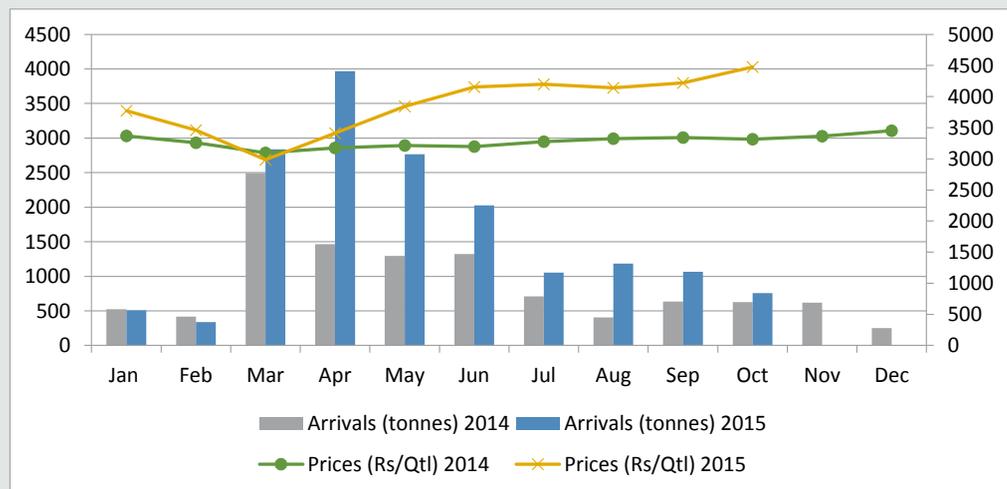
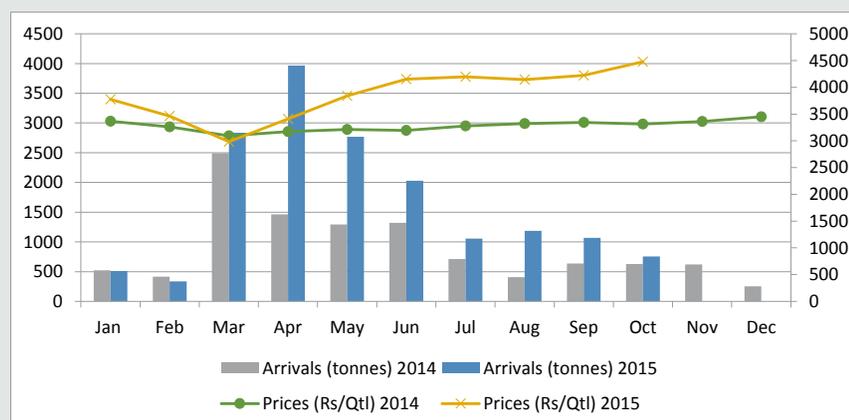


Figure IV.5.9: Arrival and Prices of Mustard in Alwar Market in Rajasthan

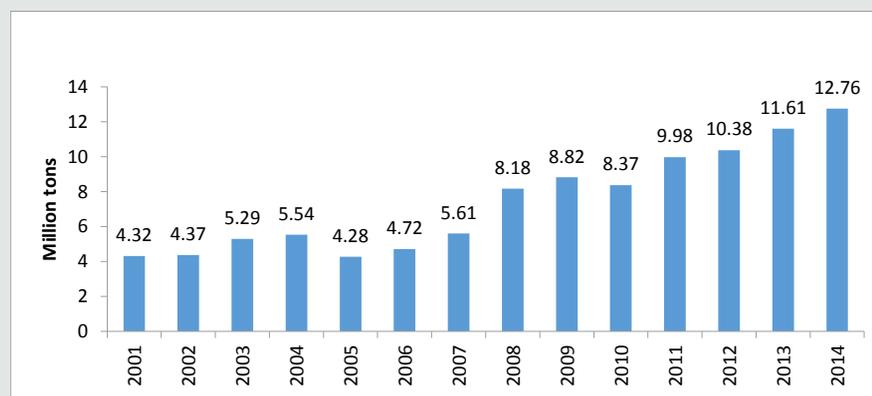


### IV.5.4 Trade

Over the years, imports of edible oils have increased sharply as domestic production has failed to match increasing demand. Data compiled by the Solvent Extractors' Association (SEA)<sup>31</sup> show edible oil imports during the 11 months of oil year (November 2014 to September 2015) at 12.76 million tonnes, a record, compared to 10.39 million tonnes during the corresponding period of 2013-14 due to attractive international prices for most oils. Among all edible oils imports into India, palm oil import share is around 70 to 80 per cent. India is the largest importer of palm oil in the world followed by China, the EU and Pakistan.

During November 2014 to September 2015, crude palm oil imports increased to 6.84 million tonnes from 5.54 million tonnes during the corresponding period of last year while imports of RBD palm oil was almost unchanged at 1.43 million tonnes. There has also been a significant increase in the imports of soybean oil. India's soy oil imports stood at 2.58 million tonnes during November 2014 to September 2015 against 1.73 million tonnes during the corresponding period of the last year. Sunflower oil imports were at 1.43 million tonnes against 1.40 million tonnes in 2013-14. The major sources of India's oil imports are Indonesia and Malaysia for palm oil, Argentina and Brazil for Soybean oil, Ukraine and Mexico for sunflower oil.

Figure IV.5.10 Total Imports of Edible Oils (Oil Year from Nov-Oct)

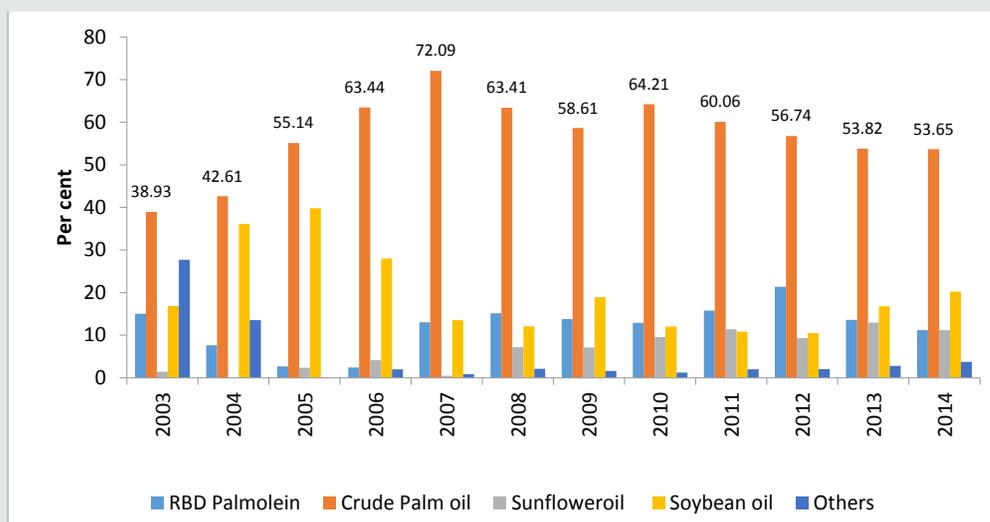


**Note:** For the period November 2014 to September 2015

**Source:** The Solvent Extractors' Association of India

<sup>31</sup><http://seaofindia-com.experiencesense.com/cdn/gallery/1388.pdf>

Over the years, imports of edible oils have increased sharply as domestic production has failed to match increasing demand.

**Figure IV.5.11: Share of various oils in Total Imports during Oil Years (Nov-Oct)**


**Note:** Imports for 2014 is for period November 2014 to September 2015 (11 months only)

**Source:** The Solvent Extractors' Association of India

**Table IV.5.2: Supply and Demand Balance for Vegetable Oils (1000 Tonnes)**

Particulars	2012-13	2013-14	2014-15
	Oct-Sep	Oct-Sep	Oct-Sep
Beginning Stocks	1,413	1,472	1,194
Production	4,833	4,688	4,099
Imports	11,619	12,646	15,255
Total Supply	17,865	18,806	20,548
Exports	10	13	11
Industrial Dom. Consumption	633	685	725
Food Use Dom. Consumption	15,750	16,914	18,332
Domestic Consumption	16,383	17,599	19,057
Ending Stocks	1,472	1,194	1,480

**Note:** USDA vegetable oil marketing year for India is October-September and does not include sesame seed oil (115,000 tonnes), rice bran oil (about 1 million tonnes) and about 500,000 tonnes of oils obtained from solvent extraction of oil meals, etc.

**Source:** USDA

On September 17, 2015, the Indian government raised the import tax on crude edible oils and refined oils by 5 percentage points each to 12.5 percent and 20 percent, respectively, to protect local farmers from rising imports of low-priced palm oil from Malaysia and Indonesia. But according to industry sources the hike in import duty is not enough to protect the interest of farmers and the industry. Malaysia and Indonesia are exporting palm oil at zero per cent export duty as the Malaysian ringgit is performing weak against US dollar, making it attractive for importers.

## Assessment

According to industry sources, the 14 per cent deficit in 2015 South West monsoon rains and its skewed spatial and temporal distribution have negatively impacted yield of kharif oilseeds crops in general and soybeans in particular. As is typical, while trade sources estimate soybean output to drop to 8.6 million tonnes in the 2015-16 crop year (July/June) from 9.0 million tonnes last year, the Ministry of Agriculture's 1st Advance Estimate pegs production at 11.83 million tonnes, a 1.3 million tonne increase over 10.53 million tonnes in 2014-15. The NCAER forecast is 12.7 million tonnes based on a regression equation, closer to the government estimate. According to trade and industry sources, a sustained fall in domestic output of oilseeds and vegetable oils is set to increase India's dependence on imported edible oil to an alarmingly high level of 68 per cent in the Indian oil year November 2014-October 2015. Although the government has increased the import duty on crude vegetable oil and refined vegetable oils by 5 per cent to 12.5 per cent and 20 per cent, respectively, effective September 17, 2015, lower global prices are likely to continue to support larger imports.

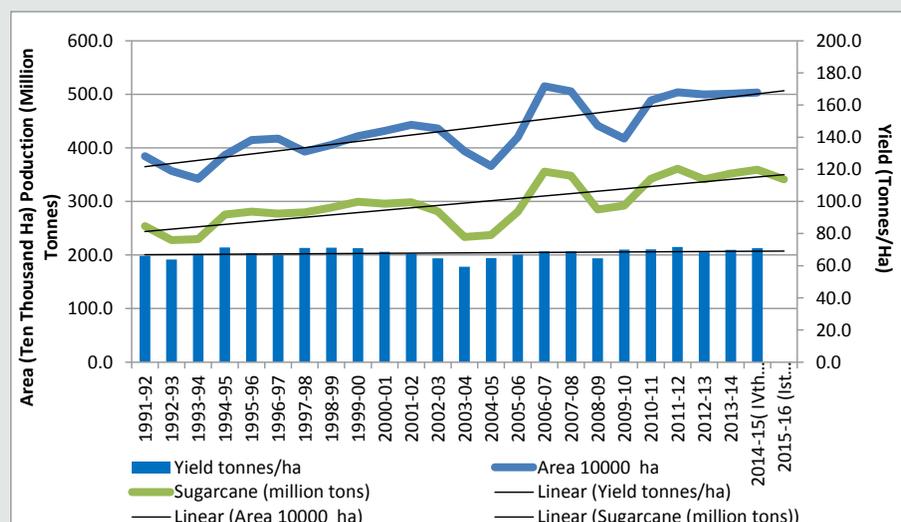
## IV.6 Sugarcane and Sugar

### IV.6.1 Significant decline in sugarcane production likely...

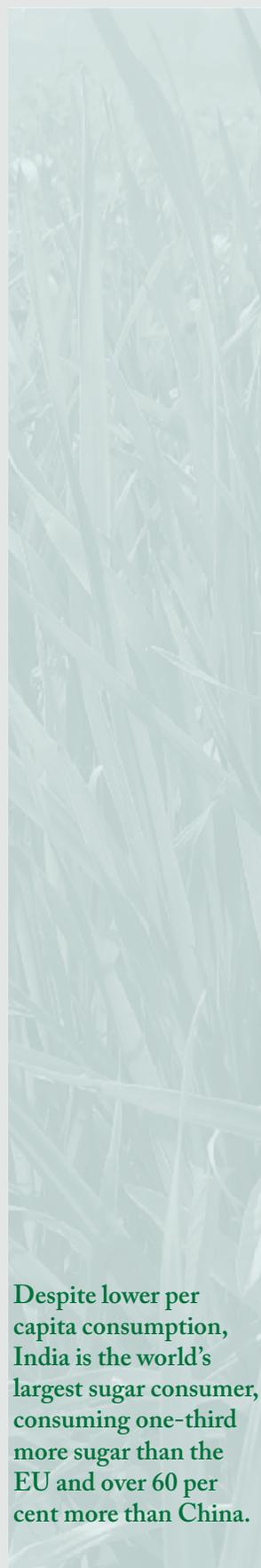
The government's 1st Advance Estimates of agricultural production released in September had pegged 2015-16 sugarcane production at 341.43 million tonnes, 17.9 million tonnes less than the 4th Advance estimates of 359.3 million tonnes in 2014-15. The sugar cane sown area in 2015-16 is tentatively placed at around 4.88 million hectares which is just 0.2 per cent less than last year. The decline in planted area in 2015-16 is due to below normal rainfall in July and August, a crucial growth stage for the crop, in major growing states of Uttar Pradesh and Maharashtra. The cane yield is also estimated to have declined. The area estimate reflects higher area sown in Tamil Nadu (17.13 per cent higher than previous year), offsetting lower area sown in Maharashtra (11.82 per cent less than previous year). The record sugarcane production of 361 million tonnes in 2011-12, when both the area and yield were 5.04 million hectares and 71.7 tonnes per hectare, respectively. NCAER's own estimates of production in 2015-16 are placed at 356.6-358.3 million tonnes higher than the official 1st Advance Estimates.

The average sugar recovery rate in recent years has averaged about 10.22 per cent. Figure IV.6.1 shows the trend in area, production and yield of sugarcane over the past three decade.

Figure IV.6.1: Sugarcane Area, Production and Yield Trends



According to industry sources, the 14 per cent deficit in 2015 South West monsoon rains and its skewed spatial and temporal distribution have negatively impacted yield of kharif oilseeds crops in general and soybeans in particular.

