

Agricultural Outlook and Situation Analysis Reports

Rabi 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



January 2016

Document of NCAER
Report No. 2016-01-1

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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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**National Council of Applied Economic Research
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Published by

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Shekhar Shah
Director-General



PREFACE

Battling the extremes of drought and unseasonal rains, India's agriculture sector faced a difficult year in 2015, resulting in distress for farmers. Foodgrain output is likely to decline for the second straight year in 2016.

The exceptionally dry start to the *rabi* season affected sowing in all major *rabi* crops such as wheat, gram and rapeseed/mustard. The current open market prices of most *rabi* crops with the exception of pulses, and oilseeds are lower than last year. Another bottleneck facing Indian agriculture is a non-transparent agricultural marketing system and wide intra-regional price disparities and price fluctuations.

The supply side bottlenecks include logistics, inadequate cold storage facilities, and lack of processing facilities that continue to hurt supply and availability of food items such as pulses and perishable food products.

External factors continue to remain less conducive to agricultural exports this year, as they did last year, due to a better global production outlook and large carryover stocks for most traded commodities such as wheat, rice, maize, and soybean/soybean meal, with the exception of sugar. This *NCAER 2015-16 Rabi Crop Report* provides a comprehensive assessment of various factors, including input prices and availability, monsoon rainfall, market demand conditions and government policies, impacting this year's *rabi* crop production.

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

I am delighted that these NCAER Reports for the National Food Security Mission are filling an important gap by building and maintaining a longer-term perspective of the food sector in order to address India's food and nutrition needs. I look forward to NCAER continuing to work closely with the Ministry and other branches of the government on this important set of policy challenges.



Shekhar Shah
Director-General

New Delhi
January 13, 2016

SIRAJ HUSSAIN
SECRETARY



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Government of India
Ministry of Agriculture & Farmers Welfare
Department of Agriculture, Cooperation
& Farmers Welfare

FOREWORD

Climate change and fluctuations in weather patterns have become a global challenge. In India, we have recently experienced two consecutive kharif seasons of deficient monsoon rainfall. As the South-West monsoon accounts for nearly 70 per cent of the country's total rainfall, it plays a crucial role in not just kharif production but also impacts rabi production through its effect on ground water recharge and also water levels in reservoirs, critical for *rabi* crops irrigation. Government is seized of these weather related challenges and there is a concerted effort to improve water management.

In order to optimize the use of water, Government has brought various irrigation programmes under the Prime Minister's Krishi Sinchai Yojana and is adopting an integrated approach towards conservation and management of water. Both Central and State Governments are promoting innovative use of technology and research for conservation of groundwater, sustaining ecological resources and better crop planning. Comprehensive extension efforts are being undertaken, including use of mobile and web based technology, to ensure that benefits of research reach farmers and all other stake holders.

The present rabi Report provides a comprehensive assessment of the challenges arising due to fluctuation in rainfall patterns. This Report covers indicators of supply and demand for major food commodities, both in the domestic economy and the global markets. It highlights the implications of monsoon rains on the output and prices of food commodities. The analysis of supply-demand balance for major commodities provides a useful framework for suitable policy interventions for developing infrastructure related to processing, storage and transport.

I hope that the Report will provide analytical insight for all stakeholders involved in the agriculture and food sectors.

(Siraj Hussain)

Date: January 12, 2016



Executive Summary

Domestic Situation

The Agriculture and allied sector GVA growth in the second quarter of FY 2015-16 is estimated at 2.2 per cent compared to 1.9 per cent in first quarter. The marginal pick up was due to an estimated modest increase in kharif output, in turn assisted by timely policy interventions to stem the effects of the deficient south-west monsoon. Regarding third quarter, the post-monsoon rains were poor and the north-east monsoon commenced on a listless note. The exceptionally dry start to the rabi season has affected sowing in all major rabi crops such as wheat, gram and rapeseed/mustard. Overall, the current outlook for agricultural growth in 2015-16 appears moderate at best at this juncture and is expected to remain similar to the 2014-15 growth rate of 0.2 per cent.

Tracking the wholesale price index and consumer price index for all commodities, it was noticed that although the WPI based inflation for all commodities has been in the negative territory since November last year, the CPI based inflation continues to remain positive. To achieve sustainable growth in the agriculture sector, different new schemes have been introduced by the government during the past one year including Soil Health Card, Paramparagat Krishi Vikas Yojana, Pradhan Mantri Krishi Sinchai Yojana (PMKSY) and National Agricultural Market. Ideas of using solar energy driven pumping systems in farm irrigation and interlinking of rivers have received fresh attention to make the country's agriculture 'drought proof'.

The agriculture outlook is shaped by various factors internal and external, directly or indirectly impacting the agriculture production which include: weather, price environment, input supply, demand conditions, supply bottlenecks, trading environment and external factors. The weather conditions reveal poor rainfall during monsoon and post-monsoon season that left many major wheat growing regions parched, giving an ominous start to sowing of most rabi crops compared to 2014. The price environment shows that the current open market prices of most rabi crops with the exception of pulses, and oilseeds are lower than last year. Among farm inputs, prices of high speed diesel showed a significant decline during the rabi crop planting time, whereas electricity for agricultural use registered a significant increase. Prices of fertilizers and pesticides also recorded modest increase. Input supply situation especially for quality seeds and fertilizer stock for the 2015-16 rabi crops was generally favorable, while the availability of urea, irrigation water storage in major reservoirs this year were less than last year.

The expected improved performance of the economy this year and the increased purchasing power is expected to generate increased demand for high value products such as milk and milk products, fruits and vegetables and meat. The supply side bottlenecks include logistics, inadequate cold storage facilities, and lack of processing facilities that continue to hurt supply and availability of food items such as pulses and perishable food products such as vegetables (mainly onion and potato) and fruits. As far as trade



environment is concerned, the tariff and non-tariff restrictions on international trade see no major change over the last khariff outlook report. External factors continue to remain less conducive to agricultural exports this year as last year due to better global production outlook and large carryover stocks for most traded commodities by India such as wheat, rice, maize, and soybean/soybean meal, except in the case of sugar.

Commodity Analysis

Commodity-wise, the 2016 (MY 2016-17) wheat production is expected to be lower at 85 million tonnes 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. However, this resulted in a large quantity of sub-normal quality wheat in government inventories, which the domestic millers do not prefer, resulting in imports estimated to be about one million tonnes, mostly from Australia. To check imports, the government imposed 10 per cent import duty on wheat, which was later enhanced to 25 per cent. Wheat exports in MY 2016-17 are likely to remain negligible due to likely lower production and lower stocks.

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 12.2 million tonnes due to poor post monsoon-rains and lower water table in reservoirs, taking total 2015 -16 rice production to 103.0 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 to 14.2 million tonnes on October 1, 2015 and are projected to decline to 8.2 million tonnes by the end of the 2015-16 marketing year. India's rice exports in MY 2015-16 (Oct-Sep) are forecast to decline to 9.0 million tonnes from 11.8 million tonnes in MY 2014-15.

Rabi maize production could decline marginally at currently forecast 6 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 21.5 million tonnes, a decline of 9.0 per cent from 2014-15. Total coarse grain production is projected at 38.5 million tonnes against last year's 41.8 million tonnes. 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.

Poor monsoon rains in major pulse growing regions for the second consecutive year are likely to cause a decline in rabi pulse production to 16.6 million tonnes in MY 2015 -16, marginally below the 2014-15 production, which was 2 million tonnes down from the record 2013-14 production of 19.3 million tonnes. The low production will be partly offset by larger imports forecast at 5.5 million tonnes compared to 4.64 million tonnes in 2014-15. Attempts to control domestic pulse prices through imports and de-hoarding operations, may not eliminate the tendency for prices to remain firm in 2015-16 due to lower supplies. However, 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 moderate price spikes.

The below normal monsoon rains in 2014 and 2015, combined with other adverse weather factors such as poor subsoil moisture level, reduced irrigation availability has resulted in a significant decline in oilseed production in MY 2014-15 and 2015-16.

Lower vegetable oil production combined with increasing consumption has resulted in record imports of vegetable oils in recent years, which according to the vegetable oil industry is proving to be detrimental for the domestic oilseed industry and oilseed farmers. On the positive side, larger vegetable oil imports due to low global prices, triggered by record production, has helped to contain vegetable oil price inflation and should help to moderate the price rise in coming months.

With an estimated opening stock 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 meet the increasing domestic requirement of around 27 million tonnes and exports of 2-3 million tonnes. Hence no significant increase in domestic sugar prices is expected. The government has mandated sugar mills to export 4 million tonnes of sugar in MY 2015-16. To offset the increasing cost of sugar production the government recently decided to provide a production subsidy to offset cane cost. These measures, combined with strengthening global prices should result in larger exports from India in 2015-16.

All India potato production during 2014-15 has increased 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 lower at 44.1 million tonnes. Due to lower production, potato prices are expected to increase in the short run. The onion production on the other hand, is likely to see improved production level from 18.7 million tonnes in 2014-15 to 20.6 million tonnes in 2015-16. Moreover, with expectations of increased arrival of imported onions in 2015-16, prices are likely to ease further. The recent government initiatives of imposition of stock holding limits, higher imports and increasing the minimum export prices is likely to improve onion situation in coming months.

According to third advance estimates by NHRD, both area under grapes production and productivity showed improvement in 2014-15 over previous year. However, despite increased production, a decline in exports was registered in 2014-15 due to lower quality of grapes mainly because of unseasonal rains and hails in major grape producing and exporting state, Maharashtra. The WPI prices for grapes on an average showed an increase in 2014-15 (Oct-Mar) over the same period of the previous year. In 2015, the WPI prices showed signs of moderation in early months but in October, prices again strengthened. Latest available data shows that supply of grapes in coming months is likely to improve and therefore there are chances of moderation in prices.

India's milk production in 2014-15 is placed at 146.3 million tonnes compared to 137.7 million tonnes in 2013-14. Despite quality concerns and limitations concerning area under fodder production, it was able to improve productivity of its animals. The government has set a milk production target of 160 million tonnes for 2015-16 at a time when farmers and milk processors are struggling with a situation of oversupply. Consumer will gain from the stable price regime in future.

Global Situation

Production estimates for 2014-15 for most crops by all the agencies have more or less converged. 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. The 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. Trade estimates by various agencies gives mixed views as trade for rice, vegetable oil, oil meal and sugar shows an increase in trade in 2015-16, while wheat, coarse grains shows decline. Pulses export outlook for 2015-16 gives mixed picture as exports from Australia are likely to increase while from Myanmar exports are likely to decline in 2015-16. Most of the commodities like wheat, coarse grains and oilseeds are estimated to stock up in 2015-16, while stock are likely to decline for rice, pulses, vegetable oil, oil meal and sugar.

All commodity prices through September this year have remained well below the prices a year ago. Record productions, large 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. Projections show that most commodity prices are likely to firm up modestly in 2015-16. Most agencies forecast a tightening in international prices of most agricultural commodities in 2015-16.

Implications for India

The current global agricultural outlook scenario presents mixed blessings for India. 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, resulting in reduced supplies and likely higher domestic prices making exports of some traditional items less competitive. Due to sky rocketing domestic prices of pulses, particularly for tur, following poor monsoon rains in growing regions, there could be some increase in imports of pulses particularly of lentils and chickpeas from Australia, where production prospects are reported to be good. Further, the recent weakening Indian rupee exchange rate against U.S. dollar will prove disadvantageous for Indian consumers of food items such as vegetable oils and pulses.

Acknowledgements

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 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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Shashanka Bhide, Madras Institute of Development Studies, provided guidance and support in the conduct of the study.



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PART I

Overview of the Domestic Agriculture Outlook

I.1 Economic Growth in FY 2015-16 Converges to around 7.5 per cent

India's economic growth measured in Gross Value Added (GVA) at 2011-12 prices in Quarter 2 (Q2) of FY 2015-16 (April-March) is officially estimated at 7.4 per cent, compared to 7.1 per cent in Q1, but significantly below the 2014-15 Q2 GVA growth rate of 8.4 per cent. Year-on-year GVA growth during the first half (H1) of FY 2015-16 is placed at 7.2 per cent compared to 7.9 per cent in the corresponding half of 2014-15 (Table I.1).

The Union Budget for FY 2015-16 had forecast a growth rate of 8.1 to 8.5 per cent for the full fiscal year 2015-16 but the Finance Ministry now sees the Indian economy growing in the vicinity of 7.5 per cent. The Reserve Bank of India (RBI) in its Fifth Bi-monthly Monetary Policy Statement, 2015-16¹ released on December 1 has kept growth projection for 2015-16 unchanged at 7.4 per cent with a mild downside bias. However, in its Mid-Year Review, the Finance Ministry has pegged growth rate at 7.0 to 7.5 per cent². NCAER's GDP growth projection at 7.4 per cent is at par with the government's current GDP growth estimate and within the range of 7.3-7.6 per cent estimated by the International Monetary Fund, World Bank, Moody's Analytics, and Asian Development Bank³. The World Bank, in its latest India Development Update⁴ expects India's economic growth to be at 7.5 per cent in 2015-16, followed by a further acceleration to 7.8 per cent in 2016-17 and 7.9 per cent in 2017-18. The Report says India, now the world's fastest growing economy, is relatively well-positioned to weather the global volatility and even set for a modest acceleration in growth in the years ahead. The Asian Development Bank in its latest Outlook 2015 Update report⁵ has revised India's 2015 GDP growth marginally downward to 7.4 per cent and for 2016 to 7.8 per cent from its earlier estimate of 7.8 per cent and 8.2 per cent respectively. A weak monsoon, flagging external demand, and stalled parliamentary action on structural reforms are main reasons attributed to the downward revision.

Y-O-Y growth in agriculture and allied activities GVA in Q2 of FY 2015-16 is estimated at 2.2 per cent compared to 1.9 per cent in Q1. The marginal pick up was due to an estimated modest increase in kharif output and timely policy interventions to stem the effects of the deficient south-west monsoon⁶. The Agriculture and allied sector GVA growth in the first half (H1) of this fiscal year at 2 per cent is below the 2.4 per cent during the corresponding half of 2014-15 although in nominal terms the decline in the growth rate is much greater,

¹<http://downloadpolicy3.rbi.org.in/1278YSF263A51ECC9AC4D21BF547C48FF433B1A.PDF>

²<http://finmin.nic.in/reports/MYR201516English.pdf>

³http://www.ncaer.org/event_details.php?EID=146

⁴<https://openknowledge.worldbank.org/bitstream/handle/10986/22894/India0developm0for0equitable0growth.pdf?sequence=1&isAllowed=y>

⁵<http://www.adb.org/sites/default/files/publication/174108/ado-2015-update.pdf>

⁶<http://pib.nic.in/newsite/erelease.aspx?relid=126888>

NCAER's GDP growth projection at 7.4 per cent is at par with the government's current GDP growth estimate and within the range of 7.3-7.6 per cent estimated by the International Monetary Fund, World Bank, Moody's Analytics, and Asian Development Bank.

The exceptionally dry start to the *rabi* season has affected sowing in all major *rabi* crops such as wheat, gram (chickpeas) and rapeseed/mustard.

(Table I.1). Regarding Q3, the post-monsoon rains were poor and the north-east monsoon commenced on a listless note. However, the subsequent cyclonic weather in the east coast regions in early November has improved precipitation but its impact on crop production is yet to be assessed. The exceptionally dry start to the *rabi* season has affected sowing in all major *rabi* crops such as wheat, gram (chickpeas) and rapeseed/mustard. Overall, the current outlook for agricultural growth in 2015-16 appears moderate at best at this juncture and is expected to be more or less unchanged from the 2014-15 growth rate of 0.2 per cent.

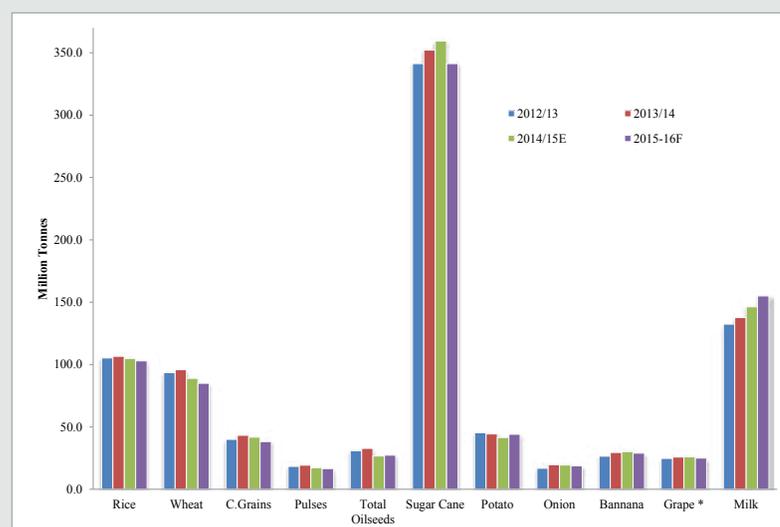
Table I.1. Quarterly & Half Yearly Estimate of GVA (Per cent Change Y-o-Y)

[At 2011-12 Prices]												
	2013-14				2014-15				2015-16		14-15	15-16
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	H1	H1
GVA Agriculture and Allied	2.7	3.6	3.8	4.4	2.6	2.1	-1.1	-1.4	1.9	2.2	2.4	2.0
GVA All Sectors (at Basic Prices)	7.2	7.5	6.6	5.3	7.4	8.4	6.8	6.1	7.1	7.4	7.9	7.2
[At Current Prices]												
	2013-14				2014-15				2015-16		14-15	15-16
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	H1	H1
GVA Agriculture and Allied	10.1	14.5	16.8	8.7	8.8	7.3	0.7	3.7	6.5	2.6	8.1	4.7
GVA All Sectors (at Basic Prices)	12.8	14.7	15	10.6	14	13.4	8.2	6	7.1	5.2	13.7	6.2

Source: http://mospi.nic.in/Mospi_New/upload/nad_PR_31aug15.pdf
http://mospi.nic.in/Mospi_New/upload/nad_press_release_29may15.pdf

Our revised forecast of various crops in 2015-16 agricultural year (July-June) with actual figures in preceding years are shown in Figure I.1.

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; milk 2015-16 forecast for 2015-16.

Table I.2: 2015-16 Crop Forecasts on Agricultural Year Basis (Million Tonnes)

Crop	2014-15 NCAER Forecast Dec 2014	2014-15 GOVT 4 th Advance Estimate	2015-16 GOVT 1 st Advance Estimate	2015-16 NCAER Forecast Dec 2015
Rice (kharif)	88.12	90.86	90.61	89.0 *
Rice (rabi)	14.88	13.94	NA	12.3 **
Total Rice	103.00	104.80	NA	103.0 #
Wheat	94.50	88.94	NA	85 **
Maize (kharif)	15.35	16.39	15.51	16.5 *
Maize (rabi)	6.91	7.29	NA	6.0 **
Total Maize	22.26	23.67	NA	21.5 #
Bajra	8.34	9.05	8.64	8.4 *
Jowar (kharif)	2.31	2.01	1.87	2.1 *
Jowar (rabi)	3.13	3.04	NA	3.0 **
Total jowar	5.44	5.05	NA	4.9 #
Other coarse grains (kharif)	2.0	2.25	1.86	1.9 *
Other coarse grains (rabi)	1.6	1.75	NA	1.6 **
Total other coarse grain	3.6	4.00	NA	3.5 #
Pulses (kharif)	5.16	5.63	5.56	5.2 *
Pulses (rabi)	11.52	11.57	NA	11.0 **
Total Pulses	16.68	17.20	NA	16.6 #
Total foodgrains (kharif)	120.04	126.31	124.05	123.1 *
Total foodgrains (rabi)	131.80	126.39	NA	118.8 **
Total Foodgrains	251.84	252.68	NA	243.0
Groundnut (kharif)	3.77	5.08	5.11	4.5 *
Groundnut (rabi)	1.57	1.48	NA	1.6 **
Total Groundnut	5.34	6.56	NA	5.7 #
Soybean	13.50	10.53	11.83	13.3 *
Rapeseed/ mustard	7.51	6.31	NA	6.0 **
Sugarcane	336.70	359.3	341.42	353.4 *
Onion	16.81	19.77	19.40	20.6
Potato	45.34	44.31	41.56	44.1
Grapes	NA	32.0	NA	NA
Banana	26.51	29.73	28.14	32.0
Milk	132.43	146.3	160 @	NA

* Mid-range of NCAER Kharif forecast ** NCAER tentative forecast based on prevailing conditions.

1st AE of kharif crops by the government + NCAER tentative forecast of rabi. @ Government production target

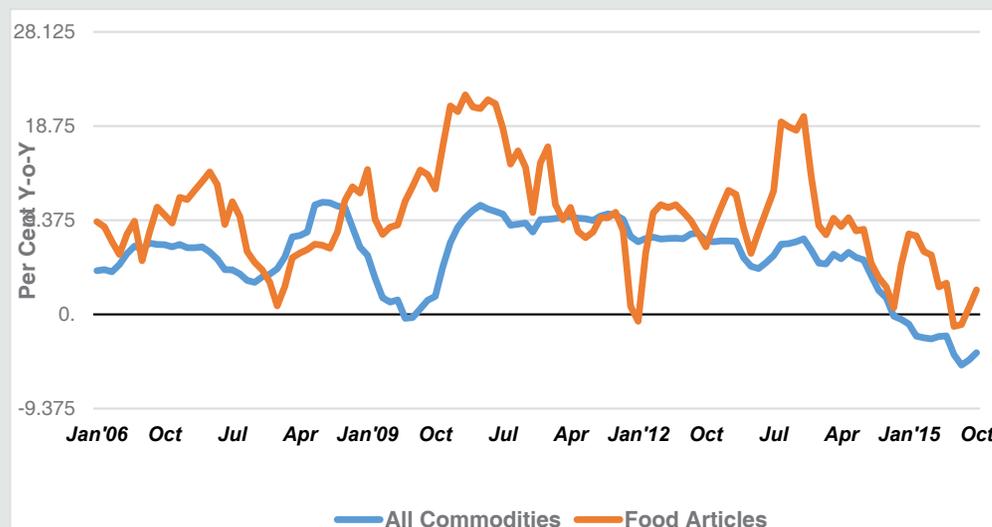
Note: The 2015 Kharif production was derived based on two approaches: one in which trend growth rate, the monsoon deviation from the LPA (14 per cent below LPA) and the incidence of El Nino in a year using a dummy variable and a cyclical trend variable in the case of sugarcane; in the case of rice and 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. NCAER Rabi forecast is a subjective forecast taking into consideration trend in progressive sowing and average of yields over the past five years.

Overall headline inflation measured by wholesale price index continued to remain in the negative territory for almost one year and was -3.8 per cent in October compared to 1.7 per cent a year ago.

I.2 Food Inflation up

Year-on-year inflation of food articles measured by the official Wholesale Price Index (WPI) after peaking at 8.0 per cent in January 2015, recorded a downtrend hitting the lowest level of -1.2 per cent in July 2015. Since then y-o-y food price inflation has strengthened and reached 2.44 per cent in October, spurred mostly by pulses (up 53 per cent) and onion (85.7 per cent). Nonetheless, the overall headline inflation measured by wholesale price index continued to remain in the negative territory for almost one year and was -3.8 per cent in October compared to 1.7 per cent a year ago (Figure I.2). In harmony with food inflation, the headline inflation has also started creeping up since August. Table I.3. shows food price inflation by major categories.

Figure I.2: Headline and Food Inflation (WPI-based) Strengthens since August



A statistical analysis of the monthly WPI data from 2006 to October 2015 shows a high degree of correlation (0.99) between WPI of food articles and WPI for all commodities, signifying the close association between food inflation and the headline inflation. The estimated elasticity of overall WPI to WPI on food articles (WPIF) is 0.62, which implies that for a one per cent increase in food prices, on the average the overall wholesale price increases by 0.62 per cent. The estimated equation is:

$$WPI = 0.768 WPIF^{0.62}$$

$$R^2 = .984$$

Table I.3: Food Inflation by Major Categories

	Food Articles	Cereals	Pulses	Fruits	Vegetables	Milk	Oilseeds	Sugar	Edible oils
Jan13	12.3	186	15.9	10.6	30.0	4.5	27.1	10.1	7.5
Feb	12.0	18.6	14.0	11.6	199	4.5	24.3	10.5	7.0
Mar	B.6	179	10.8	58	-1.7	4.4	19.7	9.4	3.6
Apr	6.1	155	10.5	4.8	-B.9	4.0	16.2	8.7	2.0
May	B.2	16.0	59	9.9	52	4.5	12.8	7.1	0.9
Jun	10.3	17.9	1.6	25.6	17.4	4.1	9.9	6.9	0.1

(Contd...)

Table I.3: (Contd...)