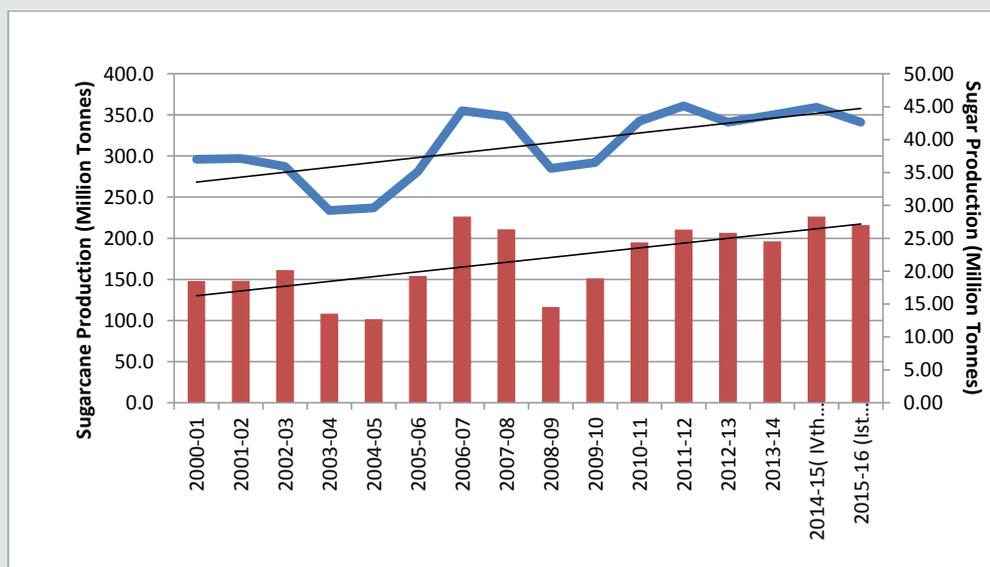


Despite lower per capita consumption, India is the world's largest sugar consumer, consuming one-third more sugar than the EU and over 60 per cent more than China.

Despite lower cane production, ISMA's current forecast of sugar production in MY 2015-16 is 27.0 million tonnes, 1.3 million tonnes lower than the estimated sugar production of around 28.3 million tonnes in 2014-15. It is estimated that sugar production in Maharashtra will be around 9 million tonnes in 2015-16 sugar season which is about 14.3 per cent less than the 2014-15 production. About 4.6 million tonnes of sugar is likely to be produced in Karnataka, around 3.4 per cent higher than the estimated 4.45 million tonnes in the previous year. Favourable weather conditions and an increase in area under improved cane variety, is expected to result in higher yield in the largest sugarcane producing state of Uttar Pradesh, although no improvement in sugar recovery is unlikely. Sugar production in the state is projected at 7.5 million tonnes in MY 2015-16.

India's sugar production has increased from 19.1 million tonnes in TE 2002-03 to 26.62 million tonnes in TE 2015-16 (Figure IV.6.2). Sugarcane and hence sugar production in India is characterised by a well-marked cyclical trend of three to four years as farmers and sugar mills respond to sugarcane prices. However, this cyclical movement has become less obvious in recent years.

Figure VI.6.2: Sugarcane and Sugar Production Trend



### IV.6.2 Consumption and price

The sugar industry estimates that the current total annual consumption (absorption) of sugar in the country, including by households, bulk buyers, and others, is roughly 24.3 million tonnes, which on a per capita basis works out at about 20.2 kilograms, well below the global per capita consumption of 24.8 kilograms. However, in addition to sugar, Indians consume on an average about 5 kg of gur per year, although the use of sugarcane to produce gur is steadily declining over the years. Almost two-third of the sugar consumption is believed to be by bulk consumers.

Despite lower per capita consumption, India is the world's largest sugar consumer, consuming one-third more sugar than the EU and over 60 per cent more than China. Demand growth has slowed in recent years, but underlying population and economic growth should see demand growth return to higher levels, forecast to reach 30 million tonnes by 2020 from the present 24.3 million tonnes. Demand growth among lower income consumers will be driven by rising incomes, while middle class consumers will demand more processed

foods. Sugar consumption has been relatively resilient due to subsidised sugar sold to lower income consumers by the government and the relatively price-inelastic demand of more affluent consumers.

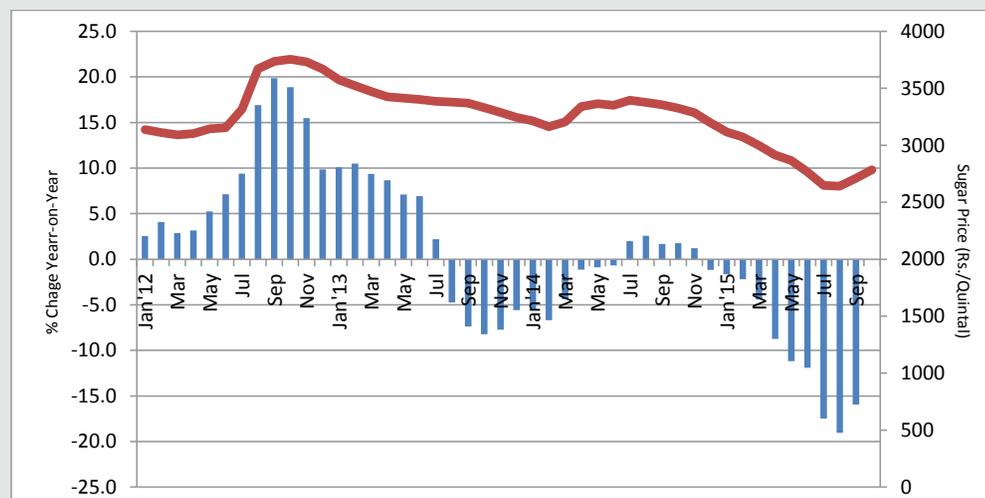
Reflecting the higher production and large stocks of sugar both domestically and globally, sugar prices have shown a downward trend in recent months. Year-on-year sugar price inflation measured by Wholesale Price Index entered into a negative territory since August 2013 to June 2014 and again from December 14 to September 2015 (Figure IV.6.4). A likely near record production in MY 2015-16 and high carry in stocks will continue to keep prices under pressure unless significant exports take place.

The government decision to increase import duty on sugar to 40 per cent from 25 per cent combined with restoration of export subsidy on raw sugar to Rs. 4,000 per tonne up to a limit of 1.4 million tonnes, will prevent imports even if international prices of sugar were to depress further. In addition, the government had withdrawn the “duty free raw sugar import authorisation scheme”, under which Indian refiners could import duty free raw sugar from abroad with the sole condition of re exporting the refined sugar from the country. To prevent possible leakages of imported sugar in the domestic markets, the Government has also reduced the export obligation period from 18 months to 6 months under the Advanced Authorization Scheme. Sugar prices firmed a bit since August this year following government’s decision to export surplus sugar through barter trade, reports of larger sugar deficit worldwide and growing festive demand.

CACP has recommended a 4.3 per cent increase in the Fair Remunerative Price (FRP) for sugarcane to Rs. 230 per quintal linked to an average sugar recovery rate of 9.5 per cent for the crop year 2015-16 compared to Rs. 220 per quintal (for 9.5 per cent average recovery) and Rs 243 per quintal (for 10.5 per cent average recovery) for the 2014-15 seasons. The FRP is the minimum price that sugarcane farmers are legally guaranteed. The FRP is fixed after taking into consideration the margins for sugarcane farmers, based on the cost of production of sugarcane, including the cost of transportation. However, state governments are free to fix their own state advised price (SAP) and millers are obliged to pay the SAP established by the state governments to sugar cane farmers, which are typically well above the FRP. State governments are yet to announce the SAP for MY 2015-16. The sugar industry is urging the government to implement the Rangarajan Committee Report on sugarcane pricing which proposes linking cane pricing with final product prices.

**A likely near record production in MY 2015-16 and high carry in stocks will continue to keep prices under pressure unless significant exports take place.**

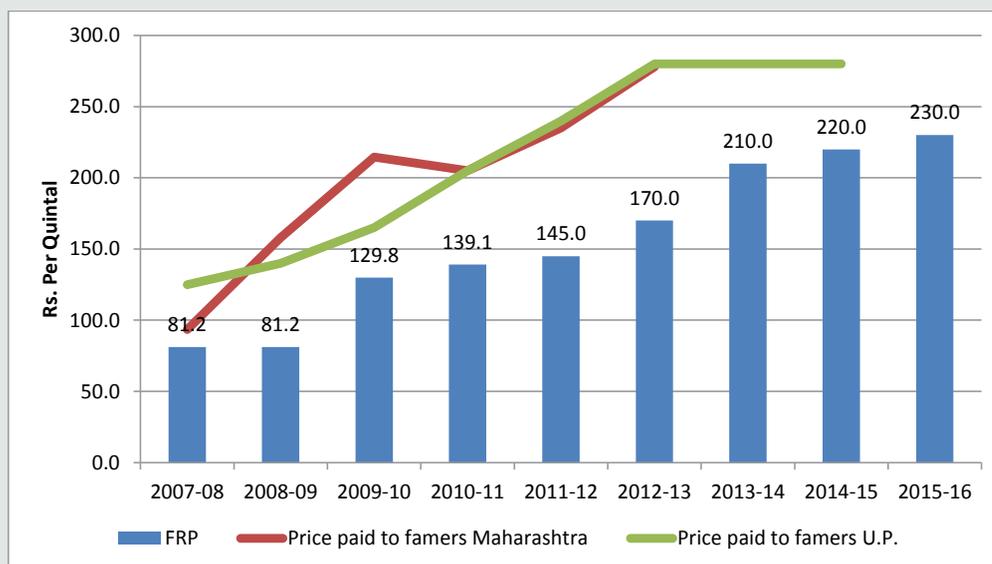
**Figure IV.6.3: All India Sugar Price and Year-on-Year Change in WPI of Sugar**





Given the low global prices, the subsidy amount of Rs. 4,000 per tonne proved inadequate to stimulate raw sugar exports.

Figure IV.6.4: Fair Average Price for sugarcane and actual price paid to farmers



### IV.6.3 Stocks

The Indian Sugar Mills Association (ISMA) is estimating opening stocks of sugar for MY 2015-16 on 1st October, 2015, at 9.6 million tonnes which is about 2.1 million tonnes more than the MY 2014-15 opening stocks of 7.5

### IV.6.4 Trade

During the past ten years, India has been a net exporter of sugar, despite off and on ban on exports due to domestic production and price volatility. However, since May 14, 2012, free exports of sugar are permitted subject to prior registration of quantity.

The Indian government liberalised sugar exporting norms under preferential quota systems (wherein limited quantity of sugar exported at a lower tariff rate) to European Union (CXL quota) and the US (TRQ quota). Until now, only ISEC (Indian Sugar Exim Corporation Ltd) was authorized to export the preferential quota sugar to EU and the U.S, availing a lower tariff rate for the exports made. However, with the new policy announced, anyone from the industry could export preferential sugar share to the concerned market.

According to ISMA, net sugar exports from India in MY 2014-15 are expected to be 1.1 million tonnes compared to 2.18 million tonnes in MY 2013-14. MY 2014-15 exports include 0.55 million tonnes of raw sugar and 0.55 million tonnes of white sugar. This is only about a third of the 1.4 million tonne for which the government had approved the export subsidy of Rs. 4,000 per tonne for 2014-15. Given the low global prices, the subsidy amount of Rs. 4,000 per tonne proved inadequate to stimulate raw sugar exports. According to industry sources while global raw sugar prices are ruling around Rs. 16,200 per tonne, the cost of production in Maharashtra is around Rs 29,000 per tonne. Similarly, refined sugar in the international market is trading at around Rs 21,000 per ton, compared with its cost of production of roughly Rs 31,000 per tonne in Maharashtra. The ex-factory prices of raw and refined sugar in other states were also ruling higher than global price.

According to Food Ministry's recent notification, the government has allocated an export quota of four million tonne of sugar for 2015-16, to be allocated to each sugar mill proportionate to their production. However, it is unclear whether the government will continue to provide export subsidy like in 2014-15 due to protests from major exporting countries such as Brazil and Australia. Reportedly the Food Ministry has circulated a cabinet note for inter-ministerial comments on a new WTO compatible export subsidy scheme for sugar, proposing direct payment of Rs. 47.50 a quintal to growers out of the FRP cane price of Rs.230 as production subsidy for 2015-16 season.

Brazil was the largest exporter of sugar in 2014-15 followed by Thailand and Australia, whereas India, with an export share of 2.76 percent, ranked the sixth largest exporter of sugar. Major export destinations for Indian sugar in 2014-15 were Sudan, Somalia, UAE and Sri Lanka.

## IV.6.5 Sugar balance sheet

**Table IV.6.1 Sugar Supply Demand Balance Sheet**

Particulars	2012-13	2013-14	2014-15	2015-16 F
Beginning stock	6.13	9.30	7.50	9.6
Production	25.10	24.20	28.3	27.0
Imports	0.70	0.20	0.00	0
Total Supply	31.93	33.70	35.8	36.6
Exports	1.00	2.65	1.1	2.0
Domestic Consumption	21.63	23.55	25.1	25.5
Ending Stocks	9.30	7.50	9.6	9.1

**Source:** ISMA and NCAER Estimates

## Assessment

Indian sugar industry has been plagued by oversupply of costly sugar during the past couple of years, which resulted in snowballing of sugarcane arrears to farmers by the sugar industry jeopardizing the financial viability of several sugar mills. The main reason for this is the unreasonable pricing of sugarcane payable to farmers (SAP) by most state governments. The high domestic cost of production for sugar has priced out India from the global export market. With an estimated opening stocks of sugar at around 9.6 million tonnes on October 1, 2015, and MY 2015-16 sugar production estimated at 27.0 million tonnes, there will be more than sufficient sugar to take care of domestic requirement of around 24.3 million tonnes and exports of 2 million tonnes. Hence no significant increase in domestic sugar prices is expected. Although the government has mandated sugar mills to export 4 million tonnes of sugar in MY 2015-16, without continuation of export subsidy, exports of such large magnitude appears infeasible unless global price surges. The government is reportedly working on a new WTO compatible export subsidy scheme for sugar, proposing direct payments to growers for 2015-16 season.