Jul	12.3	17.7	-7.4	30.1	46.8	30	2:7	2.2	-2.2
Aug	19.2	15.6	-14.7	55.2	61.0	60	-6.7	-4.8	-2.9
Sep	18.7	13.4	13.4	54.7	91.1	58	-5.1	-7.4	-2.7
Oct	18.3	11.4	-10.7	53.9	60.2	56	1.1	-8.2	-0.3
Nov	19.7	11.3	-9.9	51.0	97.7	69	16	-7.7	0.2
Dec	13.7	10.1	-7.3	30.3	56.5	7.0	-0.2	-5.6	-0.9
Jan' 14	8.8	9.3	-7.1	9.8	13.5	7.2	-26	-5.5	-1.7
Feb	7.9	9.2	-5.7	54	24	68	-06	-5.7	-1.5
Mar	9.6	8.8	-2.3	11.7	52	9.5	0.9	-4.4	-0.1
Apr	8.7	8.3	-1.8	9.2	1.6	9.2	0.2	-1.1	-0.7
May	9.6	7.8	-0.2	9.8	0.1	96	50	-0.9	-0.8
Jun	8.3	56	0.6	6.8	-5.4	10.8	-4.8	-0.7	-0.8
Jul	8.5	5.2	3.3	12.1	-1.2	10.5	63	2.0	1.0
Aug	5.1	4.4	7.9	4.4	-6.0	12.2	126	2.6	-0.2
Sep	3.7	3.3	6.7	-0.5	-15.1	11.6	8.1	2.1	-2.3
Oct	2.7	3.1	4.0	-3.5	-19.4	11.4	3.5	1.9	-2.8
Nov	0.7	22	4.4	-11.8	-28.4	10.2	-0.7	0.2	-3.3
Dec	50	1.3	59	4.8	-6.4	9.4	-0.9	-1.3	-3.4
Jan1 15	8.0	1.7	12.6	17.7	18.6	9.6	0.5	-1.6	-0.4
Feb	7.8	1.1	14.5	16.2	15.3	6.0	-0.2	-2.2	-0.8
Mar	6.3	0.0	13.2	11.1	9.3	7.5	-1.3	-4.9	-1.2
Apr	5.9	0.3	15.5	7.9	-1.3	7.4	-1.5	-8.8	-1.2
May	2.7	0.0	23.1	1.4	-5.0	6.9	-0.6	-11.2	0.8
Jun	31	-0.4	36.8	0.5	-6.8	5.2	3.1	-13.3	2.8
Jul	-1.2	-1.7	36.2	-15.0	-24.4	5.3	-0.2	-17.6	1.4
Aug	-1.0	-2.0	36.5	-11.8	-20.0	2.1	-2.2	-18.4	1.2
Sep	0.7	-1.0	36.6	-7.4	-9.5	2.2	2.2	-16.3	3.2
Oct	2.4	-0.3	53.0	-1.2	26	1.7	6.5	-14.5	4.5

Source: Office of Economic Advisor.

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 for indicative Delhi wholesale prices of selected food commodities, the ARIMA projections take into consideration All India WPI for selected commodities. The projected y-o-y percentage change in Delhi wholesale prices of major commodities are shown in Table I.4. The projected year-on-year and month-on-month percentage changes in all India wholesale price indices are summarized in Table I.5.

Based on the estimated 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 rise is expected to remain 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 soybeans. 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: 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.5: Projected Wholesale Price Indices based on Time Series ARIMA Model

Commodity	Projected % Change Year-on-Year					
	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16
Rice	-2.9	-1.4	-0.8	-0.2	2.3	2.9
Wheat	6.2	6.5	7.7	9.2	8.5	5.4
Jowar	-3.6	-0.6	3.6	3.8	6.9	9.0
Bajra	8.4	17.5	19.0	20.8	21.1	22.9
Maize	4.4	5.7	6.6	7.4	6.2	6.8
Pulses	57.7	55.0	45.6	42.8	41.4	39.1

(Contd...)

Table I.5: (Contd...)

Commodity	Nov-15	Dec-15	Jan-16	Feb-16	Mar-16	Apr-16
Gram	62.1	60.0	52.0	46.2	41.2	32.8
Tur	76.1	77.7	70.2	62.0	56.7	55.2
Potatoes	-60.3	-48.4	-40.0	-37.6	-26.4	-4.5
Onions	87.3	66.6	53.8	11.0	5.7	7.2
Groundnut	9.3	11.7	13.7	10.3	7.9	5.7
Rapeseed/Mustard	21.9	19.9	17.5	14.2	10.9	10.2
Soybean	15.5	8.3	9.5	12.9	17.3	20.1
Edible oils	4.2	5.6	3.8	3.3	3.7	5.2
Food Articles	3.1	3.5	3.1	3.8	4.6	5.6
Food Products	0.4	1.1	1.4	2.0	2.7	3.9
Food Sector	2.1	2.7	2.2	3.2	4.0	4.9
Projected % Change Month-on-Month						
Rice	-0.1	-0.6	0.1	0.6	0.2	0.7
Wheat	2.6	1.6	2.0	0.9	-0.6	-2.6
Jowar	0.6	3.1	2.0	1.6	0.2	2.7
Bajra	2.9	5.9	3.4	0.5	2.1	2.6
Maize	-1.0	2.2	3.7	1.5	2.1	0.0
Pulses	4.1	-0.7	-1.2	-1.4	-0.6	0.8
Gram	2.6	0.0	-0.1	-3.1	-1.6	-1.7
Tur	2.8	-0.3	-0.2	-1.3	-0.1	1.4
Potatoes	-2.6	-18.0	-20.9	-7.6	9.9	16.2
Onions	4.1	-12.1	-11.8	-24.6	-8.3	-5.5
Groundnut	-3.3	-1.0	2.5	0.7	1.4	2.4
Rapeseed/Mustard	2.1	0.2	-0.1	-3.0	-2.6	0.0
Soybean	-1.5	-1.8	4.5	1.2	2.8	4.2
Edible Oils	-0.1	0.9	0.5	-1.2	-0.1	1.1
Food Articles	0.2	-1.7	-0.3	0.0	0.2	2.4
Food Products	-0.2	-0.1	0.3	-0.2	0.4	1.0
Food Sector	-0.1	-1.1	-0.4	0.2	0.3	1.9

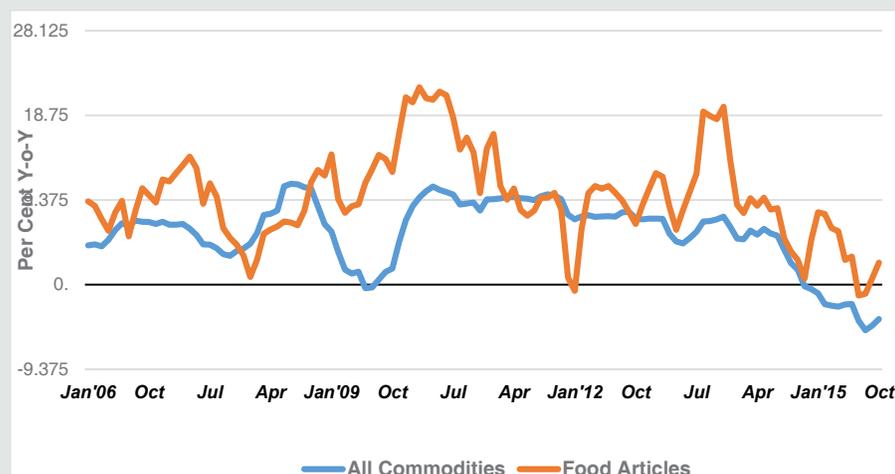
Notes: (1) Projections do not take into account the likely effects of decline in output due to weak monsoon but reflect the average patterns in the trends and seasonal factors in each commodity prices. (2) The price changes in the case of WPI for 'food sector' is calculated as weighted average of food articles and food products with sector 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 Consumer Price Inflation Higher

Tracking the wholesale price index and consumer price index (for industrial workers) for all commodities (Figure I.3), it was noticed that the y-o-y inflation based on the CPI is higher than that based on WPI. Although the WPI based inflation for all commodities has been in the negative territory since November last year, the CPI based inflation continues to remain positive.

Although the WPI based inflation for all commodities has been in the negative territory since November last year, the CPI based inflation continues to remain positive.

Figure I.3: Wholesale vs. Consumer Price Index Based Inflation



The year-end stocks to use ratio is projected to decline for most commodities, especially so in the case of rice.

I.4 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.6. The year-end stocks to use ratio is projected to decline for most commodities, especially so in the case of rice.

Table I .6: Summary Food Balance Sheet for All Commodities

Particulars	Rice	Wheat	Maize	Pulses	Edible oils 1/	Sugar *	Onion	Potato
	2015-16	2016-17	2015-16	2016-17	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)	15.0 (17.2)	1.0 (1.0)	Neg (Neg)	1.4 (1.2)	9.6 (7.5)	Neg (Neg)	Neg (Neg)
Production	103.5 (104.8)	85.0 (88.9)	21.5 (23.7)	16.6 (17.2)	7.6 (8.4)	27.0 (28.3)	20.6 (18.7)	44.1 (45.9)
Imports	0 (0.01)	0.05 (1.0)	0.05 (0.02)	5.5 (4.6)	15.0 (14.4)	0 (0)	.04 (0.01)	0 (0)
Total supply	117.7 (123.4)	100.1 (107.1)	22.6 (24.7)	22.1 (21.8)	24.0 (24.0)	36.6 (35.8)	20.64 (18.71)	44.1 (46.0)
Exports	9.0 (11.7)	0.3 (0.54)	0.8 (1.0)	0.1 (0.1)	0.1 (0.1)	3.0 (1.1)	1.27 (1.24)	0.43 (.37)
Domestic Food use	98.5 (95.5)	82.8 (86.3)	2.6 (2.5)	21.8 (21.7)	21.4 (21.4)	27.0 (25.1)	19.37 (17.47)	44.1 (45.6)
Total Utilization	100.5 (97.5)	89.8 (91.3)	21.3 (22.7)	22.1 (21.8)	22.4 (22.4)	27.0 (25.1)	19.37 (17.5)	43.7 (45.6)
Closing stocks	8.2 (14.2)	10.0 (15.3)	0.5 (1.0)	Neg (Neg)	1.5 (1.5)	6.6 (9.6)	Neg (Neg)	Neg (Neg)
Total Distribution	117.7 (123.4)	100.1 (107.1)	22.6 (24.7)	22.1 (21.8)	22.4 (22.4)	36.6 (35.8)	20.64 (18.71)	44.1 (46.0)
Stocks to Use %	8.2 (13.0)	11.1 (16.4)	Neg (Neg)	Neg (Neg)	6.7 (6.7)	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. Total domestic utilisation includes estimated usage in seeds, feed and wastage.

1/ Based on industry sources (will differ from USDA estimate)

I.5 Government Initiatives in Agriculture Sector

During the past one year, the government has injected different new perspectives to many conventional models in which India operated, including in Agriculture Sector⁷. These were listed and elaborated in the Kharif Outlook Report. The most important ones expected to have significant impact in achieving sustainable growth in the agriculture sector are:

- Soil Health Card
- *Paramparagat Krishi Vikas Yojana* (Organic farming)
- *Pradhan Mantri Krishi Sinchai Yojana* (PMKSY)
- National Agricultural Market

The government is also looking into the feasibility of using solar energy driven pumping system in farm irrigation and interlinking of rivers to make the country's agriculture 'drought proof'. Conversion of input and food grain subsidies into direct cash transfer is also under consideration, which should help plug subsidy leakages and ensure greater availability of funds for strategic public investment in areas such as irrigation, building of grain storage systems and cold chains.

I.6 Policy Developments during October through December 2015

A summary of policy initiatives related to agriculture and allied sectors taken since our last Rabi Outlook Report is provided in Table I.7.

Table I.7: Agricultural Policy Developments during the period October – December 2015

Sl. No.	Commodity /Issues	Date	Policy Instrument	Brief Details
1	MSP for Rabi Crops of 2015-16 season	5.11.2015	Cabinet release	The Government has raised the minimum support price of Rabi season crops to be marketed during 2016-17. http://pib.nic.in/newsite/PrintRelease.aspx?relid=130275 http://www.agricoop.nic.in/imagedefault/MSP23112015.pdf
Remarks: The higher MSPs would increase investment and production through assured remunerative prices to farmers.				
2	Wheat	19.10.2015	CCEA release	Government increases the import duty on wheat to 25 per cent. http://www.cbec.gov.in/htdocs-cbec/customs/cs-act/notifications/notfns-2015/cs-tarr2015/cs51-2015
Remarks: Aimed to curb wheat imports at a time when domestic stocks are ample.				
3.	Pulses	18.10.2015	Ministry of CAF & PD release	Government has amended the Central Order under Essential Commodities Act, 1955 with immediate effect to enable imposition of stock limits on pulses sourced from imports, stocks held by exporters, stocks to be used as raw-materials by licensed food processors and stocks of Large Departmental Retailers. http://pib.nic.in/newsite/PrintRelease.aspx?relid=129824
Remarks: With a view to increase availability and to prevent hoarding of pulses.				

(Contd...)

⁷http://agricoop.nic.in/imagedefault/Ebook_November_2015/index.html#/30

The government is also looking into the feasibility of using solar energy driven pumping system in farm irrigation and interlinking of rivers to make the country's agriculture 'drought proof'

Table I.6: (Contd...)

4.	Pulses	9.12.2015	CCEA release	The government has decided to create a buffer stock of pulses by procuring 1.5 lakh tonnes of lentils. http://pib.nic.in/newsite/PrintRelease.aspx?relid=132897 http://economictimes.indiatimes.com/articleshow/50112705.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst
Remarks: To encourage farmers to take up pulses production on a larger scale and to enable India to help achieve self-sufficiency in pulses in a few years.				
5.	Onion	10.12.2015	DGFT	Government slashes minimum export price of onions to \$400/tonne from \$700/tonne http://dgft.gov.in/Exim/2000/NOT/NOT15/noti26.pdf
Remarks: To protect the interest of Onion growers				
6.	Onion	24.12.2015	DGFT	MEP on onion abolished http://dgft.gov.in/Exim/2000/NOT/NOT15/noti29.pdf
Remarks: To protect the interest of Onion growers				
7.	Sugarcane/ Sugar	13.10.2015	News Reports	Government today fixed an export quota of 10,000 tonnes of white sugar to the EU and 8,424 tonnes of raw sugar to the US under the existing CXL and TRQ provisions, for this year. http://economictimes.indiatimes.com/news/economy/agriculture/government-fixes-sugar-export-quota-to-eu-us-for-this-year/articleshow/49341775.cms
Remarks: To clear surplus stocks and help cash-starved mills clear cane arrears to farmers.				
8.	Sugarcane/ Sugar	18.11.2015	Ministry of CAF & PD release	The Government has decided to provide a production subsidy @ of Rs. 4,50 per quintal of cane crushed to offset cane cost. The said subsidy shall be paid directly to the farmers on behalf of the mills and be adjusted against the cane price payable to the farmers towards FRP including arrears relating to previous years. http://pib.nic.in/newsite/PrintRelease.aspx?relid=131588
Remarks: The move will help mills hit by a free-fall in local sugar prices.				
9.	Ghee, butter and butter oil	5.10.2015	News Reports	The Government has increased import duty on ghee, butter and butter oil by 10 per cent from the present rate of 30 per cent to 40 per cent to continue till March 2016. http://www.thehindubusinessline.com/economy/centre-hikes-customs-duty-on-ghee-butter-oil/article7726170.ece
Remarks: To safeguard the interest of domestic dairy farmers and industry.				
10.	Other (packaging of food grains and Sugar	9.12.2015	CCEA release	The Government has decided that at least 90 per cent of foodgrain output and 20 per cent of sugar production be packaged in jute bags during the Jute Year 2015-16 (July 1, 2015 to June 30, 2016). http://economictimes.indiatimes.com/articleshow/50112443.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst http://pib.nic.in/newsite/pmreleases.aspx?mincode=63
Remarks: Aimed at providing relief to workers employed in jute mills and to support the livelihood of farm families.				

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 Update⁸ 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 per cent. 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. 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 Nations in its World Economic Situation and Prospects 2015 Update Report⁹ in May 2015, projected World Gross Product (WGP) to expand at a slightly faster rate than in 2014 at 2.8 per cent in 2015 and 3.1 per cent in 2016, marginally lower than the IMF projections. The World Bank in its Global Economic Prospects Report of June 2015¹⁰ estimated global economic growth at 2.8 per cent in 2015-16, but is expected to pick up to 3.2 per cent 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 release¹¹ 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 for 2015, agricultural trade is also expected to have declined at least in value terms due to low agricultural commodity prices. Table II.1 shows growth in global agricultural trade and production during the past few years compiled by the WTO recently¹²

⁸<http://www.imf.org/external/pubs/ft/weo/2015/02/pdf/text.pdf>

⁹http://www.un.org/en/development/desa/policy/wesp/wesp_archive/2015wesp_full_en.pdf

¹⁰<https://www.worldbank.org/content/dam/Worldbank/GEP/GEP2015b/Global-Economic-Prospects-June-2015-Global-economy-in-transition.pdf>

¹¹https://www.wto.org/english/news_e/pres15_e/pr752_e.htm

¹²https://www.wto.org/english/res_e/statis_e/its2015_e/its15_world_trade_dev_e.pdf

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.

Falling import demand and lower commodity prices are likely to push down trade growth prospects in 2015 and 2016.

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.

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.

MY 2015-16 production forecasts range from 727 million tonnes by ABARES to 734.9 million tonnes by USDA.

A large increase in production in 2015-16 is estimated for the Black Sea region (the Russian Federation, Ukraine and Kazakhstan) and a substantial decline is estimated for Canada and forecast for Argentina.

Table II.1.1: Y-o-Y Growth (%) in the Volume of World Merchandise Exports and Production, 2010-2014

Particulars	2010-14	2012	2013	2014
World merchandise exports	3.5	2.5	3	2.5
Agricultural products	3.5	1.5	3	2.5
Fuels and mining products	1.5	3	0.5	1
Manufactures	4	2	2.5	4
World merchandise production	2.5	2.5	2	2
Agriculture	2.5	1.5	5.5	1.5
Mining	1.5	2.5	0.5	2.5
Manufacturing	2.5	2.5	1.5	2.5
World GDP	2	2	2	2

Source: WTO

II.2 Global Agricultural Commodity Outlook

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

Production estimates for 2014-15 for most crops by all the agencies have more or less converged. The El Niño episode currently under way could be one of the strongest on record and is expected to reach maximum strength during December-February, potentially lasting throughout early summer of 2016. The current El Niño episode is unlikely to cause a spike in global agricultural prices given ample supply of major agricultural commodities, weak links between global and domestic prices, and limited impact of past episodes. However, it could be a source of significant local disruptions in the most affected regions. 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 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.

Wheat: MY 2015-16 production forecasts range from 727 million tonnes by ABARES to 734.9 million tonnes by USDA. In December the USDA has revised its 2015-16 world wheat production forecast further upward at a record 734.9 million tonnes, 9.6 million tonnes more than in 2014-15, based on larger than anticipated crops in Canada and the EU. Canada's production was increased by 1.6 million tonnes to 27.6 million tonnes.

ABARES forecasts world wheat production is to increase by around 1 per cent in 2015-16 to 727 million tonnes. Among the major exporters, a large increase in production in 2015-16 is estimated for the Black Sea region (the Russian Federation, Ukraine and Kazakhstan) and a substantial decline is estimated for Canada and forecast for Argentina. Outside the major exporting countries, increased production in China, the Middle East and North Africa is expected to more than offset a decline in production in India.

IGC forecasts global wheat production in 2015-16 at a new record of 726.2 million tonnes, 3.1 million tonnes more than in the previous year. Global wheat production in 2015 is now forecast to reach a record of 735 million tonnes, almost 2 million tonnes more than in 2014, mostly on account of higher outputs in Australia, China, Morocco, Turkey, Ukraine and the United States.

FAO forecasts MY 2015-16 wheat production to reach a record 734.5 million tonnes, marginally lower from its previous forecast but 1.2 million tonnes more than in the previous year, mostly on account of higher production in Australia, China, Morocco, Turkey, Ukraine and the United States. This month's lowering mainly reflects adverse weather in Pakistan, Brazil and Argentina.

Table II.2.1: Wheat Production Estimate by Various Agencies

Year	Production (MMT)			
	USDA	FAO	IGC	ABARES
2012-13	658.7	659.7	655.5	655.5
2013-14	715.3	715.6	713.8	713.8
2014-15	725.3	733.3	723.1	723.1
2015-16	734.9	734.5	726.2	726.9

Rice: All the agencies are forecasting a decline in global rice production ranging from 3 to 9 million tonnes production in MY 2015-16 from the previous year's level (Table II.2). The forecasts range from 469.3 million tonnes by USDA to 491.4 million tonnes by FAO. This is the first decline in global rice production since 2009-10.

USDA forecast is down from its November forecast with reductions primarily in India, Other countries registering decline in in expected production are Myanmar, Philippines, and the United States. IGC forecast of 2015-16 rice production broadly unchanged from the October forecast of 473.6 million tonnes, a 5 million decline from its 2014-15 record production estimate. Lower production in India and Thailand, is only partly offset by improved harvests elsewhere in Asia.

FAO's latest forecast for global rice production at 491.4 million tonnes has remained virtually unchanged since last month, still suggesting a year-on-year contraction of almost 3 million tonnes. FAO rice production forecast is typically 16 to 18 million tonnes higher than forecasts by other agencies, presumably due to larger country coverage. ABARES forecasts 2015-16 rice production at 475 million tonne, close to IGC forecast, a decline of 5 million tonnes from the record 2014-15 production.

Table II.2.2: Rice Production Estimate by Various Agencies

Year	Production (MMT)			
	USDA	FAO	IGC	ABARES
2012-13	472.8	488.2	472.7	472.8
2013-14	478.4	494.5	477.7	477.7
2014-15	478.2	494.2	478.3	480.0
2015-16	469.3	491.4	473.6	475.0

Coarse grains: All the agencies are forecasting a lower **total coarse grain** production for 2015-16, ranging from 1,269.5 million tonnes by the ABARES to 1,301.1 million tonnes by the FAO, a decline of around 2.0 per cent to 2.8 per cent from the 2014-15 record production. Most of the decline is in corn (maize) production, mainly in the United States, 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.

Agencies are forecasting a decline in global rice production ranging from 3 to 9 million tonnes production in MY 2015-16

Lower production in India and Thailand, is only partly offset by improved harvests elsewhere in Asia.

All the agencies are forecasting a lower total coarse grain production for 2015-16, ranging from 1,269.5 million tonnes by the ABARES to 1,301.1 million tonnes by the FAO.

According to USDA's December forecast, world total coarse grain production is down 1.0 million tonnes from the previous month to 1,268.6 million tonnes due to reduced corn prospects.

Bumper outturns of barley and sorghum were outweighed by a fall for maize, although output of that crop is still expected to be the third largest ever.

World production of corn (maize), the most important coarse grain crop, in 2015-16 is forecast to fall by 30 to 35 million tonnes from the previous year by various agencies

According to USDA's December forecast, world total coarse grain production is down 1.0 million tonnes from the previous month to 1,268.6 million tonnes due to reduced corn prospects (Table II.2.3). Reductions for sorghum, oats, rye, and mixed grains production are offset by increases forecast for millet and barley. The 2015-16 production would still be the third-highest on record, ABARES forecasts world production to fall by 2 per cent in 2015-16 to 1,270 million tonnes, mainly as a result of reductions in corn production in the key producing regions of the Black Sea, the European Union and North America as a result of unfavourable weather conditions. At 1,301 million tonnes, the current FAO forecast for world coarse grains production in 2015 is about 1 million tonnes less than the previous forecast and 32.3 million tonnes (2.4 per cent) below 2014. IGC forecast of 2014-16 total coarse grain production is 1,269.9 million tonnes, almost the same as forecast by USDA, and ABARES. Bumper outturns of barley and sorghum were outweighed by a fall for maize, although output of that crop is still expected to be the third largest ever.

Table II.2.3: Coarse Grain Production Estimate by Various Agencies

Years	Production MMT			
	USDA	FAO	IGC	ABARES
2012-13	1,137.4	1,150.3	1,141.2	1,138.0
2013-14	1,281.0	1,312.7	1,292.2	1,281.8
2014-15	1,297.0	1,333.4	1,306.5	1,296.4
2015-16	1,268.6	1,301.1	1,269.9	1,269.5

World production of corn (maize), the most important coarse grain crop, in 2015-16 is forecast to fall by 30 to 35 million tonnes from the previous year by various agencies in the range of 967 million tonnes by the IGC to 1,007 million tonnes by the FAO (Table II.2.4). Latest USDA forecast shows significant declines in the USA, the EU, Ukraine, and Brazil, partly offset by higher production in China, Canada, and Russia. In the United States, the largest corn producing country in the world, production is forecast to fall by 15 million tonnes to 346.8 million tonnes, reflecting lower planted area. ABARES forecast world corn production to fall by 3 per cent in 2015-16 to 975 million tonnes. World harvested area has remained largely unchanged from 2014-15. However, yields in major corn producing countries, including Argentina, Brazil and the European Union, have been significantly lower than those of 2014-15.

Table II.2.4: Maize Grain Production Estimate by Various Agencies

Year	Production MMT			
	USDA	FAO	IGC	ABARES
2012-13	870.3	875.8	868.9	868.0
2013-14	991.4	1,010.9	996.7	991.0
2014-15	1,008.8	1,029.0	1,013.0	1,007.0
2015-16	973.9	1,006.9	967.3	975.0

Among other major coarse grains at the global level, ABARES forecasts world barley production to increase by 3 per cent in 2015-16 to 145 million tonnes. Production in major exporting regions have been mixed, with growth in Australia, Argentina and Canada partially offset by falls in the Black Sea region. In the European Union, concerns over potential yield early in the harvest period were alleviated by favourable weather conditions as harvest progressed, with production estimated at 60.1 million tonnes, almost unchanged from the 2014-15 level. While production of barley in Canada is estimated to have

increased by 7 per cent in 2015–16., production in Ukraine and the Russian Federation is estimated to have fallen by 8 per cent and 17 per cent respectively USDA forecast of world barley production in 2015–16 is 145.2 million tonnes, with most of the increase in Canada, Australia and Kazakhstan, offsetting the significant decline in Russia, and Ukraine.