The high domestic cost of production for sugar has priced out India from the global export market.

Although the government has mandated sugar mills to export 4 million tonnes of sugar in MY 2015-16, without continuation of export subsidy, exports of such large magnitude appears infeasible unless global price surges.

## IV.7 Potato

### IV.7.1 2014-15 production likely to be higher

According to third advance estimates by the National Horticultural Research and Development Foundation (NHRDF), India's total potato production in 2014-15 was 45.9 million tonnes, 10.7 per cent higher than the 2013-14 production of 41.5 million tonne. Area and productivity of potato in 2014-15 is 20.69 lakh hectares and 22.2 tonnes/ha respectively. The highest production in 2014-15 was in Uttar Pradesh, followed by West Bengal, Bihar, Madhya Pradesh and Gujarat. The kharif potato crop condition in Himachal Pradesh, Uttarakhand, Karnataka, Maharashtra and J&K in 2014-15 was medium. The area under kharif potato production may decline due to fewer rains in Maharashtra & Karnataka States at the time of sowing. The information on state-wide area, production and yield according to 3rd advance estimates of 2014-15 is shown in Table IV.7.1.

**Table IV.7.1: Area, Production and Yield of Potato by State in 2014-15 (3rd AE)**

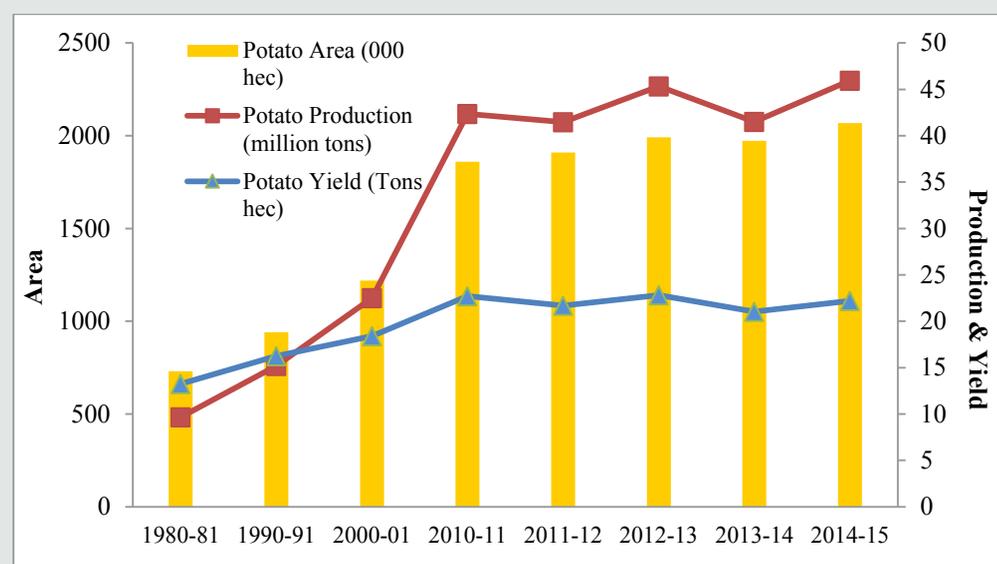
State	Area ('000 ha)	Production ('000 MT)	Yield (Tonne/ha)
Uttar Pradesh	604.3	13137.5	21.7
West Bengal	412.2	12027.0	29.2
Bihar	319.0	6345.6	19.9
Madhya Pradesh	136.0	3048.0	22.4
Gujarat	98.2	2964.1	30.2
Punjab	89.3	2243.5	25.1
Assam	99.2	1706.0	17.2
Jharkhand	49.6	659.7	13.3
Haryana	30.1	658.4	21.9
Karnataka	43.4	565.3	13.0
Chhattisgarh	38.5	542.8	14.1
Uttarakhand	25.8	447.6	17.4
Odisha	15.8	268.9	17.0
Himachal Pradesh	19.2	243.3	12.7
Rajasthan	14.7	150.4	10.3
Tamil Nadu	4.7	97.3	20.8
Maharashtra	10.3	74.4	7.2
Andhra Pradesh	2.6	43.6	16.6
Kerala	0.8	14.8	18.5
All States	20,69.0	45,950.8	22.2

**Source:** www.nhrdf.com

Potato production grew at a compound annual growth rate of 5.2 per cent per year during 2000-01 to 2014-15. Area grew at the rate of 3.8 per cent and yield per hectare at 1.4 per cent during the same period (Figure IV.7.1). Production growth rate was much higher at 6.5 per cent during the decade 2000-01 to 2010-11 compared to the 2.1 per cent during

2010-11 to 2014-15, when area grew at a compound annual growth of 2.7 per cent, while yield growth slumped to a negative growth of 0.6 per cent.

**Figure IV.7.1: Area, Production and Yield of Potato in India**



**Source:** Directorate of Economics and Statistics, Ministry of Agriculture, 3rd AE 2014-15.

## IV.7.2 Potato Supply and Demand

About 99 per cent of the potato production in India is consumed domestically. Potato production in 2015-16 is likely to remain stagnant at 45.95 million tonnes as in 2014-15. Exports, estimated at 433,000 tonnes in 2015-16, as a percentage of production is expected to increase from 0.81 per cent in 2014-15 to 0.94 per cent in 2015-16, but less than one per cent as observed in earlier years, due to various export restrictions imposed by the government to tame domestic price inflation (Table IV.7.2). Potato imports are negligible.

Potato production in 2015-16 is likely to remain stagnant at 45.95 million tonnes as in 2014-15.

**Table IV.7.2: Potato Supply and Demand (Thousand Tonnes)**

	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15 E	2015-16 F
Production	36580	42339	41483	45343	41555	45951	45951
Imports	0	0	0	0	0	0	0
Total Supply	36580	42339	41483	45343	41555	45951	45951
Exports	97	198	193	163	221	374	433
Total Domestic Use	36483	42141	41290	45180	41334	45577	45518
Exports as a % of Production	0.27	0.47	0.47	0.36	0.53	0.81	0.94
Domestic Use as a % of Total Supply	99.7	99.5	99.5	99.6	99.5	99.2	99.1

E – Estimate; F- Forecast; Source: NHB, CMIE and APEDA



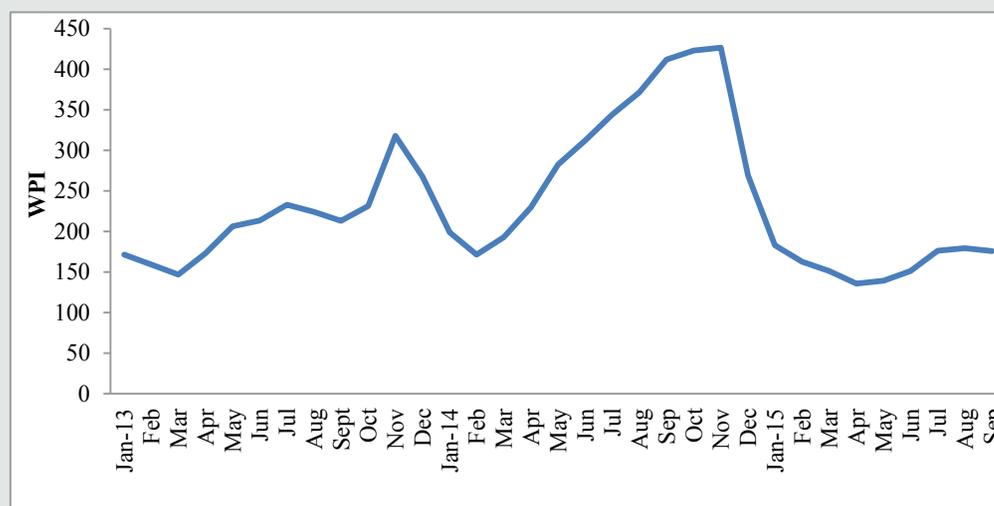
The Y-o-Y percentage change in WPI for potato remained negative during 2015 through September.

### IV.7.3 Prices

Annual average WPI for potato increased by 35 per cent to 297 in 2014-15 from 220 in 2013-14. WPI for potato has been showing a consistently increasing trend since March 2014 and reached the highest point in Nov 2014 at 426.5, thereafter it started declining. WPI for potato has eased further in 2015-16 (April through September) to 159.5 from 325.3 during the corresponding period of 2014-15, a decline of over 50 percent (Figure IV.7.2), reflecting near record production and export restrictions imposed by the government.

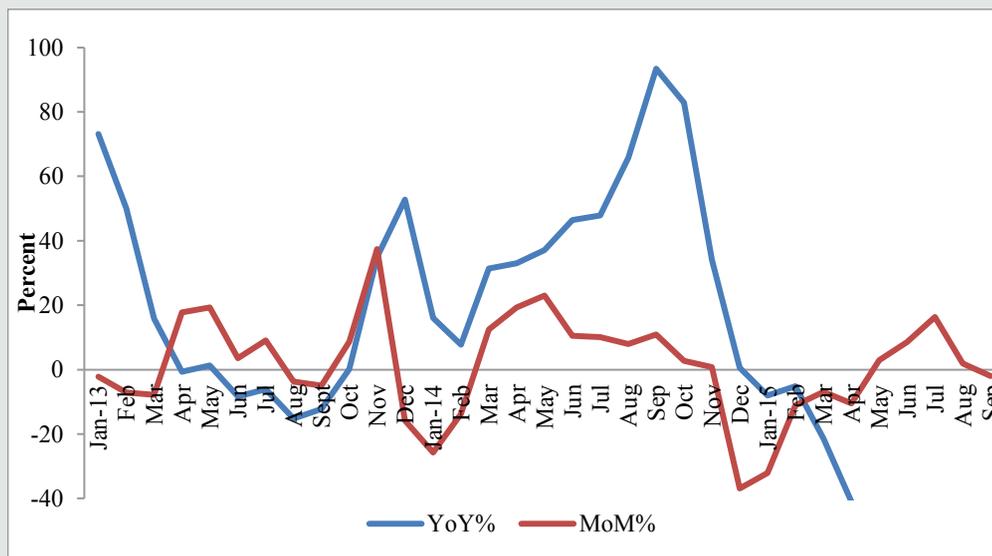
The Y-o-Y percentage change showed a continuous increasing trend during March through September, when it recorded the highest growth rate (Figure IV.7.3). Since October 2014, WPI for potato started easing. The Y-o-Y percentage change in WPI for potato remained negative during 2015 through September. The M-o-M percentage change in WPI revealed that although first four months of 2015 recorded a decline in WPI, from May onwards it started increasing and reached the highest growth of 16.3 per cent in July 2015 due to unseasonal rains resulting in crop losses and quality deterioration. However, since August 2015 prices for potatoes have recorded a significant fall following the government initiatives taken to control prices including imposing stocks limits under the Essential Commodities Act and de-hoarding actions.

Figure IV.7.2: WPI Trends in Potato



Source: Office of Economic Adviser, Government of India.

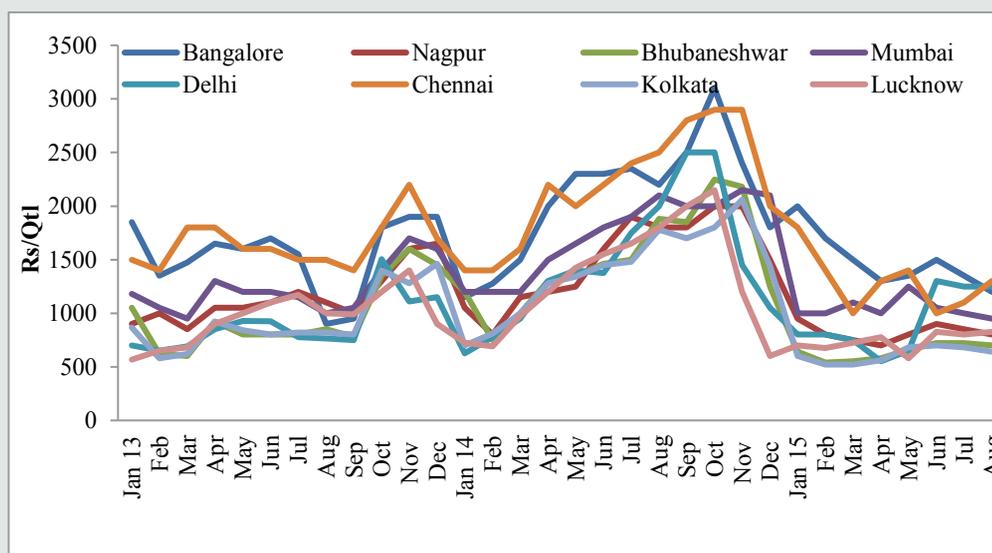
Figure IV.7.3: Percentage Change in WPI in Potato M-o-M and Y-o-Y



Source: Office of Economic Adviser, Government of India

The wholesale prices of potato on an average showed decline in all major markets in Jan-Aug 2015 over the corresponding period last year. This is mainly because of significant decline in the initial few months of 2015. The highest fall this year has been reflected in Bhubaneswar, Kolkata and Lucknow. (Figure IV.7.4). In terms of M-o-M percentage change, the wholesale prices for potato have declined in almost all the markets from January to April 2015, indicating the impact of arrival of rabi harvest in the markets. The months from April-July 2015 reflect hike in wholesale prices in almost all major markets in India. However, last two months showed decline in the prices again. The strengthening of prices may reflect uncertainty over the level of 2014-15 harvest.

Figure IV.7.4: Wholesale Prices of Potato in Major Cities

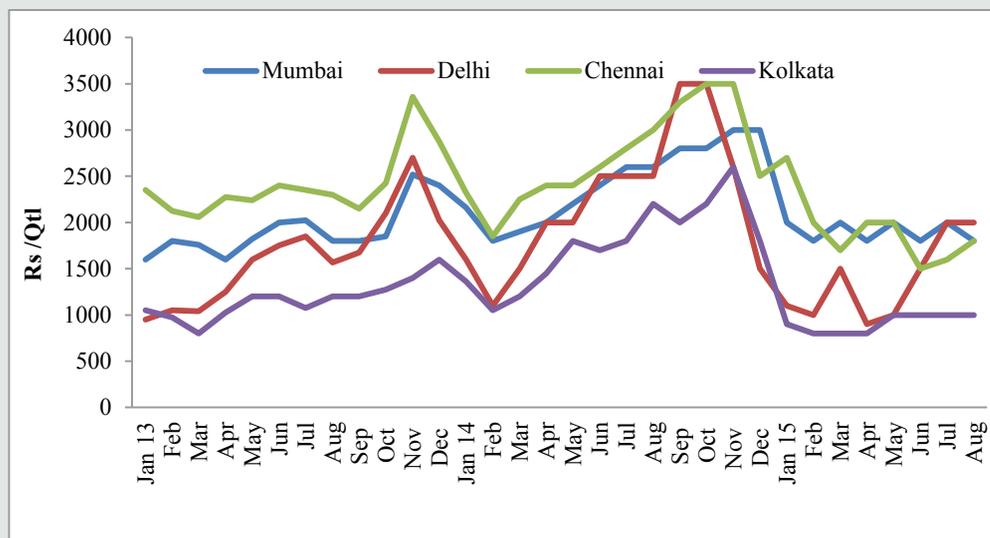


Source: Directorate of Economics and Statistics, Ministry of Agriculture.

Retail prices also have declined in all four major metropolitan cities in 2015 over 2014 (Figure IV.7.5). Improved levels of domestic production in 2014-15 and fresh crop arrivals

in early months of 2015 have moderated the potato prices this year. In terms of Y-O-Y percentage change, the highest decline in retail prices in 2015 over 2014 was in Kolkata (42 per cent), followed by Delhi (30 per cent). The retail prices increasing continuously for all four metro cities since March 2014 for seven months, but from Nov 2014 onwards prices started easing, although with huge fluctuations along the trend. Kolkata and Mumbai showed relative stability in retail prices of potatoes in the last three months of June-August 2015, while Delhi and Chennai showed upward trend.

**Figure IV.7.5: Retail Prices of Potato in Metro Cities**



**Source:** Directorate of Economics and Statistics, Ministry of Agriculture.

The government stepped in and took various measures to control prices of potato and onions which are listed below:

- In July 2015, the government brought these two major vegetables within the purview of stockholding limits under the Essential Commodities Act, 1955. The decision taken by the Cabinet Committee on Economic Affairs (CCEA) imposed limits on the quantity of onions and potatoes that individuals and wholesale traders can stock up.
- Two major government agencies at the national level - National Agricultural Cooperative Marketing Federation (NAFED) and Small Farmers Agri-business Consortium (SFAC) – were tasked to procure the potato and onions, store and offload in the market when prices start firming.
- On June 17, 2015, the government fixed higher minimum export prices (MEP) for onions and potatoes to discourage exports and augment domestic supply. However, in February 2015, the MEP on potato was abolished as supply situation improved and domestic prices eased.

#### IV.7.4 Market arrivals

The market arrival of potato has improved for all the major markets in Sept 2015 except Bangalore, where it improved slightly in Oct 2015. The market arrivals increased by more than 50 per cent in Kolkata in Oct 2015 over Sept 2015 (Table IV.7.3).

In terms of M-o-M percentage change, the situation of market arrivals of potato was weak till May 2015 due to which the wholesale prices were also high. For a few major markets

like Kolkata, Mumbai and Bangalore, although the situation improved from June 2015 onwards but still kept on fluctuating in rest of the months. Similar fluctuations were also observed in other major markets in India during 2015. Recent available report reveals that around 65 per cent stored potato stock has already been sold in the market till August and the rest of the 35 per cent of stock will be available for next three to four months, which should be adequate to meet demand until the fresh crop begins to arrive in the markets.

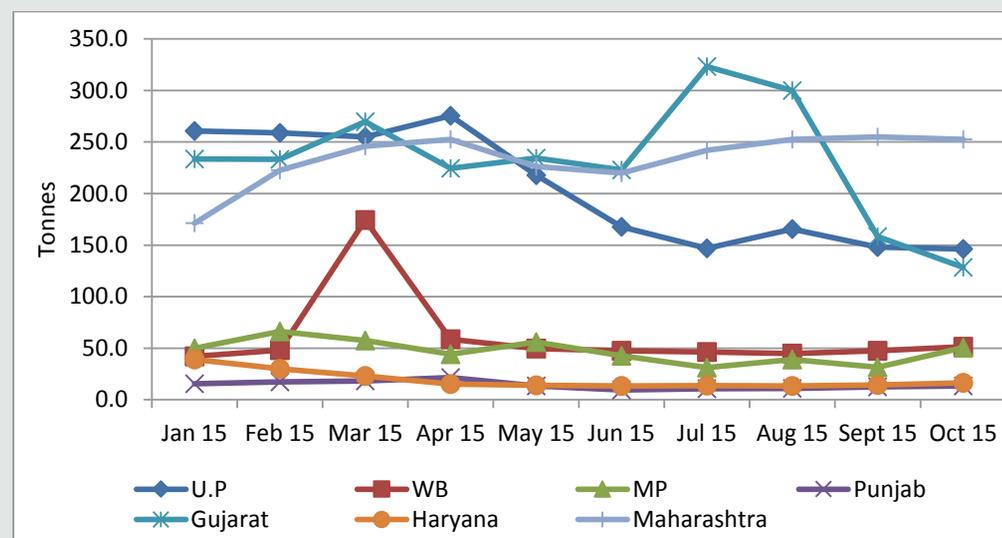
**Table IV.7.3: Monthly Arrival of Potatoes in Wholesale Markets (Tonnes)**

Centres	Apr 15	May 15	Jun 15	Jul 15	Aug 15	Sept 15	Oct 15
Delhi	42091.7	40109.4	35774.3	36627.6	32856.5	45680.0	36978.0
Mumbai	28968.0	25902.0	30366.0	32360.0	39192.0	43853.0	37829.0
Kolkata	386.0	261.0	480.0	205.5	207.0	212.5	319.0
Bangalore	22709.0	22604.0	23273.0	19075.0	28213.0	23842.0	24172.0
Lucknow	8267.0	6744.0	4310.0	4095.5	3509.0	4225.0	4114.0

Source: AGMARKNET.

The per day market arrival of potatoes shows stable trend in Haryana, West Bengal, Punjab and Madhya Pradesh since April 2015 (Figure IV.7.6). In Maharashtra, the per day average market arrival of potato shows improvement since the month of July 2015, whereas in Gujarat and Uttar Pradesh, shows a decline in recent few months.

**Figure IV.7.6: Per Day Average Market Arrival of Potatoes (Tonnes)**



Source: AGMARKNET.

## Assessment

As per the 3rd advance estimates by the NHRDF, all India production of potato during 2014-15 has improved by 10.7 per cent from 41.5 million tonnes in 2013-14 to 45.9 million tonnes in 2014-15. For 2015-16, production is likely to be somewhat similar at 45.9 million tonnes due to poor monsoon rains in growing regions. Potato prices are expected to improve on account of likely lower production in short run. Potato exports in 2015-16 are projected by trade at 433,000 tonnes compared to 374,000 tonnes in 2014-15.

For 2015-16, production is likely to be somewhat similar at 45.9 million tonnes due to poor monsoon rains in growing regions. Potato prices are expected to improve on account of likely lower production in short run.

## IV.8 Onion

### IV.8.1 Lower production in 2014-15

India is the second largest onion producing country in the world after China. India's onion crop has two cycles, with the first harvesting starting in November to January and the second harvesting from January to May. The third advance estimate of production of onion by NHRDF is 18.7 million tonnes in 2014-15 compared to 19.4 million tonnes in 2013-14. The lower production is mainly due to adverse weather conditions, including unseasonal rains that affected standing and harvested crops in major producing centres in the country. The area and productivity of onions in 2014-15 is estimated at 11.49 lakh hectares and 16.3 tonnes/ha respectively. The state level data shows that the highest share in production of onions at all India level is in Maharashtra (28.6 per cent), followed by Karnataka (15.9 per cent), Madhya Pradesh (15.8 per cent) and Bihar (6.7 per cent) (Table IV.8.1).

**Table IV.8.1: Area, Production and Yield of Onion by States, 2014-15 (3rd Adv. Est.)**

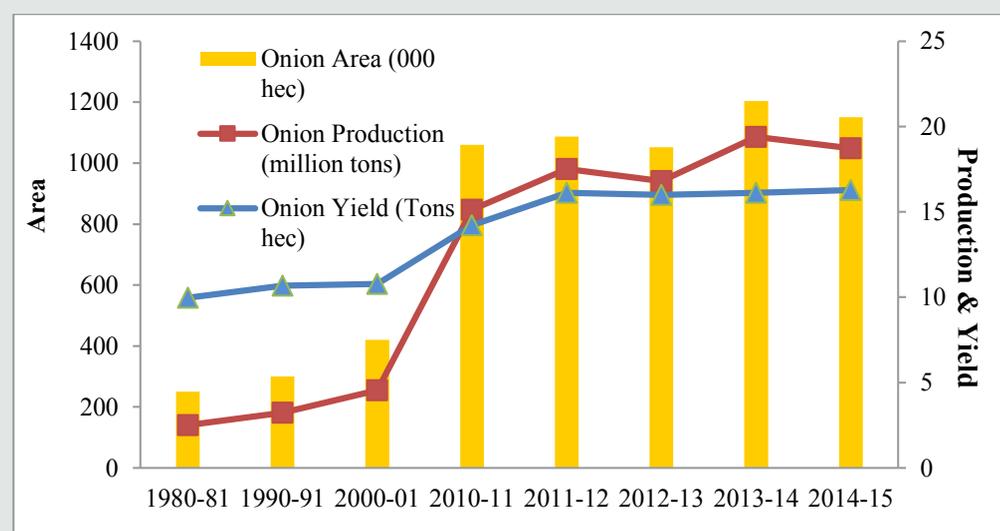
State	Area ('000 ha)	Production (in '000 MT)	Yield (Tonnes/ha)
Maharashtra	427.9	5362.0	12.5
Karnataka	164.7	2985.8	18.1
Madhya Pradesh	123.2	2967.4	24.1
Bihar	54.3	1247.3	23.0
Gujarat	44.3	1126.6	25.4
Rajasthan	62.6	800.1	12.8
Haryana	28.7	667.1	23.3
Andhra Pradesh	38.4	575.6	15.0
Telangana	22.2	419.1	18.9
Uttar Pradesh	24.5	413.4	16.9
Odisha	33.2	396.0	11.9
West Bengal	25.3	380.2	15.0
Chhattisgarh	24.1	369.4	15.3
Jharkhand	16.4	322.7	19.7
Tamil Nadu	29.8	289.5	9.7
Punjab	8.4	188.2	22.5
Uttarakhand	4.0	40.8	10.3
Himachal Pradesh	2.3	39.4	17.3
Other States	15.6	146.2	9.4
All States	1149.8	18736.5	16.3

**Source:** www.nhrdf.com

With an annual compound growth rate of 7.5 per cent in area and 3 per cent in yield during 2000-01 to 2014-15, onion production grew at an average annual growth rate of 10.6 per cent per year. Although, growth in area under onion production was much higher in 2001 to 2011, the growth in yield was higher in 2011 to 2015 compared to the 2001 to

2011. During 2010-11 to 2014-15, onion production grew by just 5.5 per cent from 15.1 million tonnes in 2010-11 to 18.7 million tonnes in 2014-15 (Figure IV.8.1). The area and yield during this period increased by 2.1 per cent and 3.5 per cent, respectively.

**Figure IV.8.1: Area, Production and Yield of Onion**



**Note:** Figures taken from 3rd advance estimates of 2014-15.

**Source:** Directorate of Economics and Statistics, Ministry of Agriculture.

## IV.8.2 Onion supply and demand

Slightly above 93 per cent of the onion production in the country is consumed domestically (Table IV.8.2). Onion production is forecast to increase to 19.77 million tonnes in 2015-16 compared to 18.73 million tonnes in 2014-15. The share of onion exports in total production in 2015-16 is likely to fall from 6.61 per cent in 2014-15 to 6.42 per cent in 2015-16. Onion export for the year 2015-16 is forecast at 1.27 million tonnes compared to 1.23 million tonnes in 2014-15. Despite government efforts to import onion to contain domestic prices, imports have remained negligible. Considering the rising retail and wholesale prices following delayed monsoon, the government decided to increase the MEP for onions to \$700 per metric tonne from \$425 per metric tonne in the previous year.

Onion production is forecast to increase to 19.77 million tonnes in 2015-16 compared to 18.73 million tonnes in 2014-15.