World **sorghum** production in 2015–16 is forecast at 68 million tonnes by USDA about 4.0 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.

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. Production outlook for other countries are not available.

Agriculture and Agri-Food Canada (AAFC) in its latest October report¹³ forecasts 2015–16 **dry pea** production in Canada, the largest supplier to India, to fall by 17 per cent to 3.2 million tonnes, the smallest dry pea crop since 2011–2012. This is largely due to a combination of a sharp fall in yields and harvested area. In the US, area seeded to dry peas for 2015–16 is forecast by USDA to rise 5 per cent from 2014–15, to a record 1.0 million acres, largely due to an expected rise in area in Montana and North Dakota. Assuming normal yields, US dry pea production is forecast to rise marginally to a record 0.8 million tonnes.

Lentil (masur) production in Canada is officially estimated to rise by 9 per cent to nearly 2.2 million tonnes, the second largest Canadian lentil crop on record. An extremely low yield estimates have partly offset the record sown area, which is estimated to have risen by 24 per cent from 2014–15.

In the US, the area seeded to lentils for 2015–16 is forecast by the USDA at nearly 0.5 million acres, up sharply from 2014–15. Assuming normal yields, 2015–16 US lentil production is forecast at around 300,000 tonnes, up 77 per cent from 2014–15.

Chickpea (chana) production in Canada in 2015–16 is forecast to fall by 20 per cent to 105,000 tonnes due to a sharp decline in area. Production for desi types is expected to be unchanged, while *Kabuli* chickpea production is expected to fall sharply compared to 2014–2015. US chickpea area for 2015–16 is forecast by the USDA to be relatively unchanged from the previous year at 220,000 acres. Assuming normal yields, 2015–16 US chickpea production is forecast at 130,000 tonnes, almost unchanged from the 2014–15 production. **Table II.2.5** shows the area, production and yield trend of Canadian pulses.

Table II.2.5: Trend in Canadian Pulse Production, Area, and Yield

Pulses	Area (THA)			Production (TMT)			Yield (KG/HA)		
	2013	2014	2015	2013	2014	2015	2013	2014	2015
	2014	2015[f]	2016[f]	2014	2015[f]	2016[f]	2014	2015[f]	2016[f]
Dry peas	1,329	1,588	1,482	3,961	3,810	3,156	2,980	2,399	2,130
Lentil	1,090	1,217	1,554	2,262	1,987	2,162	2,075	1,633	1,391
Dry beans	100	122	115	232	227	216	2,320	1,861	1,878
Chickpeas	76	70	54	177	131	105	2,329	1,871	1,944

Source: Canada: Outlook for Principal Field Crops, October 22, 2015; f- Forecast

¹³<http://www.agr.gc.ca/eng/industry-markets-and-trade/statistics-and-market-information/by-product-sector/crops/crops-market-information-canadian-industry/canada-outlook-for-principal-field-crops/canada-outlook-for-principal-field-crops-october-22-2015/?id=1448972522062>

Pulse production outlook for 2015–16 in major exporting countries presents a mixed picture.

Agriculture and Agri-Food Canada (AAFC) in its latest October report forecasts 2015–16 dry pea production in Canada, the largest supplier to India, to fall by 17 per cent to 3.2 million tonnes.

Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) in its recent crop report December 2015 forecasts an increase in most pulse production except field peas.

Currently Myanmar is the second largest exporter of beans and pulses in the world behind Canada.

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.

Untimely rainfalls, cyclones, floods and droughts have affected pulse prices in the past, greatly reducing the quantity and quality of pulse crops and resulting in frequent price volatility.

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.

Australian Bureau of Agricultural and Resource Economics and Sciences (ABARES) in its recent crop report December 2015¹⁴ forecasts an increase in most pulse production except field peas. The increase was mainly due to area increase. Table II.2.6 illustrates the area and production and yield trend of Australian pulses.

Table II.2.6: Trend in Australian Pulse Production, Area, and Yield

Pulses	Area (THA)			Production (TMT)			Yield (KG/HA)		
	2013 -14	2014 -15 s	2015 -16 s	2013 -14	2014 -15 s	2015 -16 f	2013 -14	2014 -15 s	2015 -16 f
Chickpeas	508	425	662	629	555	979	1,238	1,306	1,479
Fababeans	152	164	269	328	284	382	2,158	1,732	1,420
Field peas	245	237	235	342	290	225	1,396	1,224	957
Lentils	170	189	222	254	242	272	1,494	1,280	1,225
Lupins	387	443	487	626	549	661	1,618	1,239	1,357

f ABARES forecast. s ABARES estimate.

Sources: ABARES; Australian Bureau of Statistics; Pulse Australia.

Beans and pulses, have become major export crops in Myanmar grown on around 4.2 million hectares. The main bean and pulses varieties produced in Myanmar are black matpe (urd), green mung bean, and pigeon peas (tur), with matpe production over two times that of the next two highest, green mung and pigeon peas. Currently Myanmar is the second largest exporter of beans and pulses in the world behind Canada. Over 70% of bean exports go to India, which has huge market demand that cannot be met by domestic production. 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. Geographical proximity and availability of tropical pulses which Indians mostly prefer such as pigeon pea, black matpe and mung are aiding Myanmar pulse exports to India. Because India enjoys such a large market influence, Myanmar's beans and pulses commodity prices are closely linked to India's. As in India, pulses production in Myanmar is heavily reliant on appropriate weather conditions for growth. Untimely rainfalls, cyclones, floods and droughts have affected pulse prices in the past, greatly reducing the quantity and quality of pulse crops and resulting in frequent price volatility.

Myanmar's beans and pulses are usually grown during the winter period beginning in November making use of the residual moisture left in the soils after rice harvest. Winter crops from November are usually harvested in January. Those crops planted at a later period during winter are usually harvested around February or March. On 30 July 2015, Cyclone Komen made landfall in Bangladesh bringing strong winds and additional heavy rains to Myanmar, resulting in floods and landslides. This 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. As local consumption of beans and pulses is comparatively low in Myanmar, exports are unlikely 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. A useful detailed report on Myanmar's pulse industry is available at: http://www.thuraswiss.com/sites/default/files/Beans_and_Pulses.pdf.

¹⁴Source: ABARES; Australian Bureau of Statistics; Pulse Australia http://data.daff.gov.au/data/warehouse/aucrpd9abcc003/aucrpd9abcc20151201/AustCropRrt20151201_CropData_v1.0.0.xls

Oilseeds Total: USDA forecasts 2015-16 world total oilseeds production to decline by 7.0 million tonnes from the previous year to 529.0 million tonnes with most of the decline in rapeseed/mustard (down 4.6 million tonnes at 67.5 million tonnes) and cottonseed (down 5.5 million tonnes to 38.9 million tonnes). Most of the decline in total oilseed production is confined to Argentina (soybeans), China (mostly soybeans), and India, whereas an increase is forecast in Brazil and the United States. ABARES forecast a decline in total oilseed production in 2015-16 at 528.8 million tonnes from the record high estimated at 536.1 million tonnes in 2014-15. FAO in its latest report (October) also forecasts a decline in world 2015-16 total oilseed production of the order of 13 million tonnes at 523 million tonnes from the previous year's record production, on account of lower rapeseed, soybean and cottonseed outputs (Table II.2.7).

Table II.2.7: Oilseed Production Estimate by Various Agencies

Oil Seeds	Total Oilseeds (MMT)			Soybean			Rapeseed/ Mustard		Groundnut	
	USDA	FAO	ABARES	USDA	FAO	IGC	USDA	FAO	USDA	FAO
2012-13	475.2	482.0	475.2	268.8	267.2	272.0	63.6	64.3	40.45	37.9
2013-14	505.4	501.6	505.4	283.1	283.4	284.8	72.0	71.9	41.12	38.9
2014-15	536.6	535.9	536.1	319.0	319.7	321.1	72.1	71.4	39.41	37.9
2015-16	529.0	523.0	528.8	320.1	318.2	321.0	67.5	64.3	40.79	38.4

Among major oilseeds at global level, world **soybean** production in 2015-16 is forecast at 320.1 million tonnes by USDA, a modest increase of 1.1 million tonnes from the 2014-15 production. Forecast by other agencies are more or less same. According to ABARES, record estimated soybean yields in the United States and a forecast large increase in soybean plantings in Latin America are expected to result in production reaching 317 million tonnes, around 1 per cent lower than the record estimated for 2014-15. FAO forecast is marginally down from its 2014-15 estimates of 319.7 million tonnes at 318.2 million tonnes as yields drop from last season's unprecedented high level in major producing countries.

ABARES forecasts world **rapeseed (including canola)** production at 67 million tonnes, 6 per cent below the 2014-15 level. Production declines are expected for most major producing countries. USDA forecast is also very close at 67.5 million tonnes, a significant decline from the 2014-15 estimate of 72.1 million tonnes. Canada's higher production is partly offset by lower output for India and Australia. According to FAO October Food Outlook Report, adverse weather conditions compromised production prospects in the world's two leading producers, the EU and Canada, with production forecast at 64 million tonnes – a significant drop compared to the last two seasons' bumper harvests of 71.4 million tonnes in 2014-15 and 71.9 million tonnes in 2013-14.

Among minor oilseeds, world **sunflower** seed production is forecast by ABARES to rise marginally to around 40 million tonnes because of forecast increased production in the Russian Federation and Ukraine. This is expected to offset lower crop production in Argentina, the European Union and Turkey. USDA December forecast is close at 39.7 million tonnes, a marginal decline from the 2014-15 estimate.

USDA forecasts world **Cottonseed** production to decline by almost 5.5 million tonnes to 38.9 million tonnes, with lower world cotton prices causing a contraction in world cotton plantings.

USDA forecast of world **groundnut** production (in shell) is 40.8 million tonnes, a marginal increase over the previous year. 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.

Most of the decline in total oilseed production is confined to Argentina (soybeans), China (mostly soybeans), and India, whereas an increase is forecast in Brazil and the United States.

According to FAO October Food Outlook Report, adverse weather conditions compromised production prospects in the world's two leading producers, the EU and Canada,

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 total world vegetable oil production to a new record level of 178.3 million tonnes in 2015-16.

FAO is less optimistic and forecasts a slight fall in oils/fats production in 2015-16.

ABARES forecasts world sugar production to decline by 2 per cent in 2015-16 to 178 million tonnes, largely reflecting forecast lower production in Europe, China and India.

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 **total world vegetable oil** production to a new record level of 178.3 million tonnes in 2015-16, an increase of 2.1 million tonnes from the 2014-15 production—despite the projected decline in oilseed production. Most of the increase is in **soybean oil** (up 2.1 million tonnes to 51.1 million tonnes) and **palm oil** (up 1.2 million tonnes at 62.6 million tonnes), more than offsetting the decline in **mustard/rapeseed oil** (down 1.2 million tonnes to 25.9 million tonnes) and **cottonseed oil** (down 0.5 million tonnes to 4.63 million tonnes). **Sunflower seed oil** production is forecast to remain almost unchanged at 15.2 million tonnes. ABARES forecast of world vegetable oil production is also the same as by USDA, an increase of 3.4 million tonnes over 2014-15 at 178.2 million tonnes. 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 per cent during the past three years. (Table II.2.8)

Table II.2.8: Vegetable Oil Production Estimates by Various Agencies

Veg Oil	Total			Soy oil	Palm oil	RS Oil	SFS Oil
	FAO	ABARES	USDA				
2012-13	190.2	161.1	160.8	43.1	56.4	24.8	13.1
2013-14	203.3	171.2	170.8	45.0	59.3	26.5	15.8
2014-15	209.9	174.8	176.2	49.0	61.4	27.1	15.1
2015-16	208.6	178.2	178.3	51.1	62.6	25.9	15.2

Oilseed meal: USDA forecast of 2015-16 **total protein meal** production is a record 305.4 million tonnes (including 4.3 million tonnes of fish meal) compared to 300.2 million tonnes in 2014-15 (which included 4.3 million tonnes of fish meal). Most of the increase is in **soybean meal**, partly offset by a decline in **cottonseed meal** and **rapeseed meal**. World oilseed meal production in 2015-16 is forecast by ABARES to increase by 3 per cent to 301.4 million tonnes. Forecast record soybean crush (particularly in Argentina and Brazil) is expected to result in soybean meal production expanding by 5 per cent to 211 million tonnes. 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 of 140.4 million tonnes (Table II.2.9).

Table II.2.9: Protein Meal Production Estimates by Various Agencies

Oil Meal	Total Protein Meal Production (MMT)			Soy Meal	RS Meal	CS Meal	SFS Meal
	FAO 1/	ABARES	USDA				
2012-13	119.5	268.6	268.5	181.3	36.8	15.7	13.8
2013-14	128.8	282.1	282.2	189.5	39.4	15.6	16.6
2014-15	140.4	293.7	300.2	207.2	40.2	15.5	15.9
2015-16	138.2	301.4	305.4	215.6	38.4	14.0	15.9

1/ Protein equivalent basis (includes fish meal) 2/ Includes fish meal.

Sugar: ABARES forecasts world sugar production to decline by 2 per cent in 2015-16 to 178 million tonnes, largely reflecting forecast lower production in Europe, China and

India. Production in these markets is forecast to decline because growers responded to relatively low sugar prices by reducing plantings (Table II.2.10). Yields are expected to be negatively affected by unfavourable seasonal conditions. USDA in its November Sugar: World Markets and Trade report forecasts 2015-16 global sugar production down 3 million metric tonnes at 172 million (raw value) with reductions in Brazil, India, the European Union, and Ukraine more than offsetting gains in Australia, Russia and Turkey. FAO has not come out with its 2015-16 sugar production assessment.

Table II.2.10: Sugar Production Estimates by Various Agencies

Sugar	Production (Raw)		
	USDA	FAO	ABARES
2012-13	177.6	182.3	184.5
2013-14	175.6	180.6	182.1
2014-15	175.1	181.0	182.4
2015-16	172.1	NA	178.0

Milk: FAO forecast world milk production to grow by 1.5 per cent to 801 million tonnes in 2015. Output is set to expand in all regions except Oceania, with most of the increase expected to come from Asia, principally from India where production is expected to expand by 4.3 per cent, or 6.1 million tonnes, to 147.8 million tonnes. While Asia is expected to account for most of the increase, production is expected to rise in all regions except Oceania. Output in India, the world's largest milk producing country, is expected to expand by 4.3 per cent, 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. New Zealand's production in the current dairy year is anticipated to decrease by 2 per cent to 21.5 million tonnes, as farmers cull less-productive cows. Australian milk production is forecast to remain largely unchanged at 9.75 million tonnes in 2015-16, with higher milk yields offsetting lower cow numbers. USDA's cow milk production forecast for 2015 is 489.8 million tonnes, which include 147 million in the EU, 94.7 million tonnes in the U.S., 9.8 million tonnes in Australia, 63.5 million tonnes (excluding buffalo milk) in India, and 21.7 million tonnes in New Zealand. Butter production in 2015 is forecast at 9.7 million tonnes and NFDM at 4.5 million tonnes, and WMP production at 4.7 million tonnes.

II.2.2 Consumption growth sizable

Wheat: All global agencies are forecasting an increase in global wheat consumption in 2015-16 over 2014-15 (Table II.2.11). USDA forecasts world wheat consumption in 2015-16 at 717.1 million tonnes against 707.0 million tonnes 2014-15, an increase of 10.1 million tonnes. A 1 million tonne reduction in wheat feed use is forecast for the EU despite a record crop, as the quality of wheat is reported to be high quality.

FAO forecasts total world wheat utilization in 2015-16 at 728 million tonnes, a significant increase over the 2014-15 estimate of 715 million tonnes, with food use increasing by almost 1 per cent to 491 million tonnes and feed use by 3.5 per cent to 145 million tonnes.

According to ABARES, world wheat consumption is forecast to rise by 10 million tonnes in 2015-16 to 720 million tonnes, with approximately equal contributions from continued growth in use of wheat for human consumption and an increase in use of wheat for feed. Human consumption accounts for around two-thirds of total wheat use and is expected to increase by just over 1 per cent in 2015-16. Consumption has been shifting towards some developing countries in Asia and Africa as a result of population growth and increasing

FAO forecast world milk production to grow by 1.5 per cent to 801 million tonnes in 2015.

Output in India, the world's largest milk producing country, is expected to expand by 4.3 per cent, or 6.1 million tonnes, to 147.8 million tonnes.

USDA forecasts world wheat consumption in 2015-16 at 717.1 million tonnes against 707.0 million tonnes 2014-15

FAO forecasts total world wheat utilization in 2015-16 at 728

According to ABARES, world wheat consumption is forecast to rise by 10 million tonnes in 2015-16 to 720 million tonnes

IGC consumption forecast of wheat for 2015-16 is 719.6 million tonnes, a 10 million tonnes increase over 2014-15.

USDA forecasts total rice utilization in 2015-16 to increase by 2.6 million tonnes to a record 484.6 million tonnes.

In India rice consumption in 2015-16 is forecast to remain unchanged from the previous year's level at 90 million tonnes.

per person consumption. Use of wheat for feed is forecast to increase by 4 per cent in 2015-16 to 142 million tonnes, which if realised would be the largest volume of feed wheat consumption since 2011-12.

IGC consumption forecast of wheat for 2015-16 is 719.6 million tonnes, a 10 million tonnes increase over 2014-15. Food use is forecast to increase to 483.5 million tonnes in 2015-16 from 477.6 million tonnes the previous year and feed use to 146.4 million tonnes from 140.1 million tonnes. Seed, industrial and other use combined is likely to remain almost unchanged at around 90 million tonnes.

Table II.2.11: Wheat Domestic Consumption Estimates by Various Agencies

Year	Domestic Consumption (MMT)			
	USDA	FAO	IGC	ABARES
2012-13	679.2	685.8	676.7	676.4
2013-14	698.6	695.0	696.2	696.2
2014-15	707.0	715.3	709.5	709.6
2015-16	717.1	728.0	719.6	719.6

Rice: USDA forecasts total rice utilization in 2015-16 to increase by 2.6 million tonnes to a record 484.6 million tonnes, although production is projected to decline, by drawing down stocks. On an annual basis, China accounts for the bulk of the projected increase in global rice consumption in 2015-16. Consumption is also projected to be larger in 2015-16 than a year earlier in Bangladesh, Indonesia, and the Philippines. In India rice consumption in 2015-16 is forecast to remain unchanged from the previous year's level at 90 million tonnes. FAO forecasts world rice utilization to grow by 1.3 per cent, to 499 million tonnes, of which around 402 million tonnes expected to be consumed as food, some 1.4 per cent more than in the previous season and broadly in line with world population growth. ABARES is also showing a 3.6 million tonnes increase in rice consumption in 2015-16 at 488.2 million tonnes (Table II.2.12).

Table II.2.12: Rice Domestic Consumption Estimates by Various Agencies

Year	Domestic Consumption (MMT)			
	USDA	FAO	IGC	ABARES
2012-13	468.9	473.5	468.8	468.8
2013-14	481.6	483.0	479.5	479.4
2014-15	482.0	493.0	483.4	484.6
2015-16	484.6	499.3	486.3	488.2

Coarse grains: World coarse grain use in 2015-16 is projected by USDA at a record large 1,264.9 million tonnes, nearly the same as estimated 2014-15 use of 1,264.6 million. Global 2015-16 coarse grain feed use is projected at 760.4 million, and world food, seed, and industrial use is forecast at 505.8 million tonnes. EU 2015-16 coarse grain use is projected at 161.4 million. There is also a small increase in forecast EU sorghum feed use.

Table II.2.13: Coarse Grain Domestic Consumption Estimates by Various Agencies

Year	Domestic Consumption			
	USDA	FAO	IGC	ABARES
2012-13	1,135.4	1,166.3	1,143.4	1,142.0
2013-14	1,233.9	1,247.3	1,236.3	1,230.0
2014-15	1,264.5	1,294.7	1,279.7	1,261.0
2015-16	1,264.9	1,301.6	1,272.6	1,265.0

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 974.1 million tonnes, although below the record consumption of 986.8 million tonnes the previous year. Maize continues to account for the bulk of industrial usage in coarse grains, at around 266 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. Food use is forecast at 110.7 million tonnes and feed use at 563.4 million tonnes, a marginal decline from the 2014-15 levels of 111.1 million tonnes for food and 574 million tonnes for feed.

According to USDA, among major coarse grains, world corn consumption in 2015-16 is forecast to decline by around 5 million tonnes to 970.2 million tonnes. A significant increase in China (up 12 million tonnes at 214 million tonnes) is likely to be more than offset by decline in the EU, Ukraine, and South Africa and several other countries.

ABARES forecasts world consumption of corn in 2015-16 to increase by 1 per cent to 975 million tonnes. Consumption of corn as livestock feed is forecast to rise by 2 per cent to 596 million tonnes, but consumption of corn for industrial use is expected to remain around the same level as 2014-15. In the United States, total corn consumption in 2015-16 is forecast to be largely unchanged at 301 million tonnes—with consumption for both feed and non-feed expected to remain close to 2014-15 levels. Use of corn in ethanol production in the United States is forecast to fall by around 1 per cent to 131 million tonnes. Despite this, the level of corn used in US ethanol production in 2015-16 is forecast to remain 3 per cent above the five-year average of 128 million tonnes. The fall in corn use in ethanol production is expected to be largely offset by an expected increase in use of corn as food and seed. Consumption of corn in the European Union is forecast to fall by 3 per cent to 75 million tonnes. Corn consumption in China is forecast to increase by 4 per cent in 2015-16 to 215 million tonnes, with 150 million tonnes expected to be consumed as livestock feed. This would be an increase of 7 per cent from 2014-15.

Table II.2.14: Maize Domestic Consumption Estimates by Various Agencies

Year	Domestic Consumption		
	USDA	FAO	IGC
2012-13	865.2	885.0	865.6
2013-14	949.4	944.4	947.1
2014-15	975.5	990.4	986.8
2015-16	970.2	1005.3	974.1

Barley: USDA forecasts world barley consumption in 2015-16 to increase to 145.6 million tonnes from 141.0 million tonnes in 2014-15.

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 974.1 million tonnes.

According to USDA, among major coarse grains, world corn consumption in 2015-16 is forecast to decline by around 5 million tonnes to 970.2 million tonnes.

ABARES forecasts world consumption of corn in 2015-16 to increase by 1 per cent to 975 million tonnes.

USDA forecasts world oilseed crush in 2015-16 to increase to a record 445 million tonnes from 439.7 million tonnes in 2014-15.

World vegetable oil consumption is forecast by USDA to rise by about 6 million tonnes in 2015-16 from the 2014-15 level to 176.9 million tonnes, a record high.

With the slump in global crude petroleum oil prices, the price premiums of vegetable oils (especially palm and soy oil) widened, making biodiesel blending uneconomical.

ABARES forecasts world consumption of barley to fall by 1 per cent in 2015-16 to 140 million tonnes. Feed consumption is forecast to fall by 3 per cent to 92 million tonnes. Barley consumption in China is forecast to fall by more than 26 per cent to 8.4 million tonnes, from a high of 11.4 million

Sorghum: USDA forecasts world sorghum consumption to increase by 3.0 million tonnes to 65.2 million tonnes in 2015-16. Most of the increase is in the United States, Mexico, and Australia, China, and Mexico, more than offsetting the decline in China and Nigeria.

Oilseeds: USDA forecasts world oilseed crush in 2015-16 to increase to a record 445 million tonnes from 439.7 million tonnes in 2014-15. Almost the entire increase is in soybeans estimated at 273.7 million tonnes, an increase of 11.3 million tonnes over 2014-15, largely offsetting the crush decline in other oilseeds, particularly in rapeseed/mustard and cottonseed.

Table II.2.15: Oilseed/Soybeans Consumption/Crush Estimates by Various Agencies

Year	Total Oilseeds Crush MMT		Soybeans Crush MMT	
	USDA	ABARES 1/	USDA	IGC
2012-13	396.4	469.2	230.2	236.4
2013-14	418.9	494.0	241.3	249.8
2014-15	439.7	516.5	262.4	273.2
2015-16	445.0	519.3	273.7	283.1

1/ Total Consumption including food, feed, seed.

Vegetable oil: World vegetable oil consumption is forecast by USDA to rise by about 6 million tonnes in 2015-16 from the 2014-15 level to 176.9 million tonnes, a record high. The forecast higher use of vegetable oils in 2015-16 is expected to be driven by a 4.2 million tonne increase in palm oil to 62.7 million tonnes, and soybean oil by around 2.2 million tonnes to 50.2 million tonnes, partially offset by a marginal decline in consumption of rapeseed oil and cotton seed oil. Consumption is expected to be driven by India and China.

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. Together, soy and palm oil are anticipated to satisfy close to 60 per cent of total oils/fats demand. Consumption of rapeseed, sunflower and cottonseed oils is likely to drop. The key drivers behind increased uptake for food and traditional industrial uses continue to be population increases and economic growth in some of the main consuming regions, particularly India and China. Consumption should also be stimulated by prevailing low prices. Contrary to recent years, rising demand from the biofuel sector is expected to be less of a driving factor in 2015-16. In fact, for the first time, industry estimates for 2015 point towards a contraction in global biodiesel production. With the slump in global crude petroleum oil prices, the price premiums of vegetable oils (especially palm and soy oil) widened, making biodiesel blending uneconomical.