**Table IV.8.2: Onion Supply and Demand (Thousand Tonnes)**

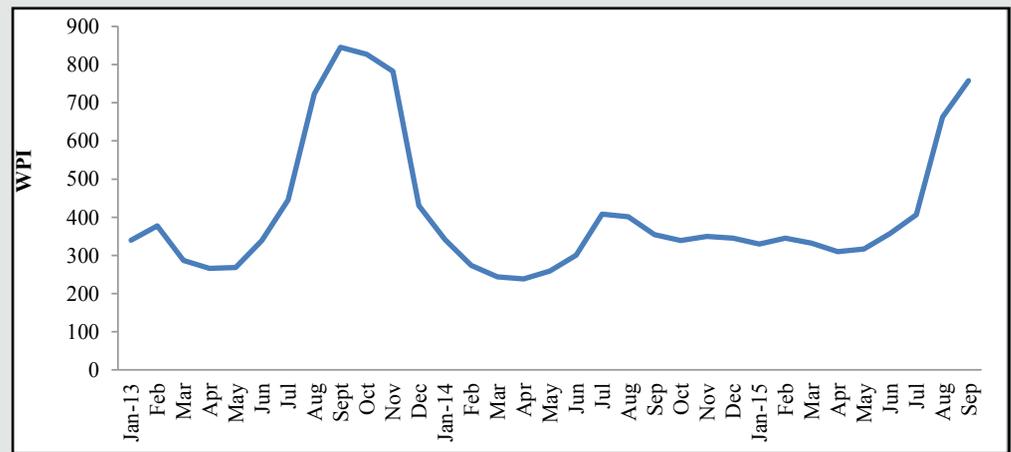
	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16F
Production	12191	15118	17511	16813	19402	18736	19770
Imports	1	13	0	0	0	0	0
Total Supply	12192	15131	17511	16813	19402	18736	19770
Exports	1677	1182	1310	1667	1482	1238	1270
Total Utilization ('000 Tonnes)	10515	13949	16201	15146	17920	17497.9	18500
Share of Exports to Production (%)	13.76	7.82	7.48	9.91	7.64	6.61	6.42
Share of Domestic Use to Total Supply (%)	86.2	92.2	92.5	90.1	92.4	93.4	93.6

**Source:** NHB and CMIE; Note: F- Forecast

### IV.8.3 Prices

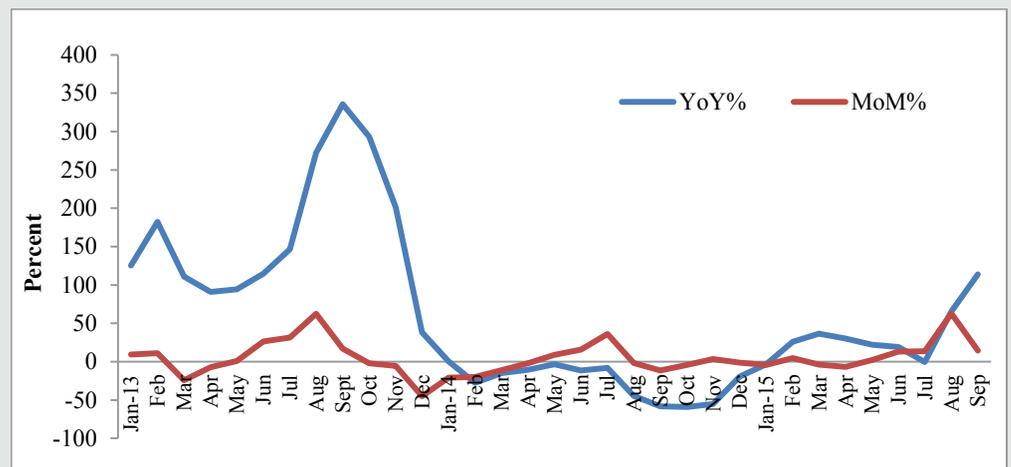
The average annual wholesale price of onion measured by the WPI was lower at 333.7 in 2014-15 compared to 482.2 in 2013-14. However, during the period April to September 2015, the average annual WPI for onion was almost 43 per cent higher than that of Apr-Sept 2014. During this period, average WPI for onion has gone up from 327 in Apr-Sept 2014 to 468.5 in Apr- Sept 2015 (Figure IV.8.2). On M-o-M basis, the WPI for onions showed a negative trend from August 2014 through April 2015. However, from May 2015 onwards, the WPI for onions is again showing a consistent positive growth which continued till August 2015, thereafter it moderated in September. WPI for onions was higher at 758 in September 2015 as compared to 662.8 in August 2015, an increase of 14.4 per cent (Figure IV.8.3).

Figure IV.8.2 WPI Trends in Onion



Source: Office of Economic Adviser, Government of India

Figure IV.8.3 Change in WPI in Onion M-o-M% and YoY%



Source: Office of Economic Adviser, Government of India

Figure IV.8.3 shows that for almost whole of 2015, the Y-O-Y percentage change in onion price index remained high double-digit rate of increase, except for the month of July 2015 when it recorded a decline of 0.5 percent over July 2014. The Y-O-Y growth in onion WPI was quite high in last two months August and September 2015 over the corresponding months previous year. In Sept 2015, the Y-O-Y percentage change in WPI onions increased more than double by 113.7 per cent over WPI as registered in Sept 2014. Onion prices rose this year on account of lower onion production brought about by adverse weather conditions.

The prices declined in all major markets between January and March 2015, and in few markets it also showed a decline in April 2015. But from May 2015 onwards, the wholesale prices for onions increased in all markets especially the months of July and August 2015 when the prices increased significantly compared to the previous months (Table IV.8.3). Among major markets, maximum price rise in August 2015 over July 2015 was in Hyderabad at 100 per cent followed by Mumbai (64 per cent), Bhubaneswar (56.8 per cent) and Chennai (54.3 per cent) (Figure IV.8.4). In India's biggest market for onion, Lasangaon, the prices more than doubled in July. However, in August 2015, it was already up by 48.4 per cent over July 2015.

As per the latest available reports, in October 2015, there have been some import arrivals from Egypt and Afghanistan helping to ease wholesale prices. The easing of government phytosanitary norms has also helped in raising imports. Moreover, the arrival of new crop in coming months from Maharashtra, MP and Rajasthan will further ease prices.

**Table IV.8.3: Monthly Wholesale Prices of Onions in 2015 (Rs/ Quintals)**

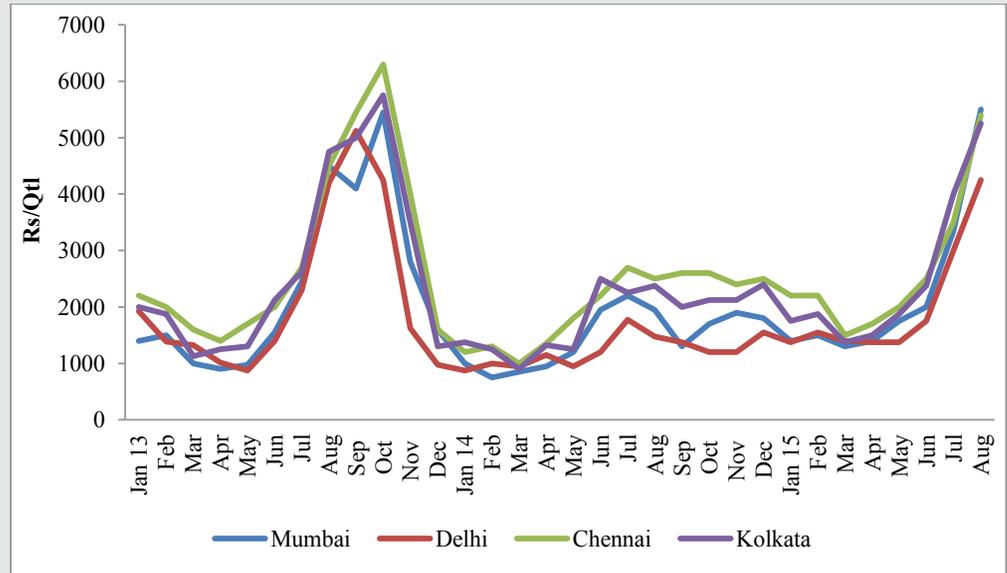
	Jan 15	Feb	Mar	Apr	May	Jun	Jul	Aug
Mumbai	1400	1500	1300	1400	1750	2000	3350	5500
Delhi	1375	1550	1400	1375	1375	1750	3000	4250
Chennai	2200	2200	1500	1700	2000	2500	3500	5400
Kolkata	1750	1875	1375	1500	1875	2375	4000	5250
Hyderabad	1900	1900	1100	1250	1700	1800	2700	5400
Bangalore	2000	1700	1700	1300	1900	2000	3600	4800
Lasalgaon	1400	1200	1150	1050	1100	1500	3100	4600
Bhubaneswar	1700	2000	1650	1600	1700	2200	3700	5800

**Source:** Directorate of Economics and Statistics, Ministry of Agriculture.

In line with wholesale prices, the retail prices for onions also showed an increasing trend from April 2015 onwards. The average annual retail prices in January to August 2015 showed an increase in all four major markets over the same period last year. The highest increase was in Mumbai (49 per cent) followed by Delhi (44 per cent) and Chennai (41 per cent). In fact, most of this hike in retail prices was in recent months (Figure IV.8.5).

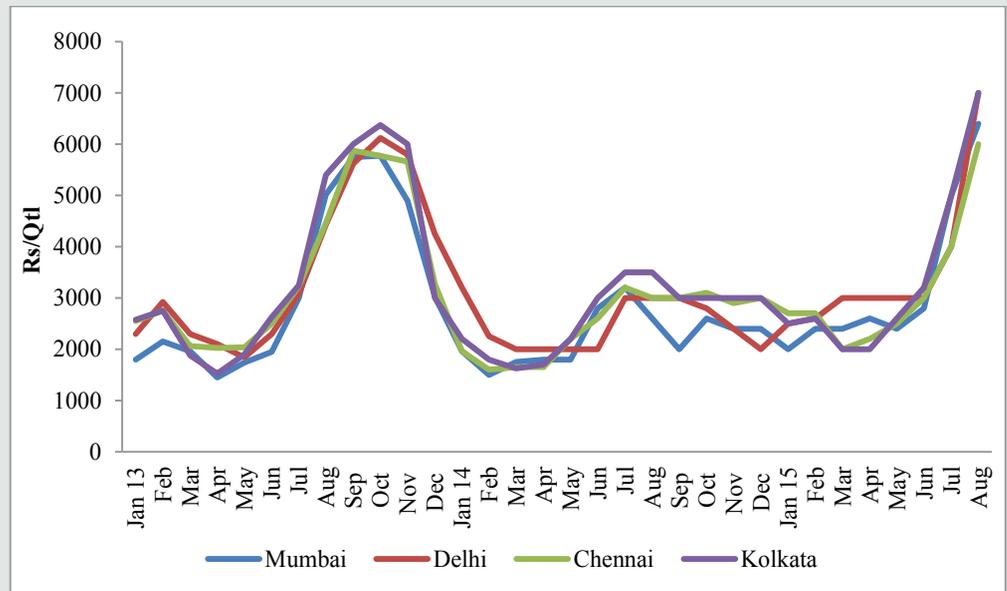
For almost whole of 2015, the Y-O-Y percentage change in onion price index remained high double-digit rate of increase.

Figure IV.8.4: Wholesale Prices of Onion in Metro Cities



Source: Directorate of Economics and Statistics, Ministry of Agriculture.

Figure IV.8.5: Retail Prices of Onion in Metro Cities



Source: Directorate of Economics and Statistics, Ministry of Agriculture.

### IV.8.4 Market arrivals

Onion arrivals in the month of October 2015 compared to previous month have declined in Delhi and Mumbai while increased in Kolkata and Bangalore. The decline in market arrivals was the highest in Delhi, where market arrivals declined by 23 per cent in Oct 2015 over Sept 2015 (Table IV.8.4).

**Table IV.8.4: Monthly Arrival of Onions in Wholesale Markets (Tonnes)**

Centres	Apr 15	May 15	Jun 15	Jul 15	Aug 15	Sept 15	Oct 15
Delhi	38488.1	39554.0	33479.9	25169.9	22494.0	28602.3	21880.3
Mumbai	28968.0	25902.0	30366.0	32360.0	39192.0	43853.0	37829.0
Kolkata	386.0	261.0	480.0	205.5	207.0	212.5	319.0
Bangalore	22709.0	22604.0	23273.0	19075.0	28213.0	23842.0	24172.0

Source: AGMARKNET

State-wise average daily arrivals of onions show increase in almost all major states in Oct 2015 over Sept 2015. The highest increase is registered in Madhya Pradesh where average daily arrival of onions has increased from 32.4 tonnes in Sept 2015 to 81.7 tonnes in Oct 2015. The next highest increase is registered in Gujarat where daily average market arrival has reached 165.3 tonnes in October 2015 (Table IV.8.5).

**Table IV.8.5: Average Daily Arrival of Onions in Wholesale Markets (Tonnes)**

Consuming Centres	Apr 15	May 15	Jun 15	Jul 15	Aug 15	Sept 15	Oct 15
WB	28.0	35.5	34.0	26.7	25.5	25.2	30.5
MP	110.6	294.1	227.8	65.0	38.9	32.4	81.7
Punjab	15.4	25.9	28.9	18.3	12.0	12.0	13.7
U.P	39.8	41.2	35.4	29.7	23.5	24.7	27.6
Maharashtra	579.8	541.0	454.2	326.8	181.5	141.1	220.0
Rajasthan	73.3	45.4	34.7	29.8	22.9	16.9	23.4
Gujarat	337.9	202.7	123.4	130.8	109.3	80.0	165.3
Karnataka	303.3	256.3	223.8	220.4	333.1	578.3	883.6

Source: AGMARKNET

## Assessment

Onion production declined in 2014-15 to 18.7 million tonnes from 19.4 million tonnes in 2013-14 due to adverse weather conditions. However, it is forecasted to increase 19.7 million tonnes in 2015-16. April through September 2015 experienced a significant spike in onion prices all over the major markets in India. But as per the latest available reports the prices are expected to come down in coming months due to improved supply via imports. The recent government initiatives of imposition of stock holding limits, onion imports and increasing the minimum export prices from \$425 to \$700 per tonne may further help to ease price situation in coming months. However, the price scenario in the coming months will depend on the fresh arrivals of kharif onion crops in Maharashtra, Andhra Pradesh and Karnataka.

## IV.9 Banana

### IV.9.1 Production trends

Banana production is estimated at 28.14 million tonnes in 2014-15 as per the fourth Advance Estimates, 5.35 per cent less than the final estimates for 2013-14. The area planted to banana in 2014-15 increased by 5.23 per cent whereas yield declined 10.0 per cent from their levels in 2013-14. In 2013-14, Tamil Nadu, Karnataka, Andhra Pradesh and

The recent government initiatives of imposition of stock holding limits, onion imports and increasing the minimum export prices from \$425 to \$700 per tonne may further help to ease price situation in coming months.

Based on a regression equation, banana production in 2015-16 is forecast at 32.00 million tonnes.

Maharashtra had the largest crop area under banana. In terms of production Tamil Nadu accounts for the largest share followed by Gujrat, Maharashtra, and Andhra Pradesh (Table IV.9.1). Figure IV.9.1 shows the trend in area and production of banana since 1996-97

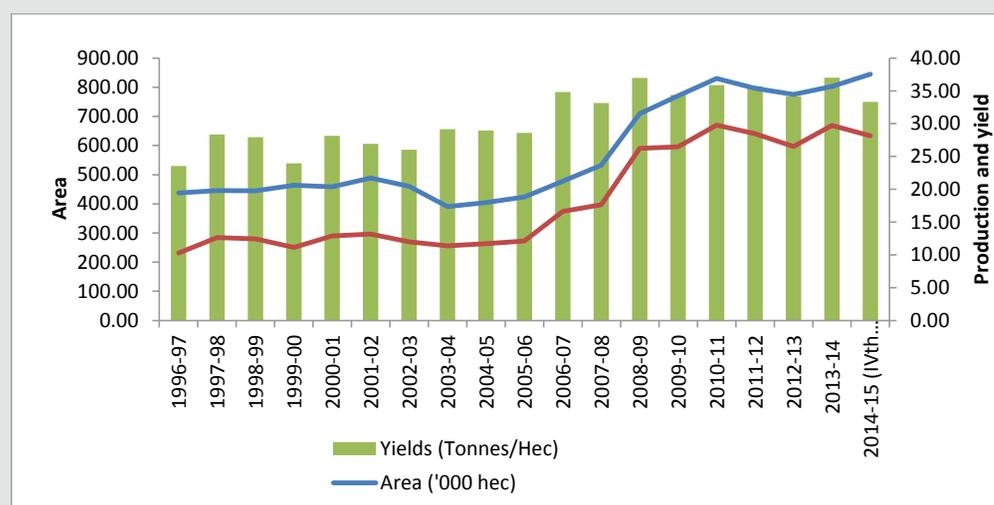
Banana requires assured irrigation and production is also affected by rainfalls where irrigation is a limiting factor. Based on a regression equation, banana production in 2015-16 is forecast at 32.00 million tonnes.