Table II.2.16: Vegetable Oils Consumption Estimates by Various Agencies

Year	Total Oils			Soy oil	Palm Oil	RS Oil	SFS Oil
	FAO 1/	ABARES	USDA				
2012-13	190.1	158.0	157.7	42.6	55.2	23.6	13.0
2013-14	198.9	166.0	166.1	45.2	57.9	25.4	14.3
2014-15	204.6	171.8	170.8	48.0	58.5	26.9	14.2
2015-16	211.8	178.9	176.9	50.2	62.7	26.6	14.3

1/ Including animal fats and fish oil.

Oilseed meal: USDA forecasts world protein meal consumption (including fish meal) to increase to 302.8 million tonnes in 2015-16 compared to 293.0 million tonnes in 2014-15. ABARES forecast is close at 299.6 million tonnes, an increase of 3.9 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).

Table II.2.17: Protein Meal/Soya meal Consumption Estimates by Various Agencies

Year	Consumption Total Protein Meal (MMT)			Soymeal
	FAO 1/2/	ABARES	USDA 1/	
2012-13	118.8	263.9	263.9	177.5
2013-14	125.3	277.0	276.7	186.2
2014-15	132.2	288.3	293.0t	202.1
2015-16	136.8	299.6	302.8	214.1

1/ Including fish meal 2/ Protein equivalent basis.

Sugar: ABARES forecasts world sugar consumption in 2015-16 to increase by 3 million tonnes to around 184 million tonnes. This forecast largely reflects increased demand from food processing industries in developing Asian countries, particularly China, India, and Indonesia. Forecast lower sugar prices are expected to make sugar more attractive to consumers than alternative sweeteners ((high intensity sweeteners and high fructose corn syrup) in developed countries.

USDA in its November sugar report forecasts global sugar consumption for 2015-16 at a record 172.8 million tonnes (raw value). Most of the increase is in Asian countries, particularly India. In Brazil, sugar consumption is forecast lower as the economic recession has reduced sales of processed food items. In Thailand, consumption continues to trend higher, driven by growing demand from the processed food and beverage industries. In India, the world's largest consumer and second-largest producer of sugar, consumption is forecast to rise to a record 28.0 million tonnes.

FAO in its latest issue of the Food Outlook report has not included the customary assessment of the world sugar market.

ABARES forecasts world sugar consumption in 2015-16 to increase by 3 million tonnes to around 184 million tonnes.

USDA in its November sugar report forecasts global sugar consumption for 2015-16 at a record 172.8 million tonnes (raw value).

World wheat trade is forecast by ABARES to fall by around 1 per cent in 2015–16 to 151 million tonnes.

Except the FAO, all other agencies are showing a decline in rice trade in 2015-16.

Table II.2.18: Sugar Consumption Estimates by Various Agencies

Year	Domestic Consumption (MMT)		
	USDA 1/	FAO	ABARES
2012-13	165.6	176.1	175.7
2013-14	166.5	176.9	179.0
2014-15	170.8	179.8	181.0
2015-16	172.8	NA	183.8

1/ Raw value basis.

II.2.3 Global agricultural commodity trade outlook mixed

Wheat: World wheat trade is forecast by ABARES to fall by around 1 per cent in 2015–16 to 151 million tonnes due to increased domestic supplies in many importing countries, lowering import demand there, despite expected increased imports into Brazil, Indonesia and many sub-Saharan African countries. These expected increases reflect continuing growth in demand for milling wheat and decreased domestic crop quality in Brazil. Modest increases in feed wheat imports are also likely in some Asian countries, reflecting abundant world supplies of feed-quality wheat and relatively low prices. Exports from the Black Sea region are forecast to increase by 14 per cent in 2015–16 to 45 million tonnes supported by abundant exportable supplies and by weakness in currencies, which increases competitiveness of exports from the region.

USDA projects world wheat and wheat products (wheat equivalent) trade in 2015-16 trade year (July-June) at 162.3 million compared to 161.3 million tonnes the previous year, close to the previous all-time record of 2013/14. An increase in exports are projected from Canada, Ukraine but decline from the EU. The U.S. wheat export forecast for 2015-16 is 22.0 million tonnes compared to 22.75 million tonnes, the lowest level during the past several years. Major importers are: Egypt (11.5 MMT), Algeria (7.7 MMT), Brazil (6.3 MMT), Indonesia (8.1 MMT) and the EU (6 MMT). IGC export projection for 2015-16 at 150.8 million tonnes, 2.3 million tonne decline from 2014-15 exports.

Table II.2.19: Wheat Trade Estimates by Various Agencies

Year	Trade (MMT)			
	USDA	FAO	IGC	ABARES
2012-13	147.2	142.7	141.9	140.5
2013-14	162.4	156.9	156.3	156.3
2014-15	161.3	155.8	153.1	153.1
2015-16	162.3	149.5	150.8	150.8

Rice: Except the FAO, all other agencies are showing a decline in rice trade in 2015-16 (Table II.2.20). IGC projected global trade at 41.5 million tonnes, down fractionally y-o-y, but well above average on firm demand from buyers in Asia in particular including Indonesia and Malaysia, amid government efforts to ensure ample domestic supplies. Thailand is seen as the biggest exporter for the first time since 2011.

USDA forecasts global rice trade in calendar year 2016 at 41.3 million tonnes, down 1.1 million tonnes from CY 2015 exports, nevertheless the third largest on record. In 2016, a big decline in India's exports, along with reduced shipments from Australia, Myanmar, Cambodia, and the United States is not expected to be fully offset by increased exports

from Egypt, Pakistan, South America, Thailand, and Vietnam. Major importers are China, Nigeria, Philippines, and Indonesia. Other importers are Saudi Arabia and Iran, importing mostly basmati rice from India.

In calendar year 2016, world rice trade is anticipated by FAO to rebound by 2.6 per cent to 45 million tonnes, sustained by stronger import demand by Indonesia, the Philippines, the Islamic Republic of Iran, and Nigeria.

Table II.2.20: Rice Trade Estimates by Various Agencies

Year	Trade (MMT)			
	USDA	FAO	IGC	ABARES
2012-13	39.5	40.1	37.8	38.0
2013-14	43.4	45.3	43.2	43.2
2014-15	42.4	43.9	42.1	42.6
2015-16	41.3	45.0	41.5	40.0

Coarse grains: USDA forecasts a decline in global total coarse grain trade in MY 2015-16 to 166.1 million tonnes from the record exports of 173.0 million tonnes in 2014-15, with most of the decline in exports confined to the U.S., the EU, Russia, Ukraine and India, partly offset by larger exports from Brazil. The decline in imports are mostly to China and Iran offset by increased imports by the EU and Saudi Arabia.

FAO forecasts world trade in coarse grains in 2015-16 (July/June) to decline by 5.7 million tonnes, or 3.2 per cent, from the previous season's record to around 170 million tonnes. Much of the drop would rest on an 11.3 per cent and 9.0 per cent contraction in barley and sorghum trade volumes, respectively, following sharply reduced purchases by China.

ABARES forecasts world trade in coarse grains to decline by 9 per cent in 2015-16 to 162.5 million tonnes. This largely reflects a significant fall in coarse grain imports by China, resulting from Chinese Government measures to encourage domestic livestock producers to use domestically-produced corn as feed grain in place of imported corn substitutes. IGC forecasts total coarse grain exports in 2015-16 at 163.6 million tonnes, down 5 million tonnes from 2014-15.

According to USDA, global trade in **maize** in 2015-16 is likely to remain more or less unchanged from the previous year's level at 127.7 million tonnes. Maize exports from the United States are forecast to fall by around 5 per cent to 45.5 million tonnes, mostly offset by increased exports from Brazil. This is in part a result of the strong US dollar, which has reduced the competitiveness of US exports. Maize exports from Argentina are forecast to fall by 7.8 per cent to 17 million tonnes. Exports may rise if the newly-elected government implements policies to liberalise Argentina's maize trade.

World trade in **barley** is forecast by ABARES to decline by 7 per cent to 27 million tonnes as demand from major importing countries is forecast to contract in 2015-16. Imports into China are expected to fall by 30 per cent to 7 million tonnes, as a result of falling demand by livestock producers following the revision of the domestic corn reserve price. Import permits for corn substitutes - including barley and grain sorghum - introduced by the Chinese Government to restrict imported feed grains are also expected to lower volume of barley trade to China. Barley imports into Saudi Arabia are expected to fall by 200,000 tonnes, as the Saudi Government aims to reduce use of barley in animal feed. USDA forecast of world barley trade in 2015-16 is 25.5 million tonnes, a 4.5 million decline from the 2014-15 level, with most of the decline in exports confined to Russia and the European Union, with a drastic cut in Chinese imports.

Most of the decline in exports confined to the U.S., the EU, Russia, Ukraine and India, partly offset by larger exports from Brazil.

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.

Exports of chickpeas from Canada in 2015-16 are forecast to increase to 85,000 tonnes from 80,000 tonnes in 2014-15.

2015-16 pulse exports from Australia, consisting mainly of chickpeas, lentils and field peas are expected to increase due to expected increase in production.

USDA forecasts global vegetable oil exports to increase by about 2.0 million tonnes from 2014-15 to 71.8 million tonnes in MY 2015-16.

With Chinese imports plummeting, USDA forecasts global **sorghum** trade in 2015-16 to decline sharply to 10.3 million tonnes from a record 12.5 million tonnes in 2014-15, with most of the decline in exports confined to the U.S. and Australia.

Table II.2.21: Coarse Grain/Maize Trade Estimates by Various Agencies

Year	Trade (MMT)				Trade Maize (MMT)		
	USDA	FAO	IGC	ABARES	USDA	FAO	IGC
2012-13	132.2	135.2	128.8	122.9	100.5	100.9	99.7
2013-14	164.6	160.0	153.8	164.4	130.2	124.2	121.7
2014-15	173.0	175.7	168.6	180.0	127.8	128.2	124.8
2015-16	166.1	170.0	163.6	162.5	127.7	126.2	125.3

Pulses: Pulse export outlook for 2015-16 provides a mixed picture. For 2015-16, Canadian **dry pea** exports are forecast to decrease to 2.9 million tonnes from 3.1 million tonnes in 2014-15 due to an estimated 17 per cent decline in production. India, Bangladesh and China are Canada's top three 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. Exports of **lentils** from Canada in 2016-16 are expected to rise marginally to a record 2.2 million tonnes. India, Turkey, the EU-27 and United Arab Emirates are the top 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. Exports of **chickpeas** from Canada in 2015-16 are forecast to increase to 85,000 tonnes from 80,000 tonnes in 2014-15. 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 increase in 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.

Vegetable Oils: USDA forecasts global vegetable oil exports to increase by about 2.0 million tonnes from 2014-15 to 71.8 million tonnes in MY 2015-16, with most of the increase in soybean oil forecast to increase to 11.6 million tonnes from 11.0 million tonnes. Palm, Rapeseed (RS) and sunflower seed (SFS) oil exports in 2015-16 are expected to be more or less unchanged at 46.9 million tonnes, 4.2 million tonnes and 7.4 million tonnes, respectively. The increase in total vegetable oil imports will be mostly in India forecast by USDA at 15.2 million tonnes, an increase of 1.2 million tonnes over 2014-15. FAO forecasts 2015-16 total oils and fats (including fats of animal origin) trade to increase by 2.2 million tonnes to 114.2 million tonnes in 2015-16.

Table II.2.22: Vegetable Oil Trade Estimates by Various Agencies

Year	Trade (MMT)			Soy oil	Palm Oil	RS Oil	SFS Oil
	FAO 1/	ABARES	USDA	USDA			
2012-13	101.9	68.4	64.7	9.3	43.1	3.9	5.6

(Contd...)

Table II.2.22: (Contd...)

2013-14	107.9	70.1	66.5	9.4	43.2	3.8	7.8
2014-15	112.0	72.9	69.8	11.0	46.8	4.0	7.4
2015-16	114.2	76.5	71.8	11.6	46.9	4.2	7.4

1/ Includes fats of animal origin.

Oilseed meal: World oilseed meal exports (does not include fish meal) in 2015-16 are forecast by USDA to increase by 2.3 million tonnes to 87.6 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 from 2014-15.

Table II.2.23: Oil meal Trade Estimates by Various Agencies

Year	Trade (MMT)			Soymeal
	FAO1/	ABARES	USDA	USDA
2012-13	73.2	78.4	78.4	57.9
2013-14	81.1	82.1	82.2	60.2
2014-15	85.4	85.0	85.3	63.6
2015-16	87.1	89.1	87.6	66.1

1/ Includes fish meal.

Sugar: World sugar exports are forecast by ABARES to increase by 3 million tonnes to 67 million tonnes in 2015-16, reflecting increased supplies in major exporting countries and strong import demand from the European Union and China. Among major exporters, exports from Brazil are forecast to increase by 6 per cent in 2015-16 to 25 million tonnes based on an expected increase in supply of sugar available for export as a result of large carry-over stocks from 2014-15 and higher domestic production. Sugar exports from Thailand are forecast to reach a record 9.3 million tonnes in 2015-16, compared with 7.8 million tonnes in 2014-15. This forecast reflects a combination of relatively large carry-over stocks from 2014-15 due to increased domestic production and strong import demand from China, Indonesia and Malaysia, where sugar production is expected to fall. Australian sugar exports are forecast to rise by 7 per cent in 2015-16 to around 3.5 million tonnes as a result of expected higher production. Sugar exports from India are forecast to increase by 12 per cent in 2015-16 to 2.8 million tonnes, reflecting large carry-over stocks, assuming the Indian Government will continue to subsidise sugar exports to encourage mills to dispose of the significant volume of sugar held in stocks. EU sugar exports are forecast to remain largely unchanged at around 1.4 million tonnes in 2015-16. Sugar exports from Mexico are forecast to be around 1.3 million tonnes in 2015-16, 8 per cent lower than in 2014-15.

Among major importers, sugar imports into China are forecast to increase by 15 per cent in 2015-16 to 5.5 million tonnes, reflecting a forecast decline in domestic production and an expected increase in consumption because of continued growth in food manufacturing. Indonesian sugar imports are forecast to reach 4 million tonnes in 2015-16, 7 per cent higher than in 2014-15. EU sugar imports are forecast to increase by 24 per cent to 3.7 million tonnes in 2015-16, reflecting the forecast decline in domestic production. US sugar imports are forecast to fall by 4 per cent in 2015-16 to around 3.1 million tonnes, reflecting large domestic stocks and a forecast increase in US production. The United States is expected to meet its World Trade Organization obligation to import a minimum 1.1 million tonnes of tariff-free sugar, with the remainder to come from other sources, including its North American Free Trade Agreement partners.

Sugar exports from India are forecast to increase by 12 per cent in 2015-16 to 2.8 million tonnes, reflecting large carry-over stocks, assuming the Indian Government will continue to subsidise sugar exports to encourage mills to dispose of the significant volume of sugar held in stocks.

Among major importers, sugar imports into China are forecast to increase by 15 per cent in 2015-16 to 5.5 million tonnes.

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.

With world production falling short of utilization, world rice inventories ending in 2016 are forecast by all agencies to decline sharply.

The stocks-to-use ratio in 2015-16 is forecast to plummet to the lowest level in recent years by all the agencies, making 2016-17 supplies more vulnerable in case production declines due to the on-going El Nino conditions.

Table II.2.24: Sugar Trade Estimates by Various Agencies

Year	Trade (MMT)		
	USDA	FAO	ABARES
2012-13	55.5	54.7	61.1
2013-14	57.7	55.4	64.3
2014-15	54.1	55.3	64.0
2015-16	54.7	NA	67.0

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 229.9 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 would closing stocks of wheat to increase by 3.6 per cent to 209.7 million tonnes. FAO forecast is 207 million tonnes, an increase of 2 per cent over 2014-15 and IGC forecast 207.8 million tonnes, an increase of 3.2 per cent. The stocks-to-use ratio, a convenient measure of supply and demand interrelationships of commodities, is forecast at a record high of around 29 per cent in 2015-16 by most agencies, indicative of stable supplies and prices in 2016-17, even if there is a modest decline in production.

Table II.2.25: Wheat Stocks and Stocks-to-use Ratio

WHEAT	Ending Stocks (MMT)				Stock to Use Ratio %			
	USDA	FAO	IGC	ABARES	USDA	FAO	IGC	ABARES
2012-13	177.1	177.1	170.0	171.2	26.1	25.8	25.1	25.3
2013-14	193.8	188.2	187.7	188.8	27.7	27.1	27.0	27.1
2014-15	212.1	203.0	201.3	202.4	30.0	28.4	28.4	28.5
2015-16	229.9	206.9	207.8	209.7	32.1	28.4	28.9	29.1

Rice: With world production falling short of utilization, world rice inventories ending in 2016 are forecast by all agencies to decline sharply. The FAO forecast of rice ending stocks in 2015-16 is 165.6 million tonnes, a 6 million tonne decline from the previous year. In December 2015, the USDA revised MY 2015-16 rice ending stocks forecast further downward to 88.4 million tonnes, a decline of over 15 million tonnes from the 2014-15 level, mostly in India and Thailand, the major rice exporting countries. The 2015-16 ending stocks of rice forecast by IGC is 94 million tonnes, a decline of 12.6 million tonnes from the 2014-15 stocks. ABARES forecast of rice stocks by the end of MY 2015-16 is 93.1 million tonnes, a decline of 13.2 million tonnes from the previous year. The stocks-to-use ratio in 2015-16 is forecast to plummet to the lowest level in recent years by all the agencies, making 2016-17 supplies more vulnerable in case production declines due to the on-going El Nino conditions.

Table II.2.26: Rice Stocks and Stocks-to-use Ratio

RICE	Ending Stocks MMT				Stocks-to-Use Ratio %			
	USDA	FAO	IGC	ABARES	USDA	FAO	IGC	ABARES
2012-13	110.7	161.0	113.3	113.3	23.6	34.0	24.2	24.2
2013-14	107.6	171.6	111.6	111.6	22.3	35.5	23.3	23.3
2014-15	103.7	171.8	106.6	106.3	21.5	34.8	22.1	21.9
2015-16	88.4	165.6	94.0	93.1	18.2	33.2	19.3	19.1

Coarse grains: The USDA and the ABARES projects 2015-16 global coarse grain ending stocks to climb to record high levels. However, latest data from the FAO and the IGC show a marginal decline in ending stocks in 2015-16. FAO along with USDA are forecasting record carryover stocks of maize. By country, most of the stocks increase in total coarse grains is in China and the US partly offset by decline in the EU, Brazil and Iran. Taking maize alone, most of the increase in ending stocks, according to USDA, is in China and the U.S.

Table II.2.27: Coarse grains/Maize Stocks and Stocks-to-use Ratio

Total Coarse Grains	Ending Stocks (MMT)				Stocks-to-Use Ratio %			
	USDA	FAO	IGC	ABARES	USDA	FAO	IGC	ABARES
2012-13	163.7	194.3	165.9	168.8	14.4	16.7	14.5	14.8
2013-14	210.9	236.4	221.7	212.2	17.1	19.0	17.9	17.3
2014-15	243.3	271.5	248.6	243.4	19.2	21.0	19.4	19.3
2015-16	246.9	270.8	246.0	247.2	19.5	20.8	19.3	19.5

Maize	Ending Stocks (MMT)			Stocks-to-Use Ratio %		
	USDA	FAO	IGC	USDA	FAO	IGC
2012-13	132.9	129.1	131.5	15.4	14.6	15.2
2013-14	174.9	175.7	181.1	18.4	18.6	19.1
2014-15	208.2	223.7	207.3	21.3	22.6	21.0
2015-16	211.9	227.0	200.3	21.8	22.6	20.6

Pulses: Carry-out stocks of dry peas in Canada are forecast to decrease due to the lower exportable supply. Carry-out stocks of lentil are also forecast to decrease sharply for the second consecutive year. Data for other countries are not available.

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 95.1 million tonnes from 91.9 million tonnes in 2014-15. Most of the increase in soybeans, projected at 82.6 million tonnes, compared to 77.7 million tonnes a year ago with the increase largely confined to the United States and South America. ABARES forecast of total oilseed ending stocks in 2015-16 is 106 million tonnes, an increase of 10 million tonnes over 2014-15. IGC forecast of ending stocks of soybeans in 2015-16 is only 46.7 million tonnes, significantly below the USDA forecast. Stocks-to-use ratio of total oilseeds is forecast to reach a record 21.4 per cent by the USDA and 20.4 per cent by ABARES. Stocks-to-use (crush only) ratio of soybeans by the USDA is 30.2 percent, a record, but forecast by IGC is significantly lower at 16.5 per cent but still a record.

Table II.2.28: Total oilseeds and Soybeans Stocks and Stocks-to-use Ratio

Year	Ending Stocks (MMT)				Stocks-to-Use Ratio %			
	Total Oilseeds		Soybeans		Total Oilseeds		Soybeans	
	USDA	ABARES	USDA	IGC	USDA	ABARES	USDA	IGC
2012-13	68.3	68.5	56.2	28.4	17.2	14.6	24.4	12.0
2013-14	78.1	78.2	62.6	32.0	18.6	15.8	25.9	12.8
2014-15	91.9	96.1	77.7	44.8	20.9	18.6	29.6	16.4
2015-16	95.1	106.0	82.6	46.7	21.4	20.4	30.2	16.5

The USDA and the ABARES projects 2015-16 global coarse grain ending stocks to climb to record high levels.

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

Vegetable oil: End 2015-16 vegetable oil stocks are forecast by USDA to decline to 16.1 million tonnes from 19.0 million tonnes a year ago. ABARES forecasts stocks to decline to 18.2 million tonnes from 18.8 million tonnes during the corresponding period. Among major oils, USDA forecasts soybean oil ending stocks in 2015-16 to remain unchanged from the previous year at 3.6 million tonnes, palm oil to decline to 6.7 million tonnes from 8.3 million tonnes, rapeseed oil to decline to 3.3 million tonnes from 4.1 million tonnes and sunflower seed oil to decline from 1.5 to 1.2 million tonnes. Stocks-to-use ratios are also forecast to decline significantly in the case of total oils and individual oils (Table II.2.29), indicative of hardening of prices in 2016-17 in case global oilseed production declines.

Table II.2.29: Vegetable Oils End Socks and Stocks-to-Use Ratio

Ending Stocks (MMT)							
Vegetable Oils	Total oils			Soy oil	Palm oil	RS Oil	SFS Oil
	FAO 1/	ABARES	USDA				
2012-13	32.4	17.7	18.0	3.9	7.6	2.9	1.6
2013-14	36.0	18.6	19.2	3.5	7.6	4.0	2.1
2014-15	39.3	18.8	19.0	3.6	8.3	4.1	1.5
2015-16	NA	18.2	16.1	3.6	6.7	3.3	1.2
Stocks to Use Ratio %							
2012-13	17.0	11.2	11.4	9.2	13.8	12.4	12.5
2013-14	18.1	11.2	11.6	7.7	13.1	15.8	14.4
2014-15	19.2	10.9	11.1	7.5	14.2	15.4	10.4
2015-16	NA	10.2	9.1	7.2	10.7	12.6	8.4

1/ Includes fats of animal origin.

Oil meals: USDA forecasts a decline in total oil meal ending stocks, particularly in soy meal stocks in 2015-16. Correspondingly, Stocks-to-use ratio is also expected to dip to one of the lowest levels in recent years.

Table II.2.30: Oilseed Meal End Socks and Stocks-to-Use Ratio

Protein Meals	Ending Stocks (MMT) Total Protein Meal			Soy Meal	RS Meal	CS Meal	SFS Meal
	FAO 1/	ABARES	USDA				
2012-13	18.4	68.5	11.3	9.5	0.39	0.2	0.37
2013-14	21.6	78.2	13.0	10.5	0.43	0.2	0.87
2014-15	27.8	95.1	14.8	12.2	0.52	0.2	0.92
2015-16	NA	105.6	13.4	11.3	0.42	0.1	0.73
Protein Meals	Stocks- to- Use Ratio %			Soy Meal	RS Meal	CS Meal	SFS Meal
	FAO 1/	ABARES	USDA				
2012-13	15.5	26.0	4.3	5.4	1.1	1.4	2.6
2013-14	17.2	28.2	4.7	5.6	1.1	1.2	5.6
2014-15	21.0	33.0	5.1	6.0	1.3	1.2	6.0
2015-16	NA	35.2	4.4	5.3	1.1	0.1	4.7

1/ Includes fish meal.

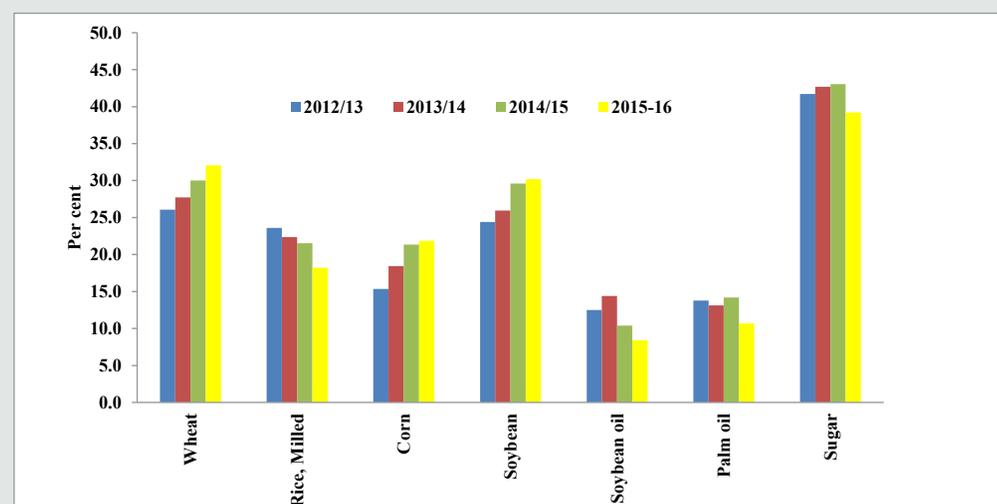
Sugar: USDA forecasts world closing stocks of sugar are to decline to 39.6 million tonnes (raw value basis) in 2015-16 from 43.6 million tonnes in 2014-15. ABARES also forecasts a significant decline in year-end sugar stocks in 2015-16 to 72.1 million tonnes from 77.9 million tonnes in 2014-15. Stocks-to-use ratio is also forecast to dip to one of the lowest levels in recent years by both the agencies. This is a result of world consumption being forecast to exceed world production for the first time since 2009-10. Despite this forecast decline, world sugar stocks are expected to be the fourth-largest on record (Table II.2.31)

Table II.2.31: Sugar End Socks and Stocks-to-Use Ratio

Sugar	Stocks (MMT)			Stocks-to-Use Ratio %		
	USDA 1/	FAO	ABARES	USDA 1/	FAO	ABARES
2012-13	42.5	74.7	73.3	25.7	42.4	41.7
2013-14	43.8	78.4	76.4	26.3	44.3	42.7
2014-15	43.6	79.4	77.9	25.5	44.2	43.0
2015-16	39.6	NA	72.1	22.9	NA	39.2

1/ Raw value.

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



Source: USDA and ABARES (sugar).

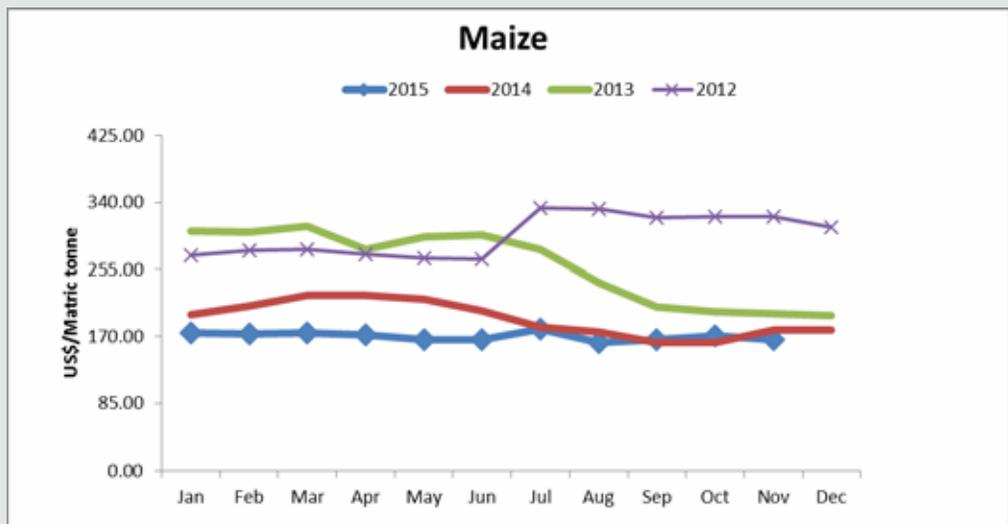
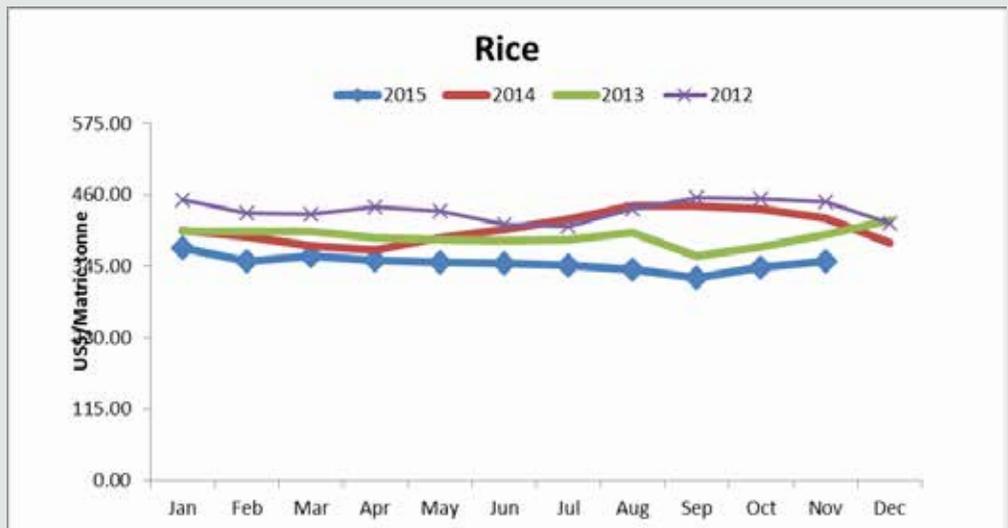
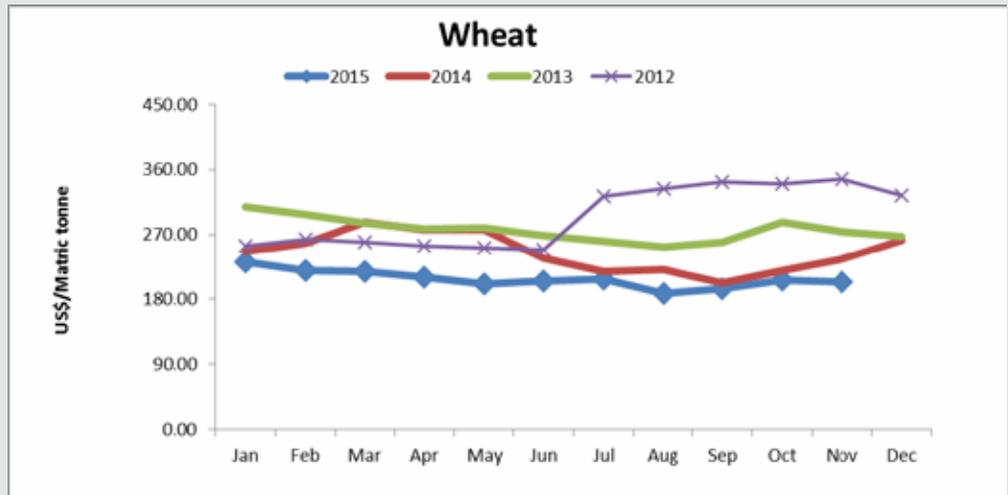
II.2.5 Prices in 2015 significantly below the 2014 level

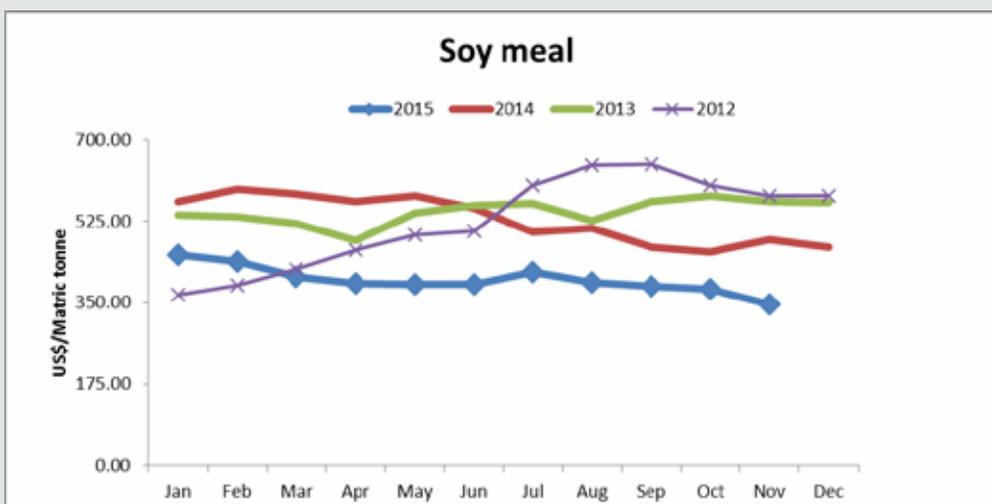
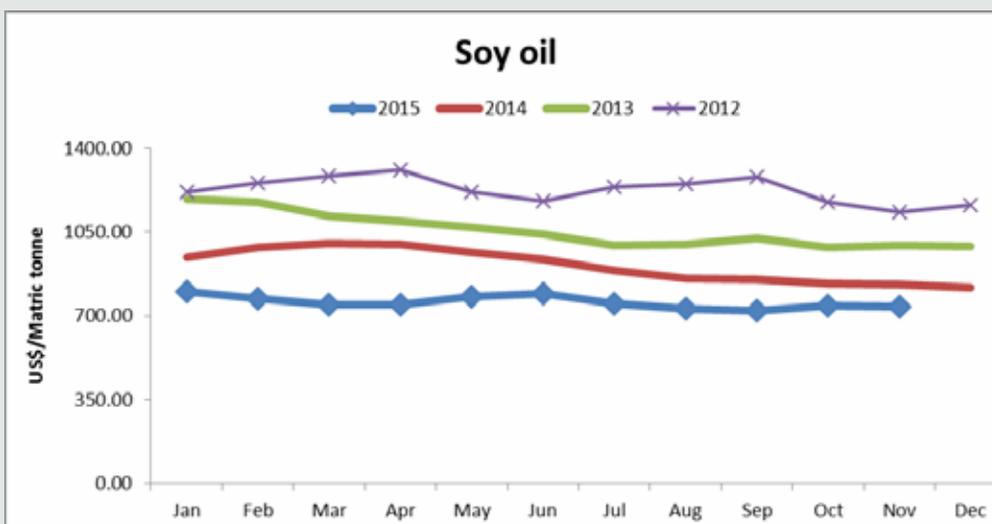
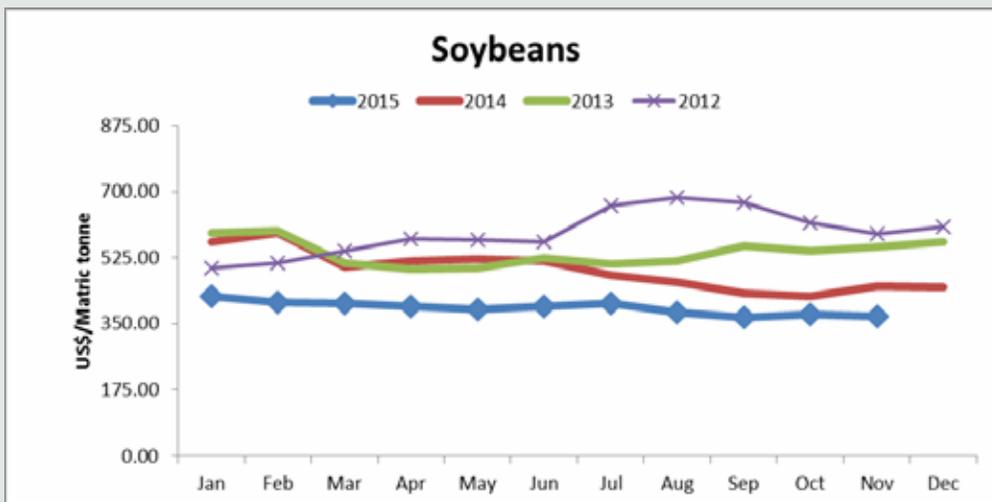
All commodity prices through September this year have remained well below the prices a year ago. Record productions, large carryover stocks in 2014-15 combined with an optimistic production outlook for most crops in 2015-16 are weighing on the international prices of most commodities. However, international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

Stocks-to-use ratio is also forecast to dip to one of the lowest levels in recent years by both the agencies.



Figure II.2: Global Price Trend of Major Commodities (US\$/Metric Tonne)

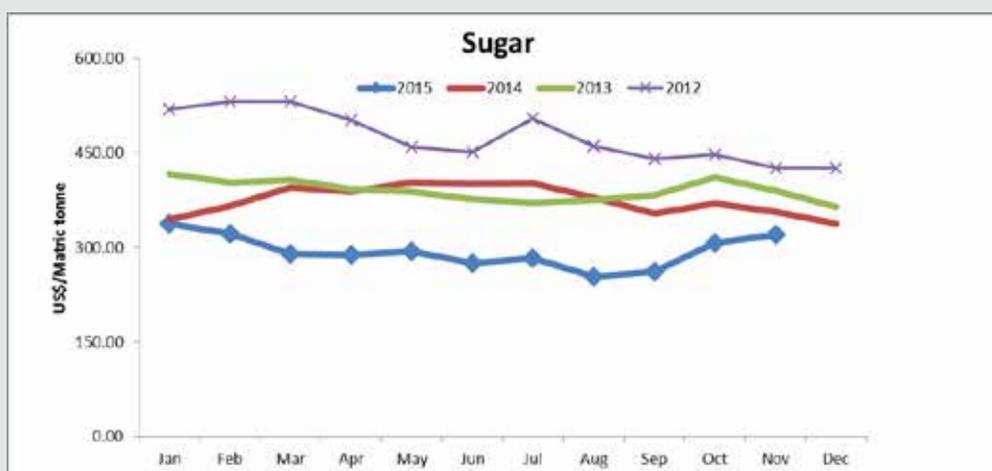
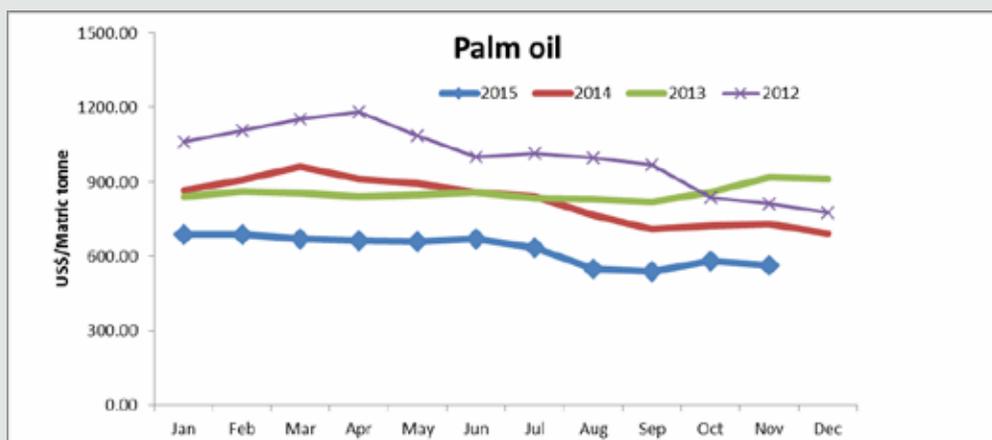




The FAO Food Price Index (FFPI) averaged 156.7 points in November 2015, down 2.6 points (1.6 percent) from its revised October average.

The FAO Cereal Price Index averaged 153.7 points in November, down 3.7 points (2.3 percent) from October and the lowest level since June 2010.

The FAO Vegetable Oil Price Index averaged 137.8 points in November, down 4.4 points (3.1 percent) from October.



Source: World Bank http://siteresources.worldbank.org/INTPROSPECTS/Resources/334934-1304428586133/pink_data_m.xlsx

II.2.6 FAO Food Price Index resumed its fall in November after a spike in October

The FAO Food Price Index (FFPI) averaged 156.7 points in November 2015, down 2.6 points (1.6 percent) from its revised October average. Except for sugar prices, which increased for the third consecutive month, all the other commodities included in the FFPI saw their prices drop, under the pressure of a strong dollar and generally abundant supplies. Compared to November 2014, the FFPI was about 18 per cent lower, with meat values recording the sharpest fall, of 23 per cent, followed by cereals and oils, which dropped by 16 per cent each, dairy by 15 per cent and finally sugar, which despite recent gains was still down 10 per cent year-on-year.

The FAO Cereal Price Index averaged 153.7 points in November, down 3.7 points (2.3 percent) from October and the lowest level since June 2010. Coarse grains prices fell the most, under generally favourable harvesting conditions and confirmation of large supplies in the United States, the world's largest maize producer and exporter. Wheat quotations also receded, mostly on ample global supplies and weak international demand. Likewise, despite a tightening of supplies, the rice price sub-index subsided further, on falling aromatic and Japonica quotations.

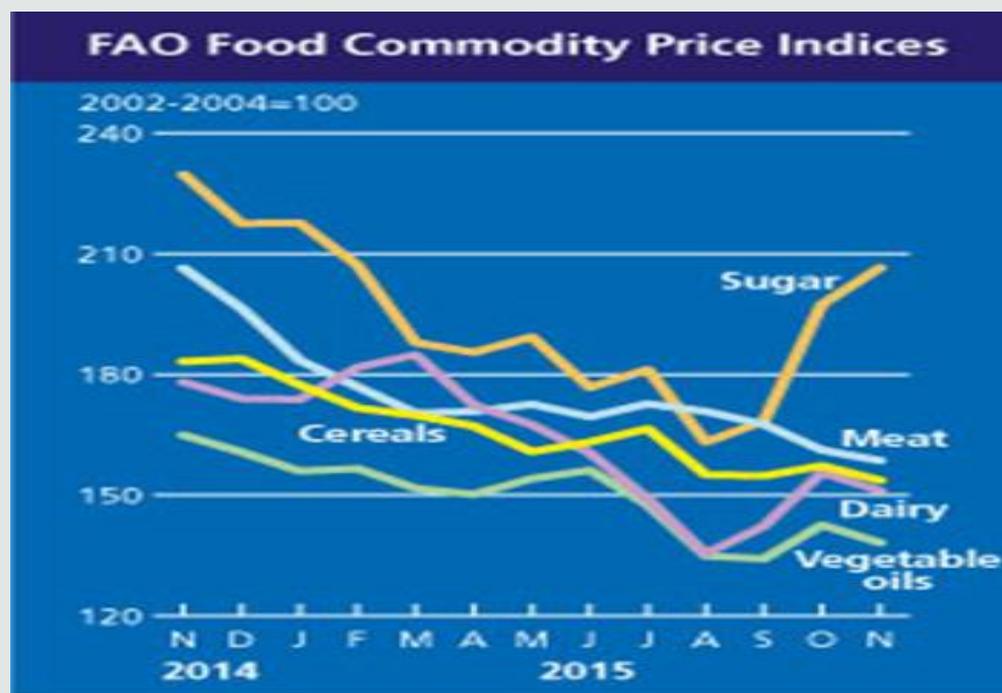
The FAO Vegetable Oil Price Index averaged 137.8 points in November, down 4.4 points (3.1 percent) from October, resuming a falling trend after a short-lived spike. Although primarily driven by weaker palm and soy oil prices, lower energy prices also contributed to

the slide in the index. International palm oil quotations dropped, as sluggish global import demand coincided with larger than anticipated production in South East Asia. As for soy oil, prices fell in response to upward revisions in soy production prospects in the United States and improved planting conditions in South America.

The **FAO Dairy Price Index** averaged 151.1 points in November, down 4.6 points (2.9 per cent) from October. After rising in September and October, limited buying interest resulted in prices falling last month, a sign that major importers have accumulated adequate stocks for their immediate needs. Quotations for butter and milk powders dropped, while those for cheese were steady. Milk production in Oceania for the current dairy year is anticipated to be lower, while output in the European Union is similar to last year.

The **FAO Sugar Price Index** averaged 206.5 points in November, up 9.1 points (4.6 per cent) from October and the highest level since February 2015. The increase was prompted by continued concerns over harvesting delays caused by excessive precipitation in the South-Central producing regions in Brazil. In addition, reports of weather-induced crop damages in other leading sugar producing countries (namely India, Thailand, South Africa, and Vietnam) lent further market support.

Figure II.3: FAO Commodity Price Index



II.2.7 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, October 2015¹⁵, agricultural commodity prices fell by more than 2 per cent in the third quarter of 2015 and are likely to fall by 13 per cent in 2015, reflecting abundant supplies and high levels of existing grain stocks. This report has provided a long-term forecast of commodity prices, which are summarized in **Table II.2.32**, and **Figure II.4.1**. 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.

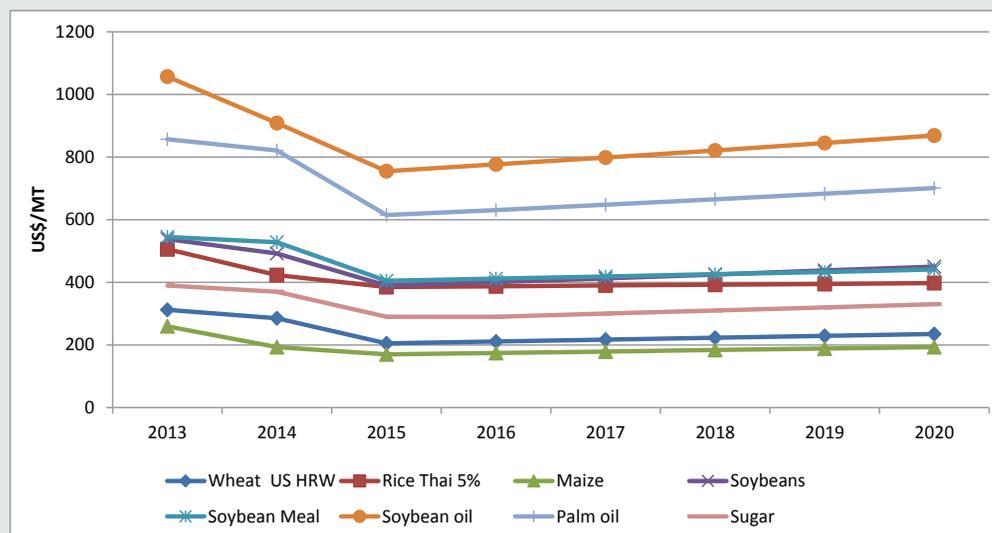
¹⁵World bank outlook report October 2015 <http://pubdocs.worldbank.org/pubdocs/publicdoc/2015/10/966751445286237369/CMO-Oct-2015-Historical-Forecasts.pdf>

The FAO Dairy Price Index averaged 151.1 points in November, down 4.6 points (2.9 per cent) from October.

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

Table II.2.32: World Bank Commodities price forecasts, nominal U.S. dollars per MT

	2013	2014	2015	2016	2017	2018	2019	2020	% Change 2016 over 2015
Wheat US HRW	312.2	284.9	205	210.7	216.8	222.7	228.9	235.3	2.8
Rice Thai 5%	505.9	422.8	385	387.4	389.9	392.3	394.8	397.3	0.6
Maize	259.4	192.9	170	174.4	179	183.7	188.5	193.4	2.6
Soybeans	538	492	390	401	413	425	438	450	2.8
Soybean Meal	545	528	405	412	419	426	433	441	1.7
Soybean oil	1057	909	755	777	799	821	845	869	2.9
Palm oil	857	821	615	631	648	665	683	701	2.6
Sugar	390	370	290	290	300	310	320	330	0.0

Figure II.4.1: World Bank Commodities price forecasts, nominal U.S. dollars per MT


According to FAO/OECD Agricultural Outlook 2015-2025 Report¹⁶, 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.2.33 and Figure II.4.2.

According to FAO/OECD Agricultural Outlook 2015-2025 Report, 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.

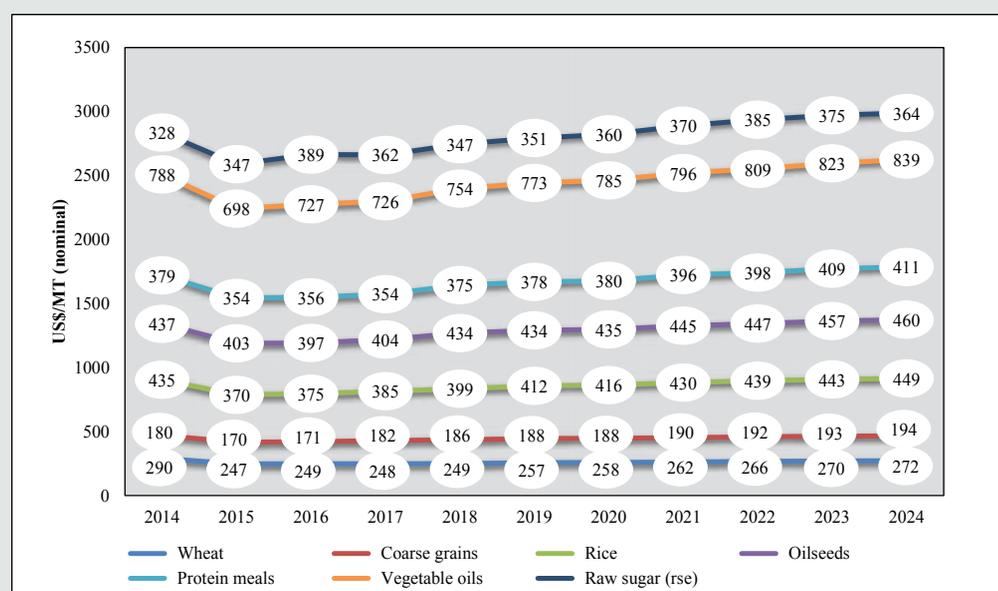
¹⁶<http://www.oecd.org/site/oecd-faoagriculturaloutlook/>

Table II.2.33: 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.4.2: 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. If realised, this would be the lowest annual average price in real terms since 2005–06.