**Table IV. 9.1: Area Production and Yield of Banana in the Major Producing States**

States	2013-14			Share of States in 2013-14 (%)	
	Area '000 ha	Production '000 tonnes	Yield Tonnes/ha	Area	Production
Andhra Pradesh	95.9	3,356.8	35.0	12.1	12.2
Assam	52.0	892.7	17.2	6.5	3.2
Bihar	34.2	1,789.3	52.3	4.3	6.5
Chhattisgarh	20.8	498.8	24.0	2.6	1.8
Gujarat	70.6	4523.5	64.1	8.9	16.4
Karnataka	102.2	2656.1	26.0	12.9	9.6
Kerala	61.0	515.7	8.5	7.7	1.9
Madhya Pradesh	26.3	1,735.0	66.0	3.3	6.3
Maharashtra	83.0	3,694.0	44.5	10.4	13.4
Orissa	25.1	476.6	19.0	3.2	1.7
Tamil Nadu	118.0	5650.0	47.9	14.8	20.5
Uttar Pradesh	2.4	115.8	48.2	0.3	0.4
Others	103.7	1,669.2	24.1	13.0	6.1
All India	795.2	27,573.6	34.7	100.0	100.0

**Source:** National Horticulture Board (NHB).

**Figure IV.9.1: Area, Production and Yields of Banana**

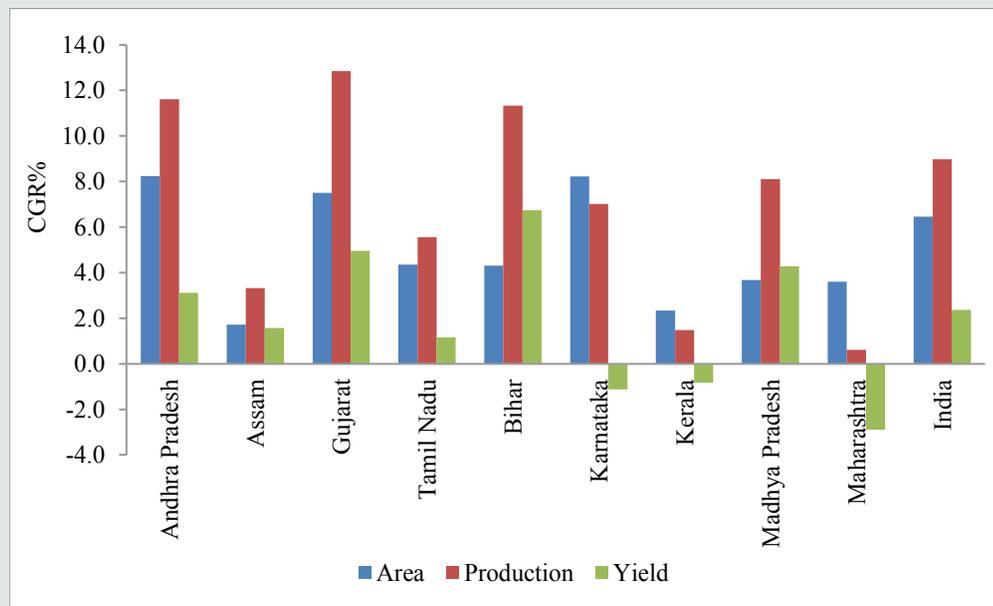


**Source:** NHB.

State-wise growth rates of production during 2001-2014 was the highest in Gujarat, followed by Andhra Pradesh and Bihar. Maharashtra, Kerala and Assam showed the lowest growth during this period (Figure IV.9.2). The growth rate in area under banana cultivation

was the highest in Andhra Pradesh, Karnataka, and Gujarat. Maharashtra, Kerala and Karnataka registered a negative growth rate in productivity, while Bihar, Gujarat and Madhya Pradesh registered the highest growth rates. Tamil Nadu was the largest banana producing state in 2013-14, followed by Maharashtra, Gujarat and Andhra Pradesh. Production growth at national level is mainly driven by growth in area.

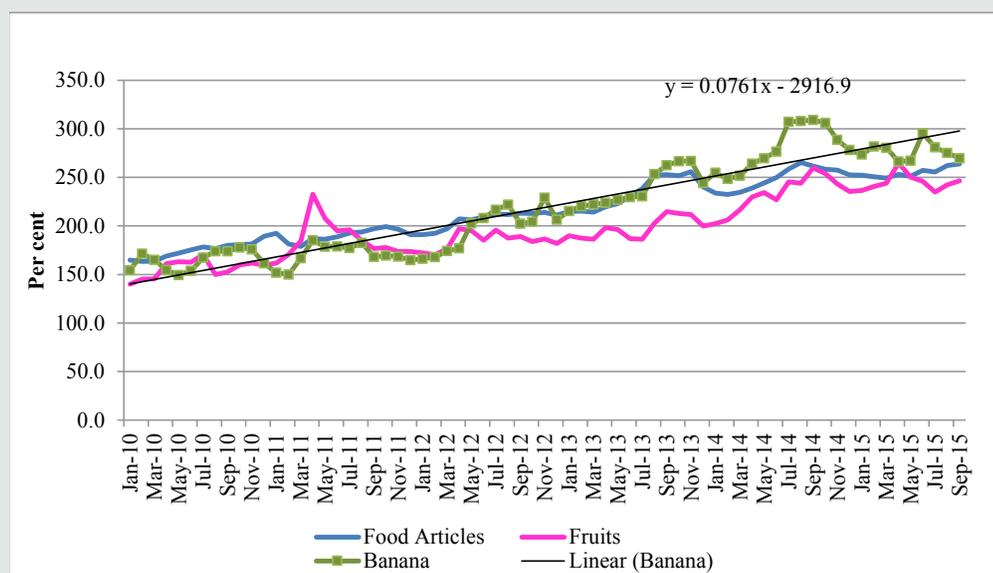
Figure IV.9.2: Banana - Area, Yield and Production Growth Rate State (2001-2014)



## IV.9.2 Prices

Although the WPI of banana showed a gradual increase from early 2010 its pace accelerated in mid-2012. In 2013 prices spiked since August reaching a peak in November but declined in December 2013 (Figure IV.9.3). From March 2014 onwards prices started increasing continuously and reached maximum in Sep 2014 and thereafter declined marginally. A declining production along with continued high demand and rising cost pressures led to the sharp price rise.

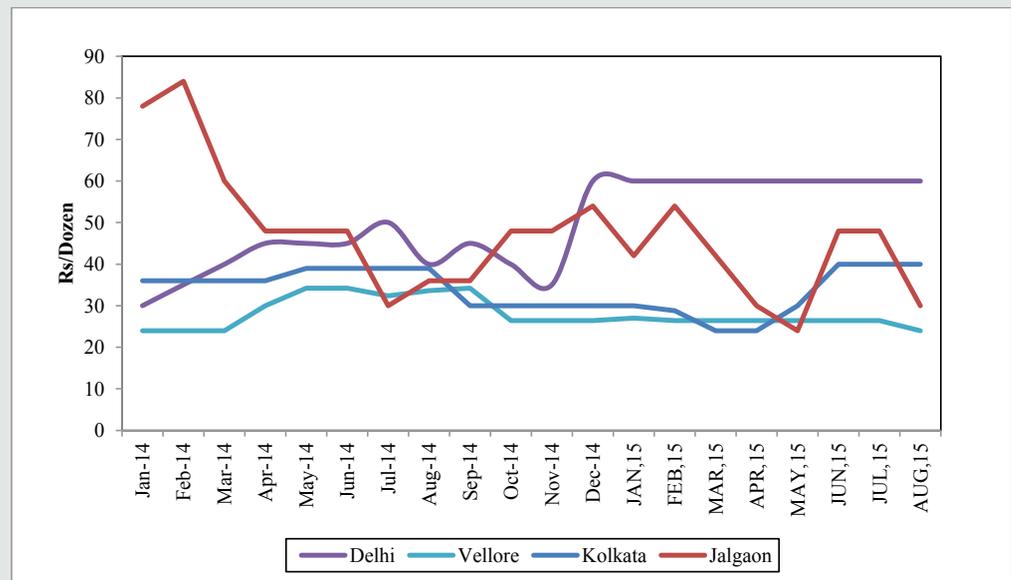
Figure IV.9.3: WPI of Banana Relative to WPI of Fruits and Food Articles



Production growth at national level is mainly driven by growth in area.

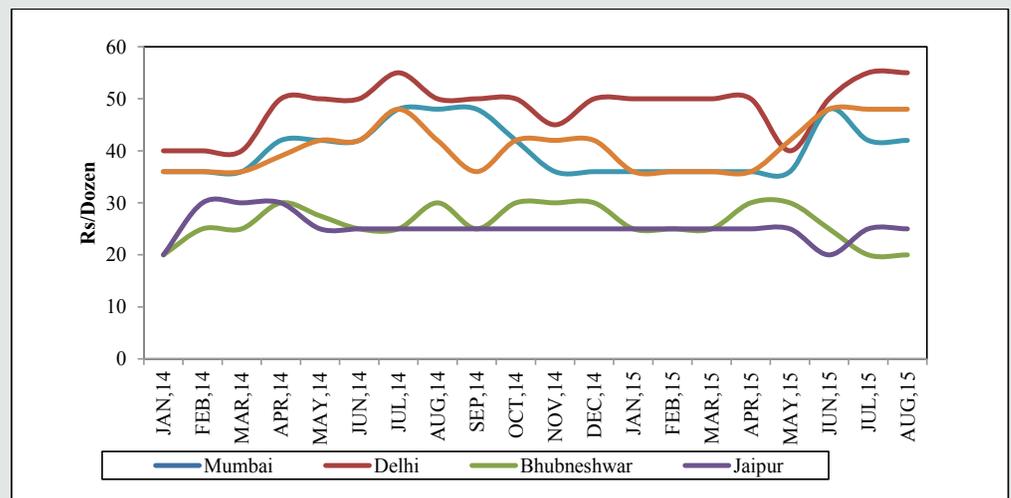
Wholesale price fluctuations across major production and consumption regions showed divergent trends in the recent months. For instance wholesale prices in Jalgaon showed wide fluctuations whereas prices in Delhi, Vellore and Kolkata were relatively stable. (Figure IV.9.4). While variety differences would capture variations in absolute price levels, the differences in price change also reflect the constraints in post-harvest management facilities. The wholesale prices in large consuming centres such as Delhi and Kolkata may have wider sources of supplies and see less volatile price changes than the centres where supply sources are more concentrated.

Figure IV.9.4: Wholesale Prices of Banana in Selected Cities



Among the four metros, retail prices during April to August 2015 were highest in Delhi and Kolkata. Chennai being closer to the producing regions showed relatively lower prices. In the smaller cities of Bhubaneswar and Jaipur, retail prices were lower than in the metros during most of the year (Figure IV.9.5).

Figure IV.9.5: Retail Prices of Banana in Selected Cities



The variations in wholesale and retail prices across cities point to large regional variations due to lack of market integration. While assessment of differences in wholesale and

The variations in wholesale and retail prices across cities point to large regional variations due to lack of market integration.

retail prices in various market requires comparison of similar varieties, the data do reflect significant variations in the pattern of changes in prices at the wholesale and retail level. (Table IV.9.2 and Figure IV. 9.5).

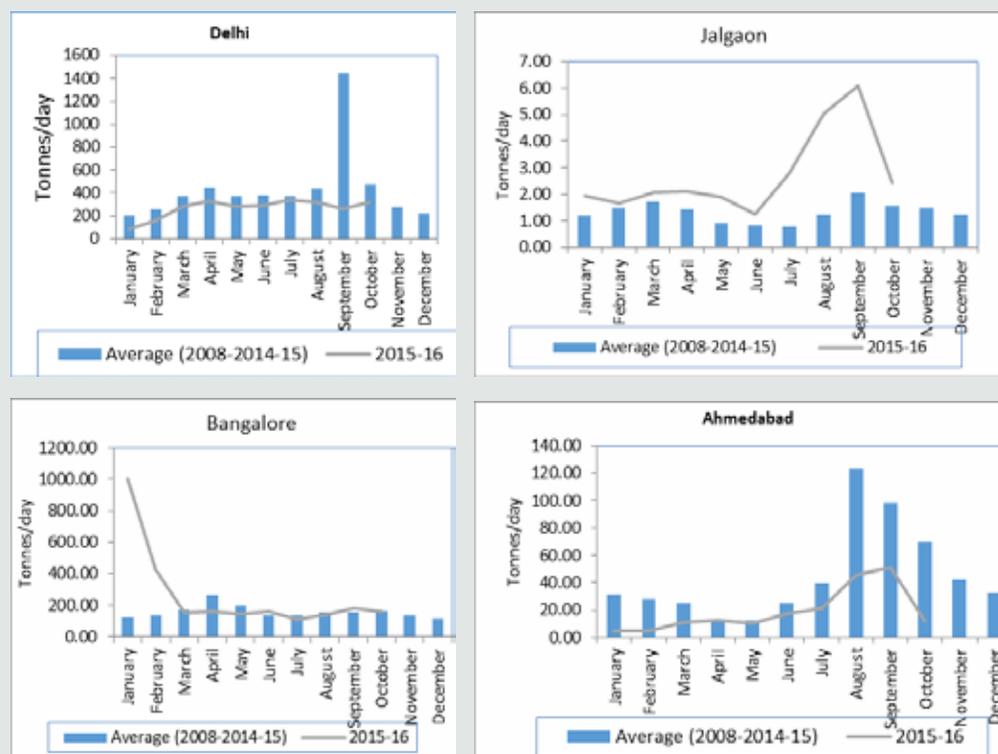
**Table IV.9.2 Monthly Price Differential: Wholesale and Retail**

Cities	Aug-14	Aug-15	% Change
Wholesale Prices (Rs/Dozen)			
Delhi	40.0	60.0	50.2
Kolkata	39.0	40.0	2.5
Jalgaon	36.0	30.0	-16.7
Vellore	33.6	24.0	-28.6
Retail Prices (Rs/Dozen)			
Cities	Aug-14	Aug-15	% Change
Delhi	50	55	10.0
Kolkata	42	48	14.3
Chennai	48	42	-12.5
Jaipur	25	25	0.0
Bhubaneshwar	30	25	-16.7

### IV.9.3 Market arrivals

Banana is available in India round the year. However, arrivals of banana start increasing from April and peak during August to October. The pattern of market arrivals in Delhi (average of 2008-2013) reflects the highest arrivals in the month of September after which arrival declined (Figure IV.9.6).