The world coarse grains indicator price (US no. 2 yellow corn, fob Gulf) is forecast to average 3 per cent lower in 2015–16 at US\$169 a tonne. The world indicator price for barley (France feed barley, fob Rouen) is forecast to average 7 per cent lower in 2015–16 at US\$190 a tonne.

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.

To check large scale imports, the government has imposed 10 per cent import duty on wheat and raised it further to 25 per cent.

Indian non-basmati rice exports are likely to face increased competition in coming months.

The world oilseed indicator price (US no. 2 soybeans, fob Gulf) is forecast to fall by 11 per cent in 2015–16 to average US\$370 a tonne. A forecast tightening in world vegetable oil markets from an expected slowdown in palm oil production and reduced supply of other oilseeds is expected to support soybean prices.

The world indicator price for raw sugar (Intercontinental Exchange, nearby futures, no. 11 contract) is forecast to fall by 3 per cent in the 2015–16 season (October to September) to average US13 cents a pound (\$286.6 per tonne).

Among major globally traded pulses, prices for Canadian pulses typically ease towards the end of the year. Canada is expected to get solid export demand for most of its pulses due to a significant decline in pulse production in India, a major importer of Canadian pulses, leading to sky rocketing prices. Official forecast made in mid-October are given below:

- Canadian lentil prices in 2015-16 are forecast to increase to C\$750 to 780 per tonne from the 2014-15 average price of C\$585 per tonne.
- The average price of Canadian dry peas is officially projected to increase to C\$ 295 to 325 per tonne from 2014-15 average price of C\$260 per tonne in 2015-16.
- The average price for Canadian chickpeas in 2015-16 is forecast to increase to C\$ 600 to 630 per tonne from C\$ 515 per tonne in 2014-15.
- Prices of most pulses in Myanmar is likely to strengthen due to crop damage caused by floods and increased demand from India.

II.2.8 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 presents 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 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. However, significant crop loss in Myanmar following the flooding in late July and early August will restrict rice exports from this country. 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.

In the global market, bearish sentiment for sugar is turning bullish. Sugar prices have increased significantly during the past few months because of heavy rainfall in Brazil that has slowed down cane harvest. The ongoing dry weather is likely to harm Brazil's next cane crop. Recent recovery in global sugar prices and weaker rupee should support Indian sugar exports.

The forecast increase in global vegetable oils prices could make India's imports costlier. 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. The recent weakening Indian rupee exchange rate against U.S. dollar will prove disadvantageous for Indian consumers of food items such as vegetable oils and pulses.

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.

Despite the forecasted modest strengthening of international coarse grain prices, maize exports from India are likely to remain subdued.

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

Nevertheless, sky rocketing domestic prices of pulses, particularly for tur, following poor monsoon rains in growing regions, should prop imports.

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 December 2015

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

Oilseeds: World Market and Trade December 2015

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

Sugar: World Market and Trade October 2015

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

Agriculture and Agri-Food Canada

Canada-Outlook for Principal Field Crops November 2015

http://www.agr.gc.ca/resources/prod/doc/misb/mag-gam/fco-ppc/fco-ppc_2015-11-23_eng.pdf

<http://www.agr.gc.ca>

International Grains Council

Grain Market Report, November 2015

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

ABARES

Agricultural Commodities Outlook, December Quarter 2015

http://data.daff.gov.au/data/warehouse/agcomd9abcc004/agcomd9abcc20151208/AgCommodities201512_v1.0.0.pdf

Australian Crop Report December 2015

http://data.daff.gov.au/data/warehouse/aucrpd9abcc003/aucrpd9abcc20151201/AustCropRrt20151201_v1.0.0.pdf

World Bank

Commodity Market Outlook Report October 2015

<http://pubdocs.worldbank.org/pubdocs/publicdoc/2015/10/22401445260948491/CMO-October-2015-Full-Report.pdf>

World Bank Commodity Price Data (The Pink Sheet)

<http://pubdocs.worldbank.org/pubdocs/publicdoc/2015/12/146821449078048304/Pnk-1215.pdf>

IMF

IMF EXCHANGE RATES

<https://www.imf.org/external/np/fin/ert/GUI/Pages/CountryDataBase.aspx>





PART III

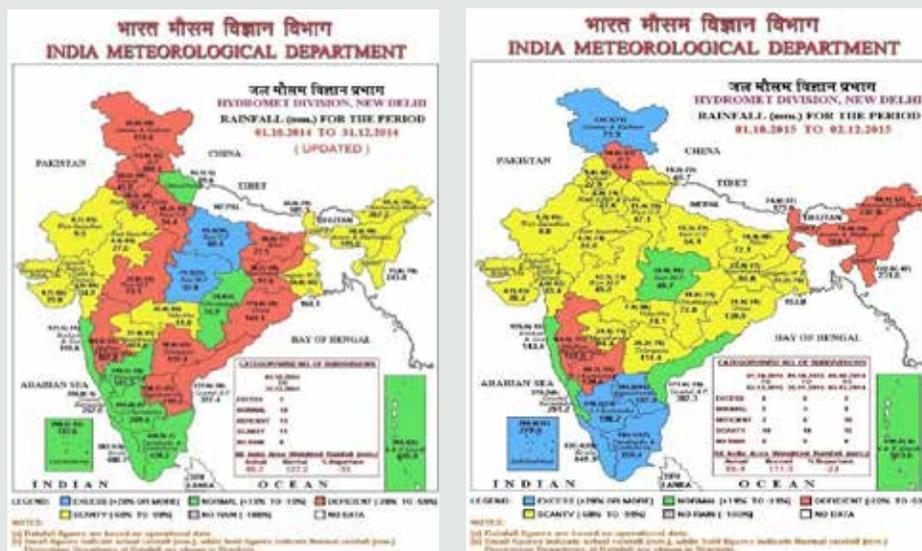
Overall Agricultural Outlook Scenario for Rabi Season 2015-16

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 2015-16 *rabi* season agricultural outlook.

III.1 Weather

The 2015 South West monsoon season (June-September) rainfall over the country as a whole wound up with a 14 per cent deficiency over its long period average (LPA) compared to 12 per cent in 2014, making 2014 and 2015 the fourth case of two consecutive all India deficient monsoon years during the last 115 years. There was significant spatial and temporal distribution of rainfall in 2015. A comparison of various parameters such as arrival, spatial and temporal distribution discussed in detail in the **Kharif Season Outlook Report** showed 2015 monsoon turned out to be worse than the 2014 monsoon. Poor rainfall towards the fag end of this year's monsoon season and significantly below normal rainfall during the post-monsoon season (October through December) left many regions in central, west, south India and major wheat growing regions of North and Central India parched (**Figure III.1**), giving an ominous start to sowing of most rabi crops compared to 2014.

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



According to official sources, crop area of about 19 million hectares has been affected in seven states which include Chhattisgarh (3.09 million hectares), Karnataka (3.27 million hectares), Madhya Pradesh (2.77 million hectares), Maharashtra (5.31 million hectares), Odisha (0.88 million hectares), Telangana (1.4 million hectares) and Uttar Pradesh (2.19

million ha). A total of 180 districts have been declared drought hit in these seven states and Andhra Pradesh put together, further worsening the rural distress across India. Depleted sub-soil moisture has delayed planting of most rabi crops. To make matters worse, a deep depression of high intensity formed over the Bay of Bengal hit the Tamil Nadu coast November 10 causing torrential rains, particularly in the four northern coastal districts of Cuddalore, Kanchipuram, Chennai and Tiruvallur. Chennai city received the second heaviest monthly rainfall recorded in the past more than 100 years in just the first 20 days of November. Although these rains caused heavy damage to property and infrastructure and took away many human lives, its impact on agriculture is yet to be assessed.

“A Consensus Statement on the Forecast for the Winter Season (December 2015 – February 2016) Precipitation and Temperature over South Asia”¹⁷ prepared through exchange of expert assessment among a team of experts from all the countries of South Asia shows above normal rainfall is likely during the Winter Season (December 2015 to February 2016) over southern parts of South Asia and below normal precipitation is likely over the northernmost part of South Asia, which include some major rabi crop growing regions of North West India. Other areas of the region are likely to receive normal precipitation. During the season, normal to above normal temperatures are likely, over most parts of the region. The report also states that the current strong El Niño conditions prevailing in the Pacific Ocean most certainly will continue to prevail during the winter season. However, it is recognized that there is uncertainty about the impacts of El Niño on the seasonal precipitation and temperature patterns of the region as other regional and global factors can also affect the precipitation and temperature patterns over the region.

Subnormal monsoon and post monsoon rains this year has given a poor start to the planting of most rabi crops. Although rabi crops, particularly wheat, are grown under irrigated conditions, reduced water level in most major irrigation reservoirs and depleted ground water have further set back rabi crop sowing. Progressive planting data by the Ministry of Agriculture (Table III.1) shows a significant decline in sown area of most crops during the peak planting period this year compared to last year and the normal for this time of the year. Although sowing could pick up in coming months, delayed planting could significantly reduce yields, particularly for wheat, and expose the crop vulnerable to rise in temperature during the critical grain filling stage in wheat and unseasonal rains and hail storms during harvest time of most rabi crops as being experienced during the past few years, attributed mainly to global climate change.

Table III.1: Progressive Planting of Rabi Crops (Million Hectares)

Crop	Progressive Planting			Normal Average Area as on 4-12	Change % 04/12/15 over Normal Average 04/12/14	Normal Full Rabi Season Area
	As on 4-12-2015	As on 4-12-2014	Change % 04/12/15 over 04/12/14			
Wheat	15.26	20.86	-36.70	19.17	-20.40	29.57
Rice	0.87	1.12	-28.74	1.11	-21.62	4.31
Sorghum (Jowar)	3.41	2.78	18.48	3.44	-0.87	3.96
Maize	0.73	0.85	-16.44	0.70	4.29	1.42
Barley	0.47	0.61	-29.79	0.58	-18.97	0.67
Total coarse grains	4.67	4.30	7.92	4.76	-1.89	6.04

(Contd...)

¹⁷http://www.imd.gov.in/section/nhac/dynamic/winter_2016.pdf

Table III.1: (Contd...)

Chickpea (Gram)	6.93	6.89	0.58	7.62	-9.06	8.82
Lentil (Masur)	0.96	1.20	-25.00	1.22	-21.31	1.48
Peas (Mattar)	0.67	0.89	-32.84	0.91	-26.37	0.79
Other pulses	1.49	1.71	-14.77	1.71	-12.87	2.56
Total Pulses	10.04	10.69	-6.47	11.45	-12.31	13.65
Rapeseed/mustard	5.42	6.09	-12.36	6.05	-10.41	6.28
Other oilseeds	0.77	0.81	-5.19	1.04	-25.96	2.25
Total oilseeds	6.19	6.90	-11.47	7.09	-12.69	8.53

Source: Directorate of Economics and Statistics, Ministry of Agriculture
<http://agricoop.nic.in/ncfcweather/Minutes-27-Nov-2015.pdf>

III.2 Price Environment

The current open market prices of most rabi crops with the exception of pulses, and oilseeds are lower than last year (Table I.4). The increases in Minimum Support Prices (MSP) announced for rabi crops for MY 2016-17 was much higher, both in absolute and percentage terms, in case of pulses (chickpeas and lentil) and oilseeds (rapeseed/mustard and safflower), than for rabi cereals (wheat and barley) (Table III.2). This was intended to enthruse farmers to shift from cereals, which are in adequate supplies, to pulses and oilseeds, which are in short supply, necessitating record imports of pulses and vegetable oils in recent years to contain price rise.

Table III.2: Minimum Support Prices for Rabi crops (Rs. per quintal)

Commodity	MY 2015-16	MY 2016-17	Increase in MY 2016-17 over MY 2015-16		Bonus*
			Absolute	%	
Wheat	1,450	1,525	75	5.2	-
Barley	1,150	1,225	75	6.5	-
Gram	3,175	3,425	250	7.9	75
Masur (Lentil)	3,075	3,325	250	8.1	75
Rapeseed/ Mustard	3,100	3,350	250	8.0	-
Safflower	3,050	3,300	250	8.2	-

* Bonus on Rabi pulses is payable over and above the MSP

Source: <http://pib.nic.in/newsite/erelease.aspx?relid=130275>.

Among farm inputs, prices of high speed diesel showed a significant decline during the rabi crop planting time, whereas electricity for agricultural use registered a significant increase. Prices of fertilizers and pesticides recorded modest increases (Table III.3).

Table III.3: 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	239.2	218.1	210.8
2015	200.7	188.4	203.2	195.6	209.6	212	200.8	181.4	174.1	176.5		
Y-O-Y Change %	-11.4	-17.6	-12.1	-15.0	-9.8	-9.9	-15.9	-24.5	-28.1	-26.2		
Fertilizer												
2014	153	152.9	153.1	154.4	154.3	154.2	154.4	154.2	154.6	154.9	155.4	155.3
2015	155.3	155.6	156.3	156.1	156.7	157.8	158.2	158.1	158.2	158.4		
Y-O-Y Change %	1.50	1.77	2.09	1.10	1.56	2.33	2.46	2.53	2.33	2.30		
Electricity (Agriculture)												
2014	205.5	205.5	211.3	212.1	212.1	212.1	211.3	211.3	211.5	211.5	211.5	211.5
2015	211.5	217.9	217.9	217.9	217.9	217.9	243.5	217.9	243.5	243.5		
Y-O-Y Change %	2.9	6.0	3.1	2.7	2.7	2.7	15.2	3.1	15.1	15.1		
Pesticide												
2014	127.2	128.2	130.5	130.6	131.7	135.2	135.4	135.4	135.4	136.6	136.3	137
2015	138.6	138.1	136.7	135.9	136.2	136.1	136.5	135.9	136.4	138.5		
Y-O-Y Change %	9.0	7.7	4.8	4.1	3.4	0.7	0.8	0.4	0.7	1.4		

However, labour cost continues to remain high. According to CACP calculations, at the all-India level, agricultural wage rates have increased by 16.9 percent at current prices and 7.4 per cent at constant prices (2014-15 = 100) during TE 2014-15. The CACP projects human labour cost to increase by 12.6 per cent in 2015-16 over 2014-15. Table III.4 shows the rabi season crop input index as computed by CACP in its Price Policy for Rabi Crops for the Marketing Season 2016-17.

Table III.4: Rabi Crop Input Index

Inputs	Weight (2013-14)	Rabi Crops Input Index				% Change 2015-16 Over 2014-15
		2012-13	2013-14	2014-15	2015-16	
Human Labour	0.36	287	325	365	411	12.6
Bullock Labour	0.02	264	318	365	422	15.6
Machine Labour	0.23	186	215	209	211	0.7
Seeds	0.11	221	237	254	275	8.1
Fertilizer	0.14	147	148	152	156	2.3
Manure	Neg.	210	223	237	247	4.4
Insecticide	0.01	120	126	135	140	4.2
Irrigation Charges	0.11	169	180	186	191	2.7
Composite Input Index	1.00	217	242	259	281	8.3

Source: <http://cacp.dacnet.nic.in/ViewReports.aspx?Input=2&PagelD=40&Keyld=557>.

According to various studies, the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) 2005, which directly gives a right to employment in rural areas and implemented all over the country in selected districts, is one of the reason for the significant agricultural wage hike in recent years. Under this program, families listed under Below Poverty Line (BPL), are entitled to get work for 100 days in a year. The wage rate is revised regularly. Other factors such as rise in minimum support price of food items, shift of labour to the building industry due to a spurt in construction activity, coupled with a gradual withdrawal of women from the workforce due to a myriad of reasons, have caused the spike in wages.

With rural distress becoming worse due to weather woes and lower crop prices, leading farmer unions from across the country have represented to the government the need for constitution of an Agricultural Income Commission that could suggest ways to ensure a minimum living income for farmers.

III.3 Input Supply Situation

Input supply situation for the 2015-16 rabi crops was generally favorable. The government reportedly has adequate supply of certified and quality seeds of most rabi crops to meet the requirement.

Although, **Fertilizer** stocks are adequate to meet the requirement, sales during the rabi season, with the exception of urea, up to November 26, 2015, are lagging behind sales during the corresponding period of 2014 mainly as a result of slow progress in crop sowing. Sales of various fertilizers this rabi season with the corresponding period of 2014 in parentheses in thousand metric tonnes are: urea – 4,150 (3861); DAP – 1,231 (1,422); MOP – 261 (339), complex – 943 (1,291), SSP – 511 (533). To ensure adequate availability of fertilisers, the Ministry of Chemicals and Fertilizers has taken a number of steps that include assessment of month-wise demand, regular monitoring of movement of all major subsidised fertilisers throughout the country by a web-based monitoring system.

In the Union Budget for 2015-16, the government had allocated about Rs.72, 970 crore for fertilizer subsidy, out of which Rs.38, 200 crore was earmarked for domestic urea. The fertilizer ministry is facing shortage of funds for making payments to domestic urea manufacturers as there were more than Rs.30, 000 crore subsidy arrears from the previous years, sources said. Hence, the Department of Fertiliser has sought more than Rs.25, 000 crore from the government for making subsidy payments to the domestic urea manufacturers for making subsidy payments. Urea is provided to farmers at a fixed subsidised maximum retail price (MRP) of Rs.5, 360 per tonne. The difference between the cost of production and MRP of urea is provided as subsidy to manufacturers. The annual production of urea is stagnant at 22 million tonnes while the demand is 30 million tonnes. The rest is met through imports. However, according to official sources, India is expected to become a urea surplus state from a deficit state soon and start exporting it.

The highly subsidized supply of urea has caused imbalanced use of fertilizers. To achieve the objective of balanced application of fertilizers, the government has launched a novel Soil Health Card (SHC) scheme by which farmers can know the exact nutrient level available in their soils. This will also enhance productivity and ensure higher returns to farmers.

The government is also promoting Neem Coated Urea to regulate urea application, enhance its availability to the crop and cut on cost.

The **irrigation** water storage in major reservoirs this year is worse than last year (**Figure III.2**). Water storage in 91 major reservoirs monitored by the Central Water Commission (CWC) as on November 26, 2015, at 83.2 BCM is significantly lower than the last year's





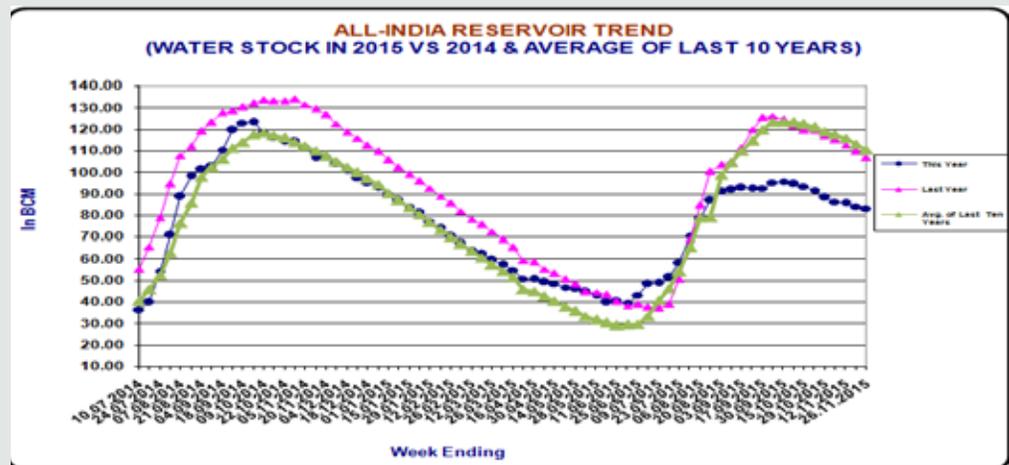
Reduced availability of water, moderate increase in commodity prices and continued increase in wage costs will challenge the farm sector to raise productivity to sustain income levels

position on the corresponding date at 106.99 BCM and the average of last 10 year’s storage of 110.42 BCM (Figure III.2).

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. According to experts, the decline in share of cooperatives in total farm credit is a cause for concern and needs to be corrected,

Although, the government is making continued efforts to create awareness about **crop insurance** schemes by the Extension Division of implementing States in coordination with the insurance companies, penetration is poor, just about 23 per cent of the total number of farmers covering about 22 per cent of the gross crop area (45.6 million hectares)¹⁸. State governments are also being regularly persuaded to increase the crop insurance coverage including notifying more crops under crop Insurance schemes. Ten private General Insurance Companies have been empanelled along with Agriculture Insurance Company (AIC) of India Ltd for implementation of Modified National Agricultural Insurance Scheme (MNAIS) and Weather Based Crop Insurance Scheme (WBCIS) components scheme of NCIP¹⁹.

Figure III.2: Irrigation water storage in major reservoirs (as on Nov 26, 2015)



Overall Assessment: Reduced availability of water, moderate increase in commodity prices and continued increase in wage costs will challenge the farm sector to raise productivity to sustain income levels

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 (NFSA) in various states 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 NFSA came into force with effect from July 5, 2013, under which two-third population of the country will be provided foodgrains at highly subsidized rates of Rs 2 per kg for wheat, Rs 3 per kg for rice and Re 1 per kg for coarse grains. Although the government had expected that the Act will be

¹⁸http://agricoop.nic.in/imagedefault/credit/Rpt_pkm2.pdf

¹⁹<http://agricoop.nic.in/imagedefault/whatsnew/ncipletter.pdf>

implemented in all the States/UTs latest by September, 2015 and beneficiaries will start receiving highly subsidized wheat and rice under the PDS System, implementation has been delayed in several states. The government expects more and more States/UTs will shift as early as possible to NFSA implementation from the older TPDS pattern

The expected improved performance of the economy this year and the increased purchasing power due to hike in salaries of government employees, etc. are 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 Side Bottlenecks

Grain storage situation has improved considerably following construction of new storage facilities and declining food grain stocks with the government due to a decline in government procurement and increased offtake through PDS. Total storage capacity available with FCI for storage of foodgrains as on October 31, 2015 is 36.7 million tonnes. New storage warehouses are being constructed with Plan funds and also under Public Private Partnership (PPP) mode.

However, poor logistics, inadequate cold storage facilities, and lack of processing facilities continue to hurt supply and availability of food items such as pulses and 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.²⁰ Another bottleneck facing Indian agriculture is a non-transparent agricultural marketing system, which leads to wide intra-regional price disparities and wide price fluctuations.

The government's off again on again policy to bring pulses, potato and onions etc. under the ambit of Essential Commodities Act and storage controls alone is unlikely to improve the supply situation and taming prices of these foods items without corresponding improvements in the market infrastructure, logistics, and cold storage facilities. Realizing this, the government is now focusing on resolving these issues. As a first step, the government has decided to create a national market for agricultural produce through an electronic platform. Following the successful Amul Model of milk procurement and distribution by setting up farmer cooperatives, which created the white revolution in India, the National Dairy Development Board (NDDB) is planning to expand the Amul Model to pulses, which will bring in a change in the entire value chain of pulses and maximise gains for the farmers by offering them the right prices.

As per data on sector-wise Foreign Direct Investment (FDI) inflows maintained by the Department of Industrial Policy & Promotion (DIPP), Government of India, during April 2000 to June 2015, FDI inflows in the agriculture services has been US \$ 1,764 million (Rs.8747.4 crore) which is higher than the FDI inflows into sectors like textiles, mining and electronics, but lower as compared to computer software and hardware, telecommunications, automobiles etc. In agriculture machinery, FDI inflows during the above period has been US \$ 418.65 million. To attract more FDI in agriculture sector, 100% FDI has been allowed in coffee, rubber, cardamom, palm oil tree and olive oil tree plantations, besides tea plantation in which FDI has already been allowed. However, FDI in retailing still remains a contentious issue due to its likely negative repercussion on the livelihood of small domestic retail stores (kirana stores). A Consolidated FDI Policy Notification²¹ issued by the DIPP

The expected improved performance of the economy this year and the increased purchasing power due to hike in salaries of government employees, etc. are expected to generate increased demand for high value products.

Total storage capacity available with FCI for storage of foodgrains as on October 31, 2015 is 36.7 million tonnes.

²⁰<http://www.nccd.gov.in/PDF/ChallengeColdChain-Development.pdf>

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.

Minimum export price (MEP) of onion was hiked by \$275 per tonne to \$700 per tonne on August 25.

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.

lays out modalities for FDI in various sectors, including agriculture and related activities. Contract farming is also becoming an increasingly important aspect of agribusiness, whether products are purchased by multinationals or by smaller companies. The Reserve Bank of India (RBI) wants the government to facilitate contract farming in India and to exempt fruits and vegetables from agri procurement laws to improve food productivity. The central bank has also called for better supply chain logistics by setting up cold chains and processing facilities to reduce wastage²².

At present farm land leasing is not popular in India due to legal lacuna in most states. However, an expert group formed in August under NITI Aayog, successor to India's Planning Commission, plans to finalise a national level land leasing law, which could free up the market for leasing farm land in India²³. States will be free to chart out their own acts based on the broader structure of the model law. In India, where farm holding size is shrinking²⁴, thus enabling to take the benefits of economy of scale, this new initiative will prove to be blessing.