**Figure IV.9.6: Per Day Average Arrivals of Bananas (Tonnes)**



Source: AGMARKNET website.

Post-harvest losses are estimated very high at around 20–24 per cent of production, amounting to 3 to 4 million tonnes.

#### IV.9.4 Banana supply and demand

Almost the entire production is consumed domestically. Export as a percentage of production is less than 1 percent. (Table IV.9.3). Post-harvest losses are estimated very high at around 20–24 per cent of production, amounting to 3 to 4 million tonnes. These losses are basically due to faulty handling procedures like improper transportation, lack of packaging, cold chain and post-harvest storage infra-structural facilities.

**Table IV.9.3: Banana Supply and Demand ('000 tonnes)**

	2012-13	2013-14	2014-15	2015-16 F F
Production	26,510	29,730	28,140	32,000
Imports	0	0	0	0
Total Supply	26,510	29,730	28,140	32,000
Exports	50	35	64	72
Total Domestic Utilisation	24,819	29,695	28,076	31,928
Ratio of Exports to Production (per cent)	0.2	0.1	0.2	0.2

Source: NHB & Department of Commerce and Industry, \*Export and Import projections of 2015-16 are based on average growth rate for the recent five years.

#### IV.9.5 Trade

Exports of banana from India are negligible while a small quantity is exported to Gulf countries mainly from Kerala and southern Tamil Nadu amounting to less than 1 per cent of production. This represents less than 0.3 per cent of the international banana trade (Table IV.9.4).

**Table IV.9.4: Banana Export Status (MT)**

Country	2013-14	2014-15	2015-16 (April-Aug)
U.A.E	14,802	13,897	19,011
Saudi Arabia	4,403	4,744	9,314
Iran	790	886	3,378
Kuwait	2,220	2,143	4,684
Bahrain	2,566	2,073	1,802
Nepal	11,206	5,151	9,154
Qatar	2,809	1,934	3,211
Oman	3,925	3,494	4,926
Maldives	644	301	664
Others	6,639	305	7,646
Total	50,004	34,928	63,791

Source: Department of Commerce and Industry.

## Assessment

Based on trend and rainfall data 2015-16 banana production is projected at 32.00 million tonnes. The recent price trends suggest that increased supply has not been adequate to bring down prices. The market arrivals data also does not show any improvement in supplies. Therefore, efforts to improve productivity and incentive to producers in the form of efficient post-harvest management support and building up of cold storage facilities would be critical to ensure growth of this sector to meet rising consumption demand.

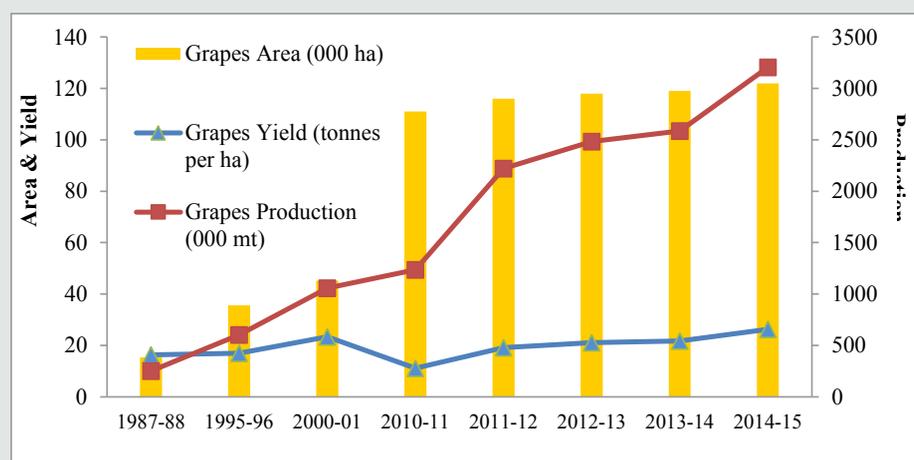
## IV.10 Grapes

### IV.10.1 Higher production in 2014-15

Grape is a commercially important fruit crop of India with about 1.6 per cent of the total area of fruit crops in the country and 2.9 per cent of total fruit production. Grape is a temperate crop, which has been adapted to the sub-tropical climate of peninsular India. India is among the first ten countries in the world in the production of grape. According to third advance estimates by the NHRDF for 2014-15, India's overall production for grapes is likely to be at 3.20 million tonnes, 0.64 per cent higher than the 2.59 million tonnes in 2013-14. All India area and productivity of grapes in 2014-15 is around 122,000 hectares and 26.3 tonnes per hectare respectively (Figure IV.10.1). This crop occupies fifth position amongst fruit crops in India. Grape production is following an increasing trend since 1987 onwards. Although, area under grapes production increased by 9.4 per cent in 2011 over 2001, production increased by 1.6 per cent only, while the productivity showed a negative growth. But since 2011, production increased sharply. From 2010-11 to 2014-15, area under grapes increased by 2.4 per cent, production by 26.9 percent and yield recorded a growth rate of 24 percent.

Major grape-growing states are Maharashtra, Karnataka, Andhra Pradesh, Tamil Nadu, and the north-western region covering Punjab, Haryana, western Uttar Pradesh, Rajasthan and Madhya Pradesh. According to the first advance estimates of 2014-15, Maharashtra ranks first in terms of production accounting for more than 83 percent of total production and highest productivity in the country. On the other hand, Karnataka accounts for 12 percent of share in grapes production at all India level (Table IV.10.1). Together these two states constitute about 95 percent of total grapes production in the country. In major grapes producing states, the area under cultivation has increased in Maharashtra, Karnataka and Tamil Nadu but declined in Andhra Pradesh from 2010-11 to 2013-14.

Figure IV.10.1: Area, Production and Yield of Grapes in India



Source: Directorate of Economics and Statistics, Ministry of Agriculture, 3rd Advance estimates 2014-15.

Efforts to improve productivity and incentive to producers in the form of efficient post-harvest management support and building up of cold storage facilities would be critical to ensure growth of this sector to meet rising consumption demand.

**Table IV.10.1: State-wise Production of Grapes in 2014-15 (000 MT)**

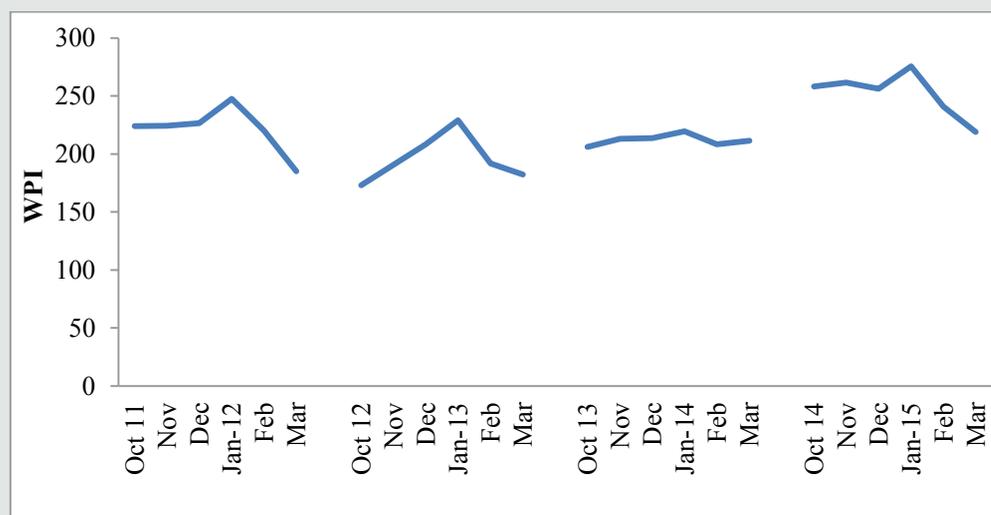
State	2011-12	2012-13	2013-14	2014-15*
Maharashtra	1,810	2,050	2,160.0	2,160.0
Karnataka	288.1	320.9	302.4	312.5
Tamil Nadu	55.1	43.4	47.4	52.6
A.P.	28.9	31.5	8.9	8.9
Mizoram	24.3	20.8	23.9	24.5
Others	14.5	16.51	42.8	43.5
Total	2,220.9	2,483.1	2,585.3	2,602.0

**Note:**\* 1st Advance Estimates of 2014-15.

**Source:** www.nhrdf.com

### IV.10.2 Prices

Grapes is a seasonal fruits and available for the month of October to March only. Almost whole of 2014-15 experienced higher prices for grapes compared to that of 2013-14. Annual average WPI for grapes (October- March) increased to 252 in 2014-15 from 212 in 2013-14, an increase of 18.8 percent in 2014-15 over previous year (Figure IV.10.2). This is the highest annual growth rate since 2011 onwards in WPI for grapes. The month-wise trend for 2014-15 shows that WPI for grapes increased till Jan 2015 when it reached the highest point at 275.5 from 258.3 in Oct 2014, but for the next two months i.e. Feb-Mar 2015 the prices declined gradually.

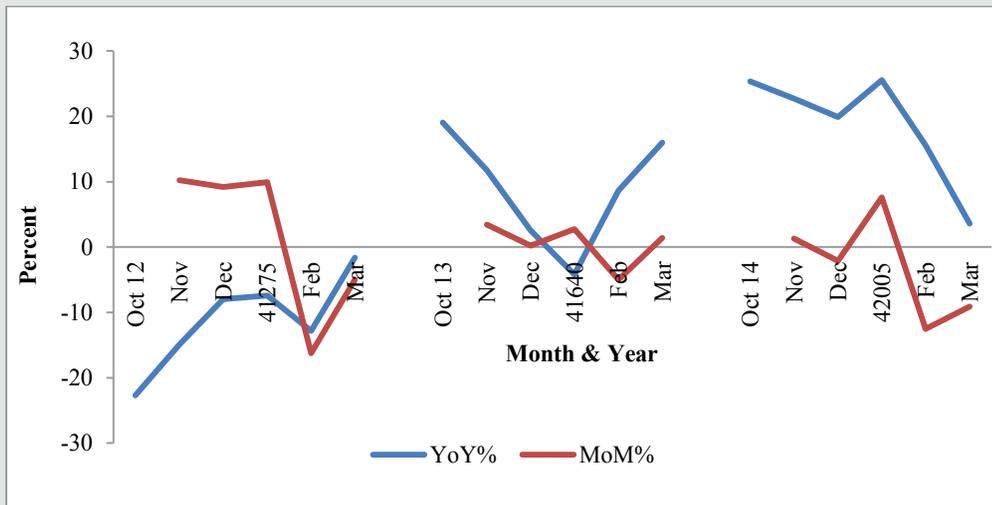
**Figure IV.10.2: WPI Trends in Grapes**


**Source:** Office of Economic Adviser, Government of India.

The trend of M-o-M percentage change is following almost similar pattern of changes over last few years. The M-o-M percentage change shows that every year the growth rate increases between Oct-Jan, but then declines in Feb-March. The Y-o-Y percentage change showed higher growth rates for whole of Oct – Feb 2015 over Oct- Feb 2014, except for the month of March where Y-o-Y percentage change was higher in March 2014 at 16 percent over 3.6 percent change in March 2015 (Figure IV.10.3). However, in 2014-15, the

Y-o-Y percentage change decline from Oct 2014 to Dec 2014, in Jan 2015 again increased to 25.6 percent and thereafter declined in Feb and March 2015.

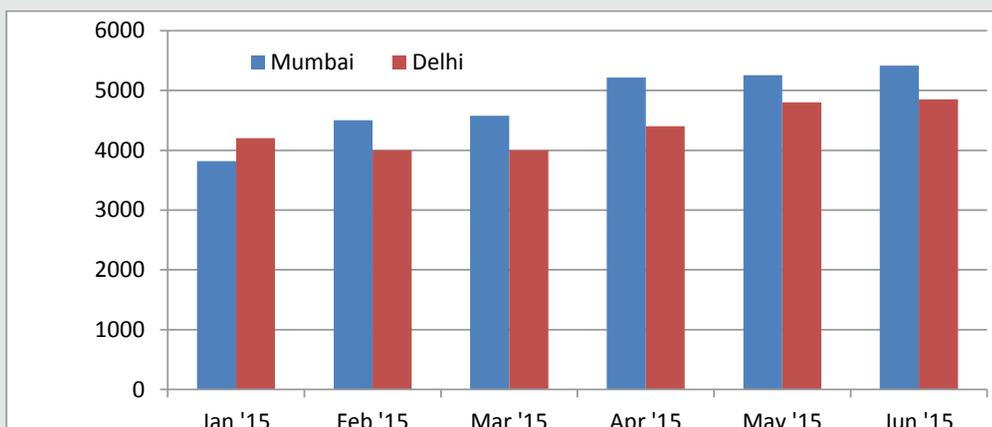
**Figure IV.10.3: Percentage Change in WPI in Grapes M-O-M and Y-O-Y**



**Source:** Office of Economic Adviser, Government of India.

The wholesale prices of grapes on an average showed an increasing trend in 2015 first half in metro cities. The wholesale in Mumbai goes up from Rs 3820 per quintal in Jan 2015 to Rs 5,416 per quintal in June 2015 reflecting a growth rate of 41.7 percent in June over Jan 2015 (Figure IV.10.4). Delhi on the other hand, registered growth rate of 15 percent from Rs 4,200 per quintal in Jan 2015 to Rs 4,850 per quintal in June 2015. Delhi also registered decline in wholesale prices for grapes in Feb 2015 which remained almost stagnant in March 2015.

**Figure IV.10.4: Wholesale Prices of Grapes in Metro Cities in 2015 (Rs. per Quintal)**



**Source:** Directorate of Economics and Statistics, Ministry of Agriculture.

### IV.10.3 Trade

Grape is one of the important fruit in terms of global trade as well. As per the data published by APEDA, India has exported only 14,570 tonnes during 2001-2002 which has increased to 85,562 tons in 2006-2007 and further to 192,617 tonnes of grapes worth of Rs. 1,666 crores during the year 2013-14. This, increase has been

mainly due to the fact that India is now able to meet quality requirements including pesticide residue levels of all the importing countries in EU and supplying grapes at competitive prices. However, in 2014-15 the exports declined by 44 percent from 192,617 tonnes in 2013-14 to 107,258 tonnes in 2014-15 due to unseasonal rains and hailstorm in the key harvesting months between March and May in Maharashtra resulting in quality degradation. Exports during April through August 2015 were 20,947 tonnes worth Rs. 203 crores. Major destinations for Indian grapes include Netherland, UK, Russia, UAE, Saudi Arabia, Germany and Thailand.

## Assessment

The third advance estimates by NHRDF shows increase in the all India production of grapes from 2.59 million tonnes in 2013-14 to 3.20 million tonnes in 2014-15. Exports also declined in 2014-15 due to poor quality because of unseasonal hailstorms in major grape producing and exporting state, Maharashtra. On an average the WPI for grapes was higher in 2014-15 compared to that of 2013-14.

## IV.11 Milk

### IV.11.1 Production trends

India's milk production exceeded 137.7 million tonnes in 2013-14 recording a growth of 4% over 2012-13. Production in 2014-15 is tentatively placed at 142 million tonnes. Significantly below normal monsoon rains for the second consecutive year have adversely affected fodder production and quality, which would have negative impact on animal productivity and hamper milk production during 2015-16.

As the largest producer of milk and one of the largest producers of value added milk products in the world, the country's share in world milk production has reached 18 per cent. From 2000-01 to 2013-14, production of milk rose by an average growth rate of 4.2 percent per annum (y-o-y) and per capita availability grew by an average of 2.7 per cent (y-o-y) due to increase in milk yield and milch animal population. The estimated per capita availability of milk in India increased to 307 grams per day surpassing the world average of 294 grams per day but well below that of developed countries, estimated at 831 grams per day. Per capita milk consumption in Asia is estimated at 186 grams per day. Figure IV.11.1 shows production and per capita availability of milk in India since 2000-01.

India has the largest cattle and buffalo population in the world with number of dairy cows (both exotic/crossbred and indigenous in milk) placed at over 44 million and number of dairy buffaloes at over 39 million. However, milk yield in India is low due to preponderance of indigenous breeds with low yield potential compounded by shortage of fodder and balanced feed. The average yield of exotic/crossbred cows is estimated at 6.8 kg/day, indigenous cows at 2.50 kg/day and buffaloes at 4.91 kg/day during 2013-14. The trend in average yield per animal in India since 2009-10 is presented in the Figure IV.10.2.

The estimated per capita availability of milk in India increased to 307 grams per day surpassing the world average of 294 grams per day.

Milk yield in India is low due to preponderance of indigenous breeds with low yield potential compounded by shortage of fodder and balanced feed.

Figure IV.11.1: Production and per capita Availability of Milk since 2000-01

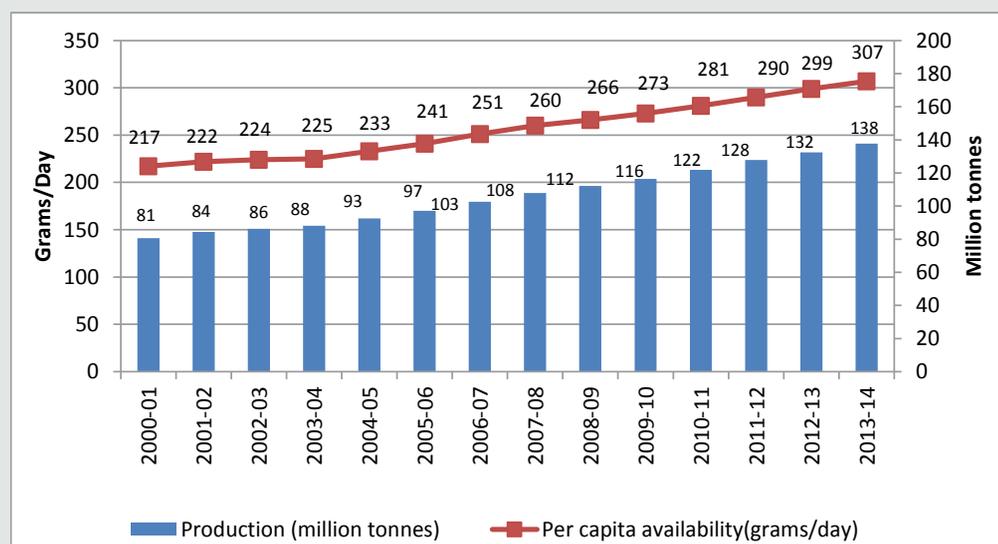
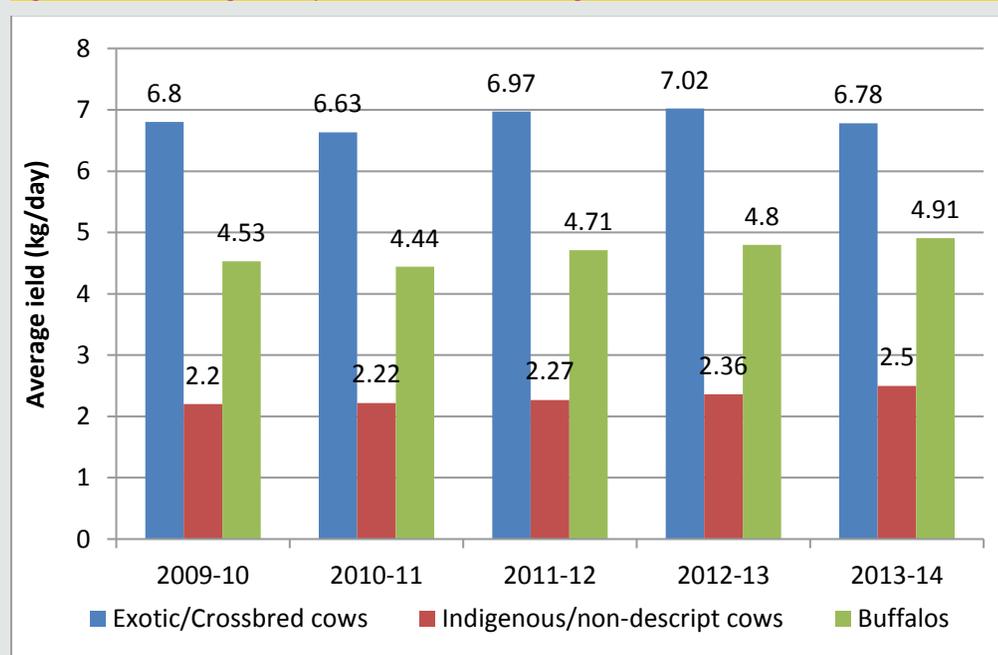


Figure IV.11.2: Average Yield per Animal in India during 2009-10 to 2013-14



Milk yield per animal varies significantly among states. The average milk yield in Punjab for exotic/crossbred cows with an average milk yield of over 11 kg/day is three times the productivity of similar category of cows in West Bengal, which has the lowest yield of 3.58 kg/day. Likewise Punjab has the highest average yield level of 6.59 kg/day and 8.72 kg/day for non-descript cows and for buffaloes, respectively, whereas Kerala has the lowest yield at 0.59 kg/day for non-descript cows and Meghalaya has the lowest yield at 1.83 kg/day for buffaloes.

The increase in milk production during the past decade was mainly the result of dairy herd expansion, as average yields fluctuated in a narrow range for Exotic cows and increased marginally for non-descript cows and buffaloes. Number of animals in milk and average milk yield per animal is given in the Table IV.11.1.

**Table IV.11.1: Number of Animals in milk and Average yield per animal**

Year	Exotic/Crossbred cows		Indigenous/non-descript cows		Buffalos	
	Animals in milk (Million)	Average yield (kg/day)	Animals in milk (Million)	Average yield (kg/day)	Animals in milk (Million)	Average yield (kg/day)
2009-10	11.26	6.80	30.20	2.20	36.17	4.53
2010-11	11.81	6.63	30.95	2.22	37.13	4.44
2011-12	12.29	6.97	31.88	2.27	38.19	4.71
2012-13	12.64	7.02	31.87	2.36	38.64	4.80
2013-14	13.76	6.78	31.00	2.50	39.29	4.91

When seen in the global context the average milk production from exotic /crossbred cows at 6.8 kg/day in India is almost one fourth of the best of 30.2, 27.8, 27.1 and 26.8 kg/day of milk production recorded for Israel, Republic of Korea, United State of America and the Northern America, even though Martinique recorded the highest milk yield in the world at 51.4 kg/day in 2013. But, still at 2475 kg/year, it is closer to the world average of 2640 kg/year. However, for the indigenous cows average yield at 912 kg/year is well below the exotic/ crossbred cows. Table IV.10.2 presents average yield per cow for top ten countries in the world.

**Table IV.11.2: Average Milk Yield per Cow of Top Ten Countries in 2013**

World Rank	Country	Average litres/annum
1	Martinique	18,750
2	Israel	11,040
3	Republic of Korea	10,160
4	USA	9,901
5	Northern America	9792
6	Denmark	8766
7	Canada	8739
8	Sweden	8459
9	Saudi Arabia	8340
10	Finland	8222
	World average	2,640

**Source:** FAO stat 2015.

Feed, management practices and veterinary and extension services deficiencies are the reasons for the low milk productivity in India besides poor animal genetics. India needs to step up efforts to bring about productivity improvement through genetic upgradation and better management of feed and fodder.

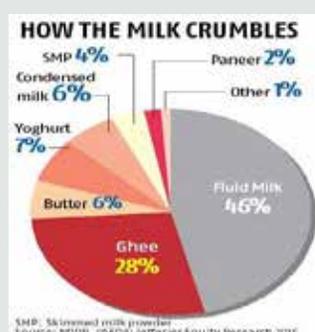
India needs to step up efforts to bring about productivity improvement through genetic upgradation and better management of feed and fodder.

## IV.11.2 Consumption

India's per capita dairy consumption has already surpassed the world average, but it is still well below the per capita consumption in the developed countries. However, it is significantly higher at 112 kg/year as compared to 71.7 kg/year in the developing countries. Rising income, urbanisation, growing awareness for protein rich diet and easy availability of dairy products through organized retail stores, are fueling dairy products consumption in the country.

The consumptions pattern of dairy products in India is tilted towards traditional products such as curd, butter, ghee and paneer, as almost 45 per cent of the milk produced is consumed within households. However, customer preferences and spending pattern are changing. Western products, particularly milk powder, ice cream, dairy chocolates and cheese are also gaining acceptance particularly in urban areas. Going by the findings of a 2015 report by Jefferies Equity Research India on the dairy sector, more and more Indians are buying their milk in branded plastic pouches, bottles and cartons instead of the grey market. Value added dairy products such as ghee, butter, cheese are also in demand and consumer prefers to buy these products off the shelf. Further the findings say "Nearly half the volume is consumed in the fresh liquid form. Ghee (clarified butter) and skimmed milk powder (SMP), which are the relatively commoditised dairy products, account for another 30 per cent,". The consumption pattern of different milk products in India is depicted in Figure IV.11.3.

Figure IV.11.3: Consumption Pattern of milk and milk products in India



Due to sluggish global demand and crash in global dairy prices since July 2014, Indian dairy cooperatives have held procurement prices unchanged but large private players have slashed procurement prices to the extent of 25 per cent, adversely impacting dairy farmers outside the reach of cooperatives. However, for consumers there is no respite as retail inflation for milk and milk products continued to remain high.

## IV.11.3 Trade

Despite being one of the largest milk producing countries in the world, India accounts for a negligible share in the worldwide dairy trade. Exports are mostly confined to non-fat dry milk/skimmed milk powder (NFD /SMP) to milk-deficient neighboring countries such as Bangladesh, Pakistan, Nepal, Bhutan, and Afghanistan and also to UAE. India also exports smaller volumes of casein, butter and other dairy products to neighboring countries. Indian branded milk products are making inroads in to some developed countries also to meet the requirement of Indian emigrants settled in these countries.

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**Dairy cooperatives and some private dairies are now saddled with large stocks of SMP.**

**The European Union abolished the milk quota (or dairy produce quota) in April this year and the US is also focusing on exports, boosting global supplies.**

**Although the government has set an ambitious milk production target of 160 million tonnes for 2015-16, it is unlikely to be achieved given the present trends.**

Government abolished SMP export incentives in July 2014. At the same time global dairy prices also plummeted due to larger production and lower consumption growth. Since then export of dairy products from India, particularly SMP, have declined. As a result, dairy cooperatives and some private dairies are now saddled with large stocks of SMP.

The European Union abolished the milk quota (or dairy produce quota) in April this year and the US is also focusing on exports, boosting global supplies. According to the US Department of Agriculture, global production of milk, cheese and butter will rise to record levels this year.

The global SMP price spurt since August 2015 has opened up a small window of opportunity for Indian exporters over the next few months. South East Asia, Russia and Africa will be the emerging markets for Indian dairy products in the medium term.

## **Assessment**

Despite poor monsoon rains last year, India is estimated to have produced over 142 million tonnes of milk in 2014-15. Significantly below normal monsoon rains for the second consecutive year has adversely affected fodder production and quality, which could negatively impact animal productivity and hamper milk production during 2015-16. Although the government has set an ambitious milk production target of 160 million tonnes for 2015-16, it is unlikely to be achieved given the present trends.





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