III.6 Trade Environment

Since our last report, there has been no major changes in the tariff and non-tariff restrictions on domestic international trade, as listed below:

- 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. However, the Indian Oil Palm Developers Association (<http://opdpa.com/>) has recently requisitioned the government to hike import duty on palm oil to 45 per cent to safeguard the interest of palm growing farmers in the country. 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 (MEP) 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. However, with larger supplies and producers blaming for lower price realization in the absence of exports, the government lowered the MEP of onions to \$400 per tonne effective December 11. The MEP was abolished on December 24, 2015.
- 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 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.

²¹http://dipp.nic.in/English/policies/FDI_Circular_2015.pdf

²²https://www.rbi.org.in/scripts/BS_SpeechesView.aspx?Id=736

²³http://niti.gov.in/content/view_blogs_arch.php?blog=1

²⁴<http://agcensus.nic.in/document/ac1011/reports/air2010-11complete.pdf>

- To ensure timely payment of cane dues in the current sugar season, the Government has decided to provide a production subsidy @ of Rs. 45 per tonne of cane crushed to offset cane cost and to make Indian sugar more competitive in the world market. The subsidy will be paid directly to the farmers on behalf of the mills and be adjusted against the cane price payable to the farmers towards state governments established Fair Remunerative Price (FRP). Last year, the government was paying a direct export subsidy to mills, which was objected by major sugar producing countries in the WTO forum.

III.7 External Factors

External factors continue to remain less conducive to agricultural exports this year as last year due to better global production outlook and large carryover stocks for most traded commodities by India such as wheat, rice, maize, and soybean/soybean meal, except in the case of sugar. In the global market, bearish sentiment for sugar is turning bullish. Sugar prices have shot up 35 per cent in the last three months because of heavy rainfall in Brazil that has slowed down cane harvest. The ongoing dry weather is likely to harm Brazil's next cane crop. Recent recovery in global sugar prices and weaker rupee should support Indian sugar exports. However, recent weakening Indian rupee exchange rate against U.S. dollar will prove disadvantageous for consumers of major food items such as vegetable oils and pulses.

To ensure timely payment of cane dues in the current sugar season, the Government has decided to provide a production subsidy @ of Rs. 45 per tonne.

Recent recovery in global sugar prices and weaker rupee should support Indian sugar exports.



PART IV

Commodity Outlook Assessment

IV.1 Wheat

IV.1.1 Wheat production outlook a concern

Although wheat sowing has picked up lately after a slow start, as of mid-December area sown at 23.9 million hectares is 3 million hectares behind last year's sowing for the corresponding period. Final 2014-15 wheat harvested area was 30.4 million hectares, implying around 3 million hectares was sown during mid-December through January last year. Reasons attributed for the slow progress of wheat sowing this year are: poor soil moisture levels due to a weak monsoon and delayed harvest of kharif crops such as rice and sugarcane in major producing State of Uttar Pradesh. While Rajasthan has reported an increase in wheat acreage, lower area has been reported from Uttar Pradesh, Madhya Pradesh, Gujarat, Maharashtra and Haryana. The optimum window of opportunity for wheat sowing (mid-October through November) is over. Although sowing could continue until the first week of January, mainly in areas considered marginal where farmers plant wheat after harvesting sugarcane, the delayed planting could hurt productivity as the crop will be exposed to high temperatures at the critical grain filling stage. Lack of winter rains is also a matter of concern. Assuming total wheat planted area this year will be around 28 million hectares, yield will be close to a five year average of 3,050 kg/ha, and assuming normal weather through harvest, 2016 (MY 2016-17) wheat production is forecast at around 85 million tonnes. However, there is a marginal downward risk as the final yield will be influenced by weather conditions through harvest such as surface temperature at critical growth stages and rains and hails during harvest time.

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, as untimely heavy rains hit the crop at harvest time. The government official production estimates were continuously revised 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 change²⁵, which could have serious implications in the future. Hence there is need to develop varieties and agronomic practices, which could moderate the impact of climate change.

IV.1.2 Consumption declines

Based on food balance sheet analysis, wheat consumption (estimated as residual in the food balance sheet) in MY 2015-16 is forecast to decline by 1.7 per cent to 90.0 million tonnes due to lower production. There is likely to be an increase in feed use of wheat due to lower quality of harvested wheat in some states, offset by decline in food consumption. 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. There are also reports of low wheat

Assuming total wheat planted area this year will be around 28 million hectares, yield will be close to a five year average of 3,050 kg/ha, and assuming normal weather through harvest, 2016 (MY 2016-17) wheat production is forecast at around 85 million tonnes.

There is likely to be an increase in feed use of wheat due to lower quality of harvested wheat in some states, offset by decline in food consumption.

²⁵<http://www.int-res.com/abstracts/cr/v59/n3/p173-187/>

Assuming a government procurement of 27 million tonnes in MY 2016-17 and an average monthly offtake of 2.8 million tonnes per month through the PDS and other channels, government wheat stocks are forecast to plummet to 10 million tonnes by April 1, 2017, the lowest since 2007-08.

Regarding future outlook, wheat prices are likely to remain firm until the next harvest in April 2016.

flour use by the noodle industry. Furthermore, open market availability of wheat 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 per cent) compared to 29.2 per cent in MY 2014-15. (Table IV.1.1). Assuming a government procurement of 27 million tonnes in MY 2016-17 and an average monthly offtake of 2.8 million tonnes per month through the PDS and other channels, government wheat stocks are forecast to plummet to 10 million tonnes by April 1, 2017, the lowest since 2007-08.

Table IV.1.1: Govt. Operations in Wheat

Marketing Year (Apr-Mar)	Beginning stocks MMT	MSP Rs. per MT	Govt Procurement MMT	PDS Offtake per Month MMT*	Exports MMT	PDS Issue Price Rs. Per tonne			Ending Stocks MMT
						APL	BPL	AAY	
2003-04	15.60	6,300	15.8 (24.0)	2.03		6,100	4,150	2,000	6.9
2004-05	6.90	6,300	16.8 (23.3)	1.41		6,100	4,150	2,000	4.1
2005-06	4.10	6,400	14.8 (21.6)	1.39		6,100	4,150	2,000	2.0
2006-07	2.00	6,500	9.2 (13.3)	0.99		6,100	4,150	2,000	4.7
2007-08	4.70	8,500	11.1 (14.6)	1.02		6,100	4,150	2,000	5.8
2008-09	5.80	10,000	22.7 (28.9)	1.24		6,100	4,150	2,000	13.4
2009-10	13.40	10,800	25.3 (31.4)	1.87		6,100	4,150	2,000	16.1
2010-11	16.10	11,000	22.5 (25.9)	1.93		6,100	4,150	2,000	15.3
2011-12	15.30	11,700	28.3 (32.0)	2.02	0.100	6,100	4,150	2,000	20.0
2012-13	20.00	12,850	38.1 (40.1)	2.51	2.973	6,100	4,150	2,000	24.2
2013-14	24.20	13,500	25.1 (26.8)	2.35	2.647	6,100	2,000**	2,000**	17.8
2014-15	17.80	14,000	28.0 (29.2)	2.43	0.327	6,100	2,000**	2,000**	17.2
2015-16(E)	17.20	14,500	28.1 (31.6)	2.70	0.000	6,100	2,000**	2,000**	15.0
2015-16(F)	15.00	15,250	27.0 (31.8)	2.80	0.000	6,100	2,000**	2,000**	10

* 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.

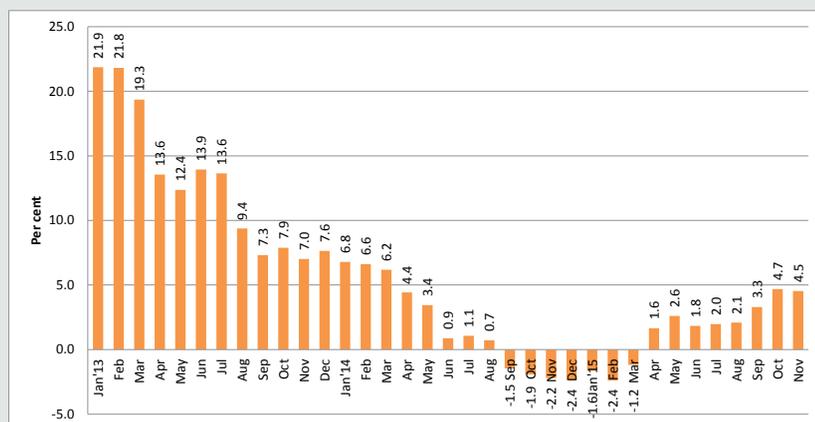
IV.1.3 Wheat price inflation firms

Year-on-year wheat price inflation measured by wholesale price index weakened 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 4.5 per cent in November 2015, the latest month for which data is available, reflective of lower production in 2015 and quality problems (Figure IV.1.1). 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 percent 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. Wheat price in MY 2016-17 is also likely to remain firm due to expected lower production, increase in the MSP, and lower stocks with the government. Private

traders and flour millers are also likely to remain more active in purchasing wheat from the domestic market in MY 2016-17, which could result in lower wheat procurement by the government.

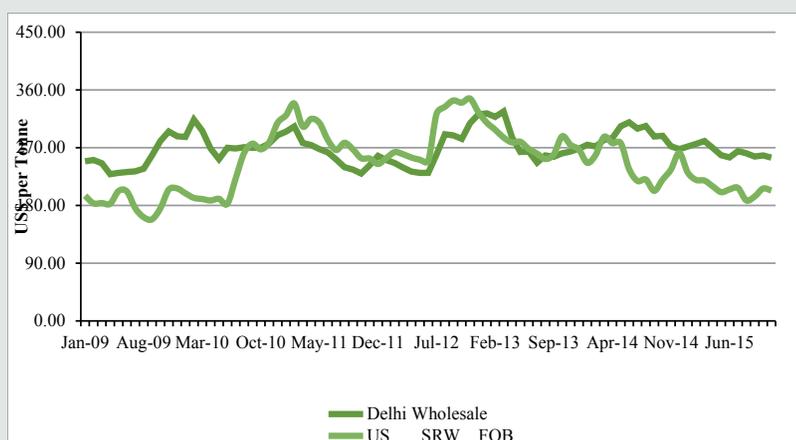
Figure IV.1.1: Wheat Price Inflation: WPI (%YOY)



IV.1.4 Export Outlook Bleak

Indian wheat exports in MY 2016-17 will face increased competition from record or near record global supplies, particularly with major exporting countries. Lower wheat stocks with the government combined with low global prices due to a global glut (Figure IV.1.2) should discourage wheat export allocation from government stocks in MY 2016-17. Limited wheat exports on private account may take place. 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, which however would fetch lower prices due to ample global supplies of feed quality wheat and feed grains. As stated earlier, India imported around 1 million tonnes of high-quality milling wheat (mostly from Australia) to blend with domestic supplies following quality issues with domestic harvest due to heavy rains and hails at harvest time. (According to official trade figure imports during April through September were 430,000 tonnes). However, the Indian Government slapped a 10 per cent wheat import duty in August, which slowed imports. A further increase in import duty to 25 per cent subsequently has cut off imports.

Figure IV.1.2 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.

Private traders and flour millers are also likely to remain more active in purchasing wheat from the domestic market in MY 2016-17, which could result in lower wheat procurement by the government.

Indian wheat exports in MY 2016-17 will face increased competition from record or near record global supplies, particularly with major exporting countries.

With larger offtake of wheat through PDS and other programs expected during October 2015 through March 2016, government wheat stocks are projected to decline to around 15.0 million tonnes on April 1, 2016.

The stocks-to-use ratio is also likely to dip to 16.4% in MY 2015-16, the lowest in recent years.

IV.1.5 Stocks Down

Government wheat stocks on April 1, 2015, were 17.2 million tonnes, a marginal decline over a year ago level. Stocks on December 1, 2015, were 26.9 million tonnes, compared to 26.7 million tonnes a year ago, well above the government's desired buffer+ strategic stocks (Figure IV.1.3). With larger offtake of wheat through PDS and other programs expected during October 2015 through March 2016, government wheat stocks are projected to decline to around 15.0 million tonnes on April 1, 2016, about 2 million tonnes below the stocks on April 1, 2015 (Table IV.1.1). Furthermore, because of the government's relaxed wheat procurement norms for MY 2015²⁶, a significant share of wheat now in government inventory is of poor quality. The stocks-to-use ratio is also likely to dip to 16.4% 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 forecast to further decline by the end of MY 2016-17 at around 10 million tonnes, but still above the stipulated buffer + strategic stocks of 7.46 million tonnes on April 1. The supply demand balances for wheat in MY 2016-17 is summarized in Table IV.1.2.

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

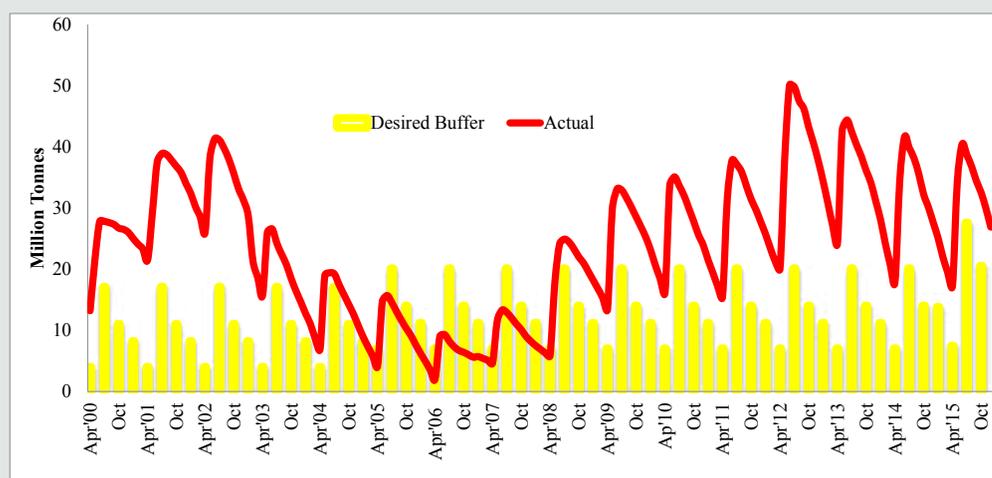


Table IV.1.2: Supply and Demand Balance for Wheat (1000 metric tonnes)

	2014-15 (Apr-Mar)	2015-16 E (Apr-Mar)	2016-17 F (Apr-Mar)
Production	95,850	88,940	85,000
Beginning Stocks 1/	17,834	17,221	15,000
Imports	32	1,000	50
Total Supply	1,13,716	1,07,161	1,00,050
Exports	3,380	540	300
Food Use	87,115	86,321	82,750
Seed, Feed, Waste, Other	6,000	5,000	7,000
Total Use	93,115	91,321	89,750
Ending Stocks 1/	17,221	15,000	10,000
Total Distribution	1,13,716	1,07,161	1,00,050
Stocks to Use Ratio %	18.5	16.4	11.1

1/ Stocks with the government only; E – Estimate; F- Forecast

²⁶See: <http://fci.gov.in/procurements.php?view=91>

Assessment

Based on progressive planting report through early December 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 at 85 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 a large quantity of sub-normal quality wheat in government inventories, 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 effectively blocked additional imports. Wheat exports in MY 2016-17 are likely to remain negligible due to likely lower production and lower stocks. 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 government procurement with anticipated larger private trade purchases government-held wheat stocks are likely to fall to around 15.0 million tonnes on April 1, 2016, about 2 million tonnes below the stocks on April 1, 2015. MY 2016-17 ending Stocks are forecast to fall to 10 million tonnes and stocks-to-use ratio is projected to decline to the lowest level in recent years at 11.1 percent, compared to 16.4 percent in 2015-16.

IV.2 Rice

IV.2.1 Rice production in 2015-16 production likely to be lower

IV.2.1.1 Rabi rice production outlook

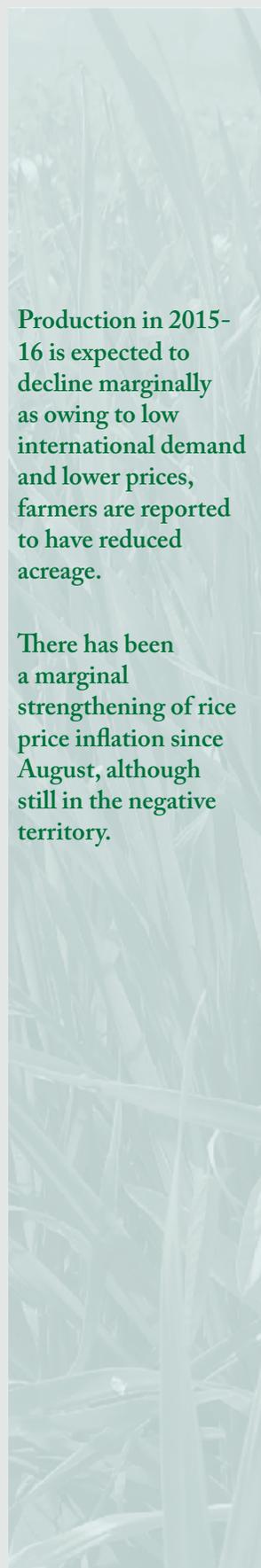
Rabi/summer rice is normally sown during November to February and harvested during March to June. The area under rabi rice in recent years has ranged from 4.0 to 4.8 million hectares (about 7 to 9 per cent of total rice area in the country). It is known by different names in different states: Boro in 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 offset shortfall in kharif rice production owing to poor monsoon.

However, below normal south-west and post-monsoon monsoon rains, particularly in some major rabi rice growing states of southern and eastern India and low water table in major reservoirs could negatively impact rabi/summer rice planting. To make matters worse, a deep depression of high intensity formed over the Bay of Bengal hit the Tamil Nadu coast November 10 causing torrential rains, particularly in some coastal districts of Tamil Nadu and Andhra Pradesh. Its impact on rabi rice production is yet to be assessed. Winter rains through mid-December in major rabi rice growing states of eastern India has also been significantly below normal²⁷.

Progressive sowing data compiled by the Ministry of Agriculture as on December 18, 2015, shows rabi rice planting this year lagging behind corresponding period of last year's level by over 12 percent at 1.18 million hectares. Last year, rabi rice for the full season was 4.03 million hectares. Thus although rabi rice planting is expected to continue, total rabi rice coverage is likely to be marginally lower at around 3.8 million hectares. Assuming a normal rabi yield of 3.2 tonnes per hectare (rabi season yield is typically larger than the normal kharif season rice yield of about 2.3 tonnes per hectare due to assured irrigation availability), 2015-16 rabi rice production is forecast at 12.3 million tonnes.

Although rabi rice planting is expected to continue, total rabi rice coverage is likely to be marginally lower at around 3.8 million hectares.

²⁷http://www.imd.gov.in/pages/rainfall_seasonal_cumulative_weekly.php



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.

There has been a marginal strengthening of rice price inflation since August, although still in the negative territory.

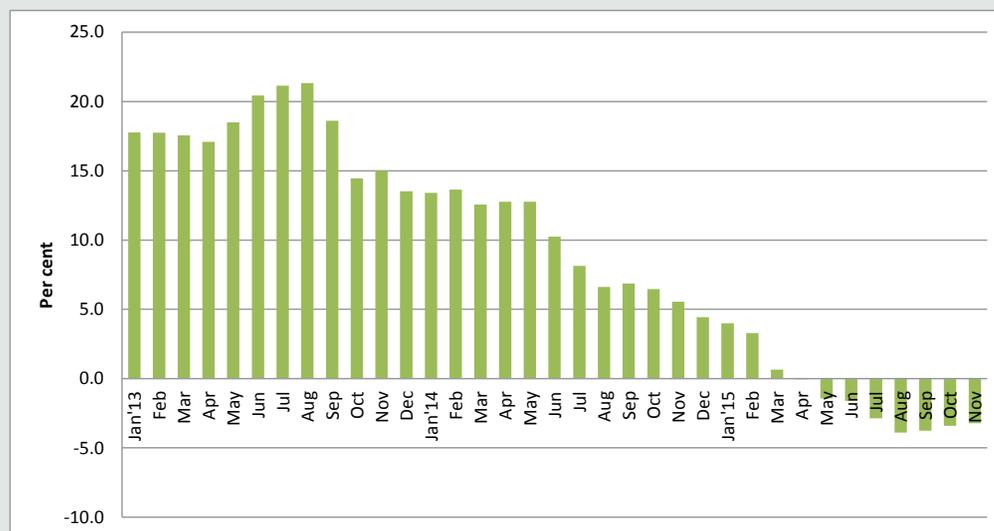
Despite a 14 per cent deficiency in 2015 monsoon season (June–September) rainfall from the LPA (compared to 12 per cent in 2014), the Ministry of Agriculture’s 1st AE²⁸, 2015-16, kharif rice production was 90.61 million tonnes, compared to the 2014-15 4th AE of 90.86 million tonnes, close to NCAER forecast 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. Thus total MY 2015-16 (Oct–Sep) rice production is forecast at around 103 million tonnes (90.61 kharif + 12.3 rabi), compared to 104.8 million tonnes (90.86 million tonnes kharif + 13.94 million tonnes rabi) in 2014-15.

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 tonnes²⁹, 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 1509³⁰, 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.2.2 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.2.1), 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. However, there has been a marginal strengthening of rice price inflation since August, although still in the negative territory.

Figure IV.2.1: % 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 97.4 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

²⁸http://eands.dacnet.nic.in/Advance_Estimate/1stAdv2015-16Eng.pdf

²⁹<http://www.airea.net/page/60/statistical-data/state-wise-basmati-rice-production>

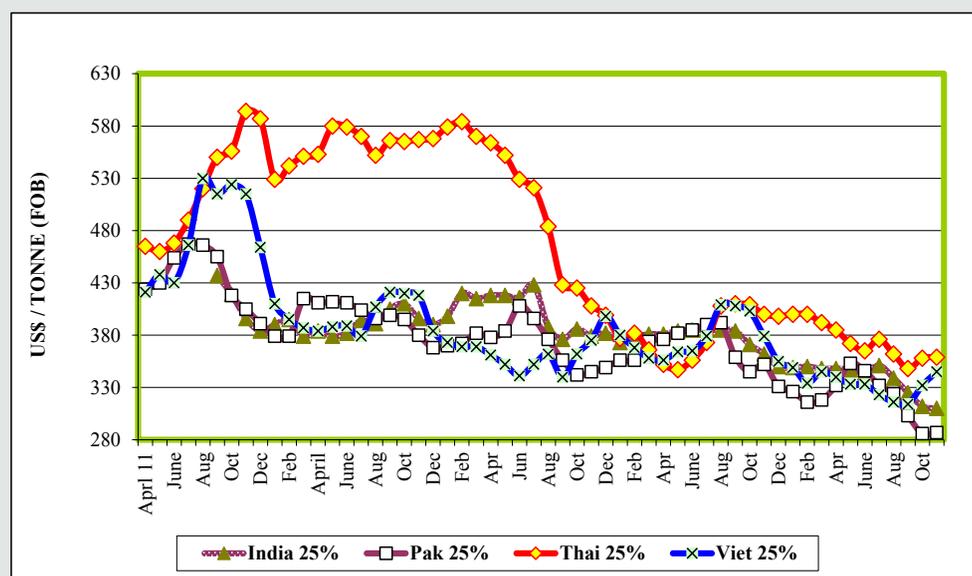
³⁰<http://www.rkmp.co.in/category/news-events-optional-tags/pusa-1509>

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 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. Consumption of branded rice is growing in both southern and northern India.

IV.2.3 Exports likely to decline in 2015-16

India's rice exports in MY 2014-15 (Oct-Sep) are estimated to have increased to 11.8 million tonnes from 10.1 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) website³¹. 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. An increased rice exports from Myanmar has also posed additional competition for Indian non-basmati rice export in recent years. 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 restricted basmati rice imports through tariff and non-tariff barriers. However, Iran's recent decision to end curbs on imports imposed to protect domestic farmers during the harvest, may benefit Indian exports. Indian rice export price for low quality 25% broken has declined in recent months while prices of Thai and Vietnamese rice of similar quality has edged up due to concerns about lower production (Figure IV.2.2). Currently we forecast MY 2015-16 Indian rice exports at 9.0 million tonnes.

Figure IV.2.2: Rice Export Price – India vis-a-vis International



Source: FAO.

³¹<http://agriexchange.apeda.gov.in/index/reportlist.aspx>

Rice consumption in MY 2015-16 is forecast to increase to 100 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.

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.

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.

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

Table IV.2.1 show the government operations in rice over the past several years. Table IV.2.2 shows the rice balance sheet in 2013-14, 2014-15 and forecast for 2015-16.

Table IV.2.1: Government operations in Rice

MY	Beginning Stocks MMT	Govt Procurement MMT	MSP for Paddy Rs. Per MT		PDS Monthly Offtake *	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	2.1	8,300	5,650	3,000	6.1
2004-05	6.1	24.7 (29.7)	5,600	5,900	1.7	8,300	5,650	3,000	4.8
2005-06	4.8	27.6 (30.1)	5,700	6,000	2.0	8,300	5,650	3,000	6.0
2006-07	6.0	25.1 (26.9)	6,200	6,500	2.1	8,300	5,650	3,000	5.5
2007-08	5.5	28.7 (29.7)	7,450	7,750	2.1	8,300	5,650	3,000	7.9
2008-09	7.9	34.1 (34.4)	9,000	9,300	2.1	8,300	5,650	3,000	15.3
2009-10	15.3	32.0 (35.9)	10,000	10,300	2.3	8,300	5,650	3,000	18.4
2010-11	18.4	34.2 (35.6)	10,000	10,300	2.5	8,300	5,650	3,000	20.4
2011-12	20.4	35.0 (33.2)	10,800	11,100	2.8	8,300	5,650	3,000	23.4
2012-13	23.4	34.0 (32.3)	12,500	12,800	2.7	8,300	5,650	3,000	23.1
2013-14	23.1	31.9 (29.9)	13,100	13,450	2.4	8,300	3000**	3000**	18.6
2014-15	18.6	32.1 (30.6)	13,600	14,000	2.6	8,300	3000**	3000**	14.2
2015-16	14.2	30.0 (29.0)	14,100	14,500	3.2	8,300	3000**	3000**	8.2

* 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.

IV.2.4 Stocks to dip

Government rice stocks on December 1, 2015, stood at 23.5 million tonnes (including 13.6 million tonnes of milled rice equivalent of paddy), 7.8 per cent more than a year ago level of 21.8 million tonnes³², (which included 11.2 million tonnes of milled rice equivalent of paddy) Despite a marginal increase in rice procurement in MY 2014-15, estimated at 32.2 million tonnes, the ending stocks in MY 2014-15 drooped to 14.2 million tonnes due to larger offtake of rice through the PDS estimated at around 2.6 million tonnes per month, 8.3 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 though 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 of 10.5 million tonnes (Table IV.2.2). 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. As on December 18, the government has procured 16.4 million tonnes of rice, slightly ahead of last year and official sources believe total rice procurement this year will reach the target of 30 million tonnes.

³²<http://fci.gov.in/stocks.php?view=21>

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

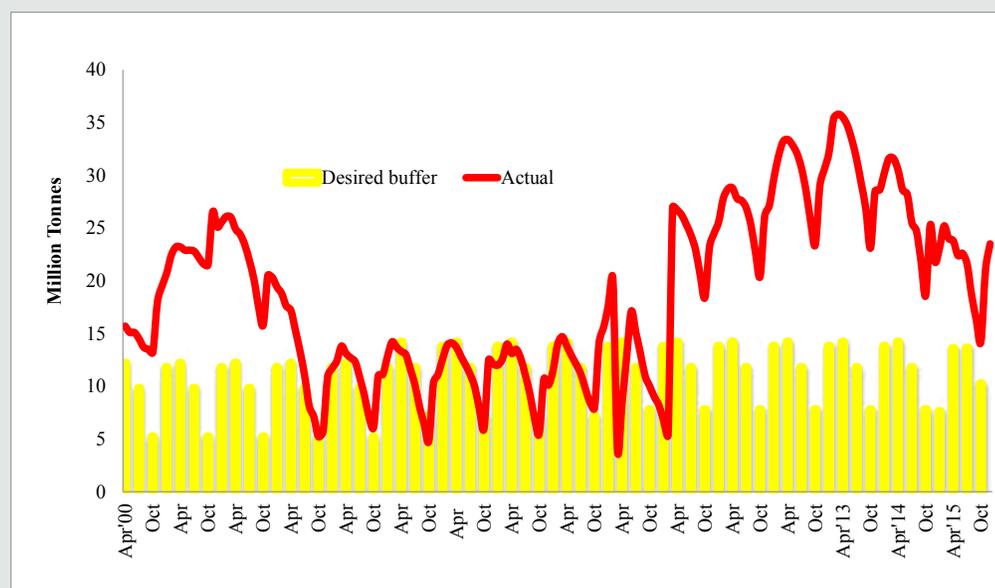


Table IV.2.2: Supply and Demand Balance for Rice (1000 Tonnes)

	Oct-Sep	Oct-Sep E	Oct-Sep F
Production	1,06,650	1,04,800	1,03,500
Beginning Stocks	23,100	18,600	14,200
Imports	0	Neg	0
Total Supply	1,29,750	1,23,400	1,17,700
Exports	10,300	1,17,000	9,000
Food Use	98,250	95,500	98,500
Seed, Feed, Waste, Other	2,600	2,000	2,000
Total Use 1/	1,00,850	97,500	1,00,500
Ending Stocks	18,600	14,200	8,200
Total Distribution	1,29,750	1,23,400	1,17,700
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

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 12.2 million tonnes due to poor post monsoon-rains and lower water table in reservoirs, taking total 2015 -16 rice production to 103.0 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 11.8 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.3 Coarse Grains

IV.3.1 A significant decline likely in 2015-16 production

The rabi outlook for coarse grains which include maize, barely and jowar is not promising. However, official planting data as on December 18, 2015, shows sowing this year is ahead of last year's 4.78 million hectares by 9.7 per cent at 5.25 million hectares, 97 per cent of the average area sown on that date. Most of the increase is in jowar. In 2014-15, total area sown to rabi coarse grains was 5.5 mha (jowar – 3.31 mha, maize - 1.52 mha, and barley - 0.67mha). Although total planted area under rabi coarse grain crops this year may equal or exceed last year's level, considering the poor post-monsoon and north-east monsoon rainfall so far, it is doubtful whether the yield this year will match last year's record yield of 2 tonnes per hectare for rabi coarse grains as a whole (maize – 4.3 tonnes/ha; barley – 2.43 tonnes/ha, and jowar – 0.86 tonnes/ha). Assuming a five year average per hectare rabi yield for this year (maize – 4 tonnes/ha, barley – 2.5 tonnes/ha, and jowar – 0.80 tonnes/ha), total rabi coarse grain production in 2015-16 is projected at 10.6 million tonnes (jowar – 3 mmt; maize – 6 mmt; barley - 1.6 mmt) against 2014-15 estimate of 11.9 mmt (jowar - 3 mmt; maize – 7.3 mmt; barley – 1.6 mmt).

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 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 2009-10. 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). Thus maize, the major coarse grain produced and traded in India and globally is projected at 21.5 million tonnes (15.5 mmt kharif and 6 mmt rabi) against 2014-15 production of 23.7 million tonnes (16.4 mmt kharif and 7.3 mmt rabi) and jowar production at 4.87 million tonnes (1.87 mmt kharif and 4 mmt rabi)

Coarse grain production has shown a mixed growth trend over the past years (Figure IV.3.1). 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. 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.

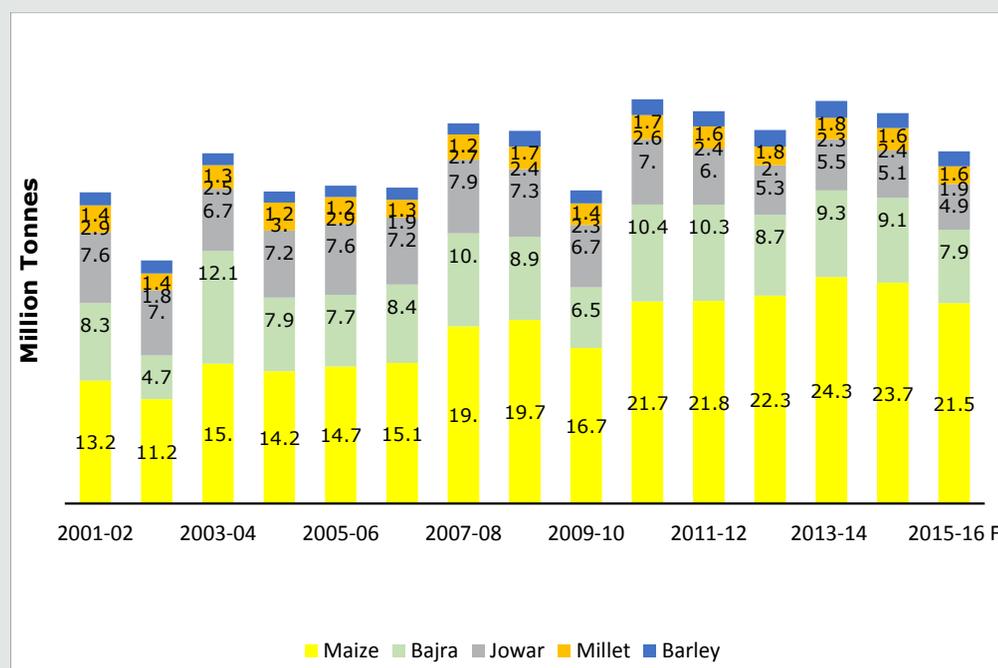
IV.3.2 Consumption and Price

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. With shortage of feed staring at it, the poultry industry has asked the government to remove duties on import of maize (and soya) to bail out the poultry farmers. The government is considering supplying damaged wheat at cheaper prices to the feed industry to overcome the shortage of maize and its higher prices.

There is also a scope to expand production, consumption and export of other coarse grains such as jowar and ragi, with the rising global awareness of nutritive benefits of these grains. The Millets Network of India (MINI), an umbrella organisation of activists and organisations promoting millets in the country, has said it would be much effective and cheaper to go for millets rather than encouraging the costly crops. Millets require less water and virtually no power. MINI has exhorted the government to give incentives for farmers who grow millets. In Karnataka, a major millet growing state, the state government has reportedly announced a bonus of Rs. 5,000 an acre for millets farmers. As millets are making a slow but steady comeback, especially among the middle-class, due to its high nutritive value, the International Crop Research Institute for Semi-Arid Tropics (ICRISAT) located in Andhra Pradesh has said it would have a special focus on millets, which is considered a 'smart crops', and life-line of small and marginal farmers in semi-arid areas.

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.

Figure IV.3.1 Coarse Grain Production Trend



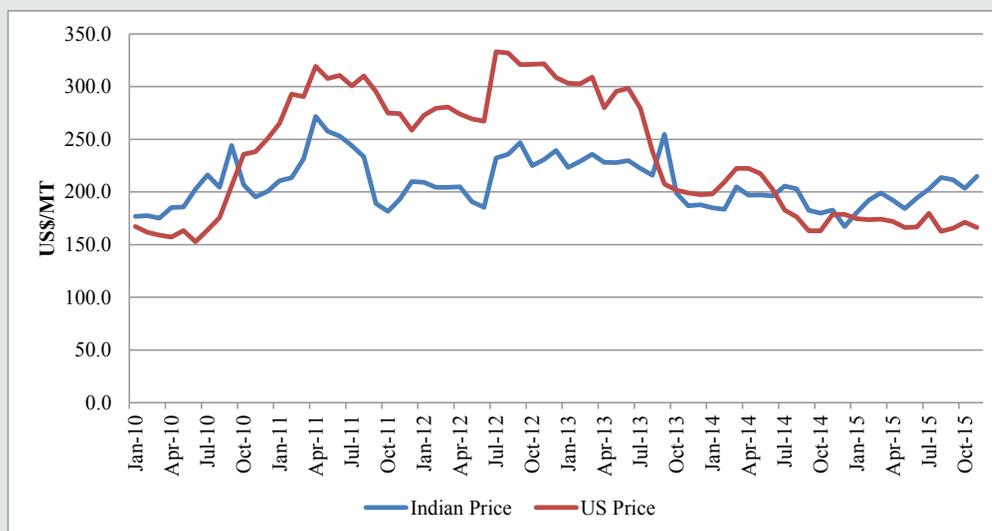
A significant decline in Indian maize production in 2015-16 due to poor monsoon rains could result in further strengthening of Indian prices and lower exports in MY 2015-16.

IV.3.3 Export Outlook Bleak

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 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 400,000 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 (1000 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	21,500
Imports	20	20	50
Domestic Availability	24,830	24,690	22,550
Exports	3,800	1,000	800
Domestic Utilisation	20,030	22,690	21,250
Closing Stocks	1,000	1,000	500

Assessment

A significantly below normal rainfall this year in major coarse growing regions negatively impacted the mostly rain-fed kharif maize 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 6 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 21.5 million tonnes, a decline of 9.0 per cent from 2014-15. Total coarse grain production is projected at 38.5 million tonnes against last year's 41.8 million tonnes. 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. With shortage of feed staring at it, the poultry industry has asked the government to remove import duty on maize to bail out poultry farmers.

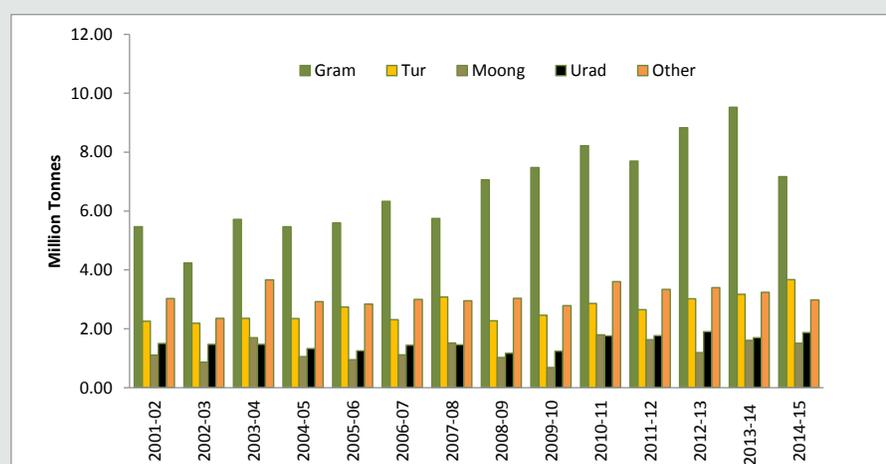
IV.4 Pulses

IV.4.1 Production expected to decline further

Progressive planting report of 2015-16 rabi crops as on December 18, 2015, shows rabi pulse planting this year is marginally ahead of planting during the corresponding period of last year at 12.37 million hectares about 200,000 hectares more. The increase in area was partly in response to higher MSP announced for rabi pulses by the government and special focus on increasing pulse production. However, considering the poor post-monsoon rains this year, rabi pulse production is not likely to outperform last year's production of 11.6 million tonnes due to likely lower yields. We forecast rabi pulse production this year at 11 million tonnes.

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). Thus total pulse production in 2015-16 is projected at 16.6 million tonnes, against the 2014-15 production of 17.2 million tonnes. Pulse production trend by type of pulses is shown in Figure IV.4.1.

Figure IV.4.1: Trend in Pulse Production by Type



Progressive planting report of 2015-16 rabi crops as on December 18, 2015, shows rabi pulse planting this year is marginally ahead of planting during the corresponding period of last year.

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.

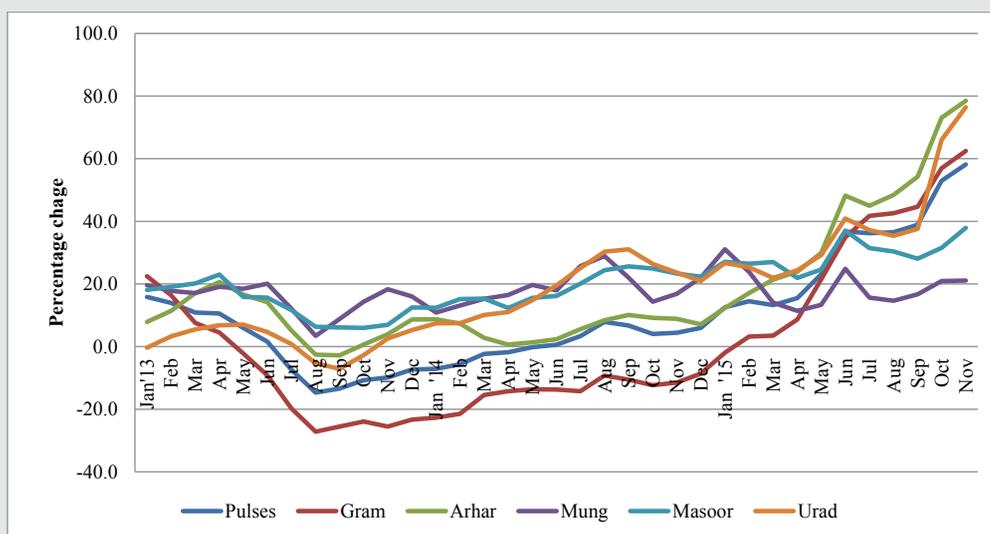
The pulse price inflation was ignited mostly by arhar (pigeon pea or tur), gram (chickpea) and masur (lentil) although prices of other pulses also hardened modestly.

IV.4.2 Consumption 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 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.

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 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 58.2 per cent (measured by wholesale price index) in November 2015 (Figure IV.4.2). 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.4.2. Wholesale Price Inflation Trend in Pulses (% change in 2015 over 2014)



To contain the rise in the prices of pulses, a major source of protein in the Indian diet, the central government initiated various policy measures with urgency. 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, confiscating pulses from private importers (under the provisions of the Essential Commodities Act) and selling it in the open market at reasonable prices, building up buffer stocks of pulses and allocating large funds for price stabilization operation which will be used to buy pulses directly from farmers.

IV.4.3 Pulse imports to climb a record high

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.4.3). Most of the increase in pulse imports was in dry peas, imported mostly from Canada and the U.S.

Pulse imports in MY 2015-16 (Apr-Mar) through September has reached 1.04 million tonnes compared to 1.97 million tonnes during the corresponding period of 2014-15. However, with aggressive buying in recent months and in coming months, imports may exceed last year's level to 5.5 million tonnes in 2015-16. 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 ASSOCHAM³³, 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. Shows the demand supply balance for pulses

Figure IV.4.3. Pulse Imports by Type (000 Tonnes)

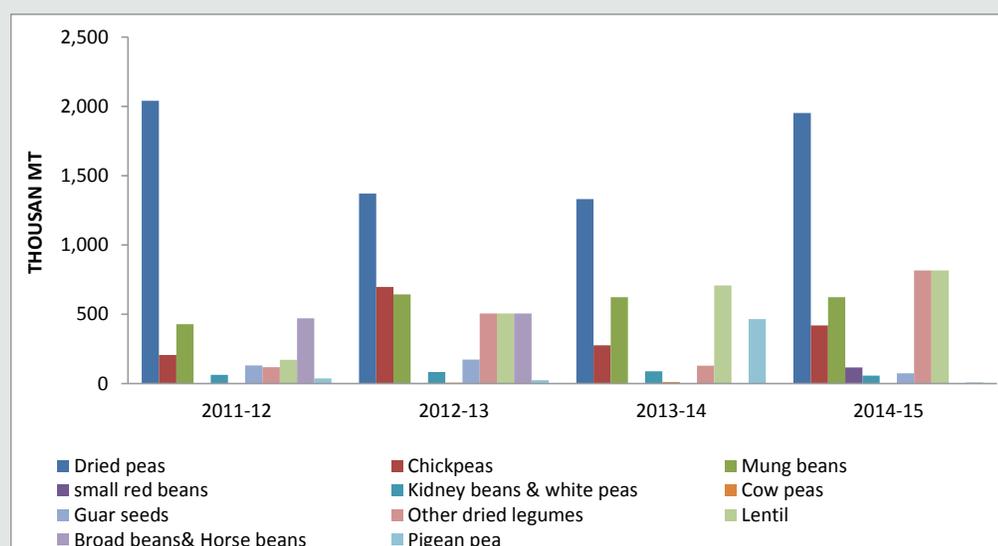


Table IV.4.1. Demand and Supply Balance Sheet for Pulses (000 tonnes)

Total pulses	2012-13	2013-14	2014-15 E	2015-16 F
Production	18,340	19,250	17,200	16,600
Imports	4,020	3,655	4,640	5,500
Total supply	22,360	22,905	21,840	22,100
Total Export	200	200	100	50
Domestic Use	22,160	22,705	21,740	22,050
Total utilization	22,360	22,905	21,840	22,100
% imports to production	22	19	27	33

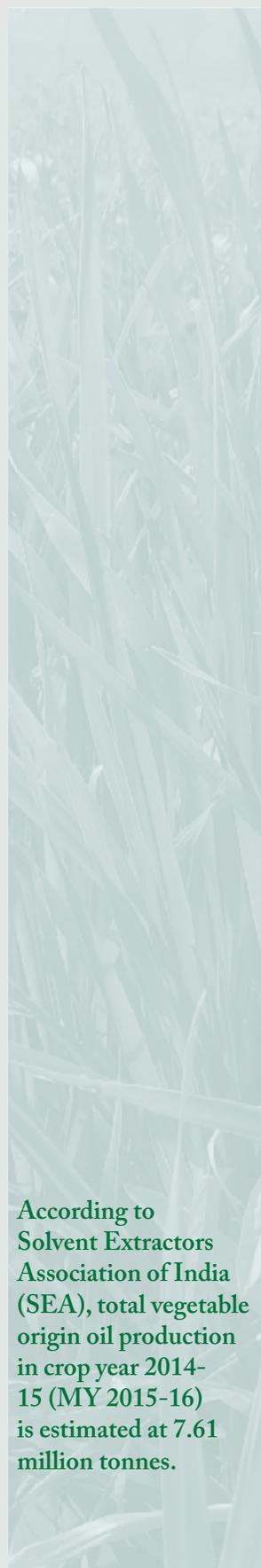
E-estimate; F- forecast

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 decline in rabi pulse production as well, although area sown until mid-December is marginally ahead of last year's level. Currently we forecast total MY 2015 -16

³³<http://www.assochem.org/newsdetail.php?id=5300>

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.



According to Solvent Extractors Association of India (SEA), total vegetable origin oil production in crop year 2014-15 (MY 2015-16) is estimated at 7.61 million tonnes.

pulse production at 16.6 million tonnes, marginally 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 increased demand-supply gap, as production in major exporting countries will not be adequate to meet Indian demand.

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 growing pulses, due to production and price risk, supply and price shocks will recur. 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 moderate 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. In the meantime government may wish to consider government-to-government imports of pulses from major exporting countries such as Myanmar, Canada, and Australia.

IV.5 Oilseeds and Edible Oils

IV.5.1 Rabi Oilseeds Production set to Decline

Deficient post monsoon rains (20 per cent below the LPA during the period from October 1 to December 16), higher than normal temperature and poor-subsoil moisture at sowing time in major rabi oilseed growing regions resulted in a decline in winter oilseed planting, comprising mostly of rapeseed and mustard. According to the latest data available from the Ministry of Agriculture, progressive sowing of rabi oilseeds as on December 18 is 6.92 million hectares, down by 5.8 per cent from 7.34 million hectares during the corresponding period of last year, with most of the decline in rapeseed/mustard. Progressive sowing of various rabi oilseed crops available as on December 11, 2015, with the corresponding sowing a year ago is summarised in Table IV.5.1.

Table IV.5.1: Sowing of Rabi Oilseeds (million hectare)

Crop	11 th Dec-14	11 th Dec -15	% Change
Rapeseed and Mustard	6.221	5.728	-7.9
Groundnut	0.304	0.226	-25.7
Safflower	0.080	0.092	+15.0
Sunflower	0.215	0.235	+9.3
Sesame	0.044	0.023	-47.7
Linseed	0.219	0.210	-4.1
Total Oilseeds	7.118	6.568	-6.5

Source: Weather Watch Reports, Ministry of Agriculture.

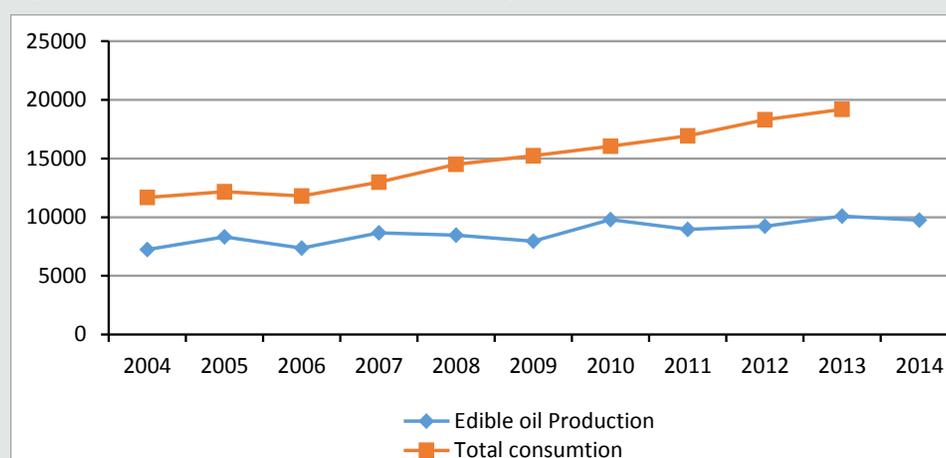
According to Solvent Extractors Association of India (SEA), total vegetable origin oil production in crop year 2014-15 (MY 2015-16) is estimated at 7.61 million tonnes (including rice bran oil, and other solvent extracted oils from expeller cakes, castor oil, linseed oil, etc.), compared to 8.38 million tonnes in MY 2014-15³⁴, a decline of around 9 percent.

³⁴<http://www.seaofindia.com/cdn/gallery/9/e02be96cb6c222540dae9ec12ff604d4.pdf>

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 18.0-19.0 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 (Figure IV.5.1)

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



Source: The Solvent Extractors' Association of India.

From November 2014 to May 2015, vegetable oil price inflation and domestic oilseed prices have remained in the negative territory due to larger imports although domestic oilseeds price has strengthened after May 2015. (Figure IV.5.2). In November 2015, the price inflation off oilseeds as a group has peaked to 6.9 per cent, with rapeseed/mustard and soybeans recording the largest increase. Prices of vegetable oils as a group has also strengthened. 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.

AS per the recommendations of the Cabinet Committee on Economic Affairs, 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.

Year-on-year consumption growth rate has varied depending on availability and price.



As expected the soybean prices took correction during October but they are rebound in November.

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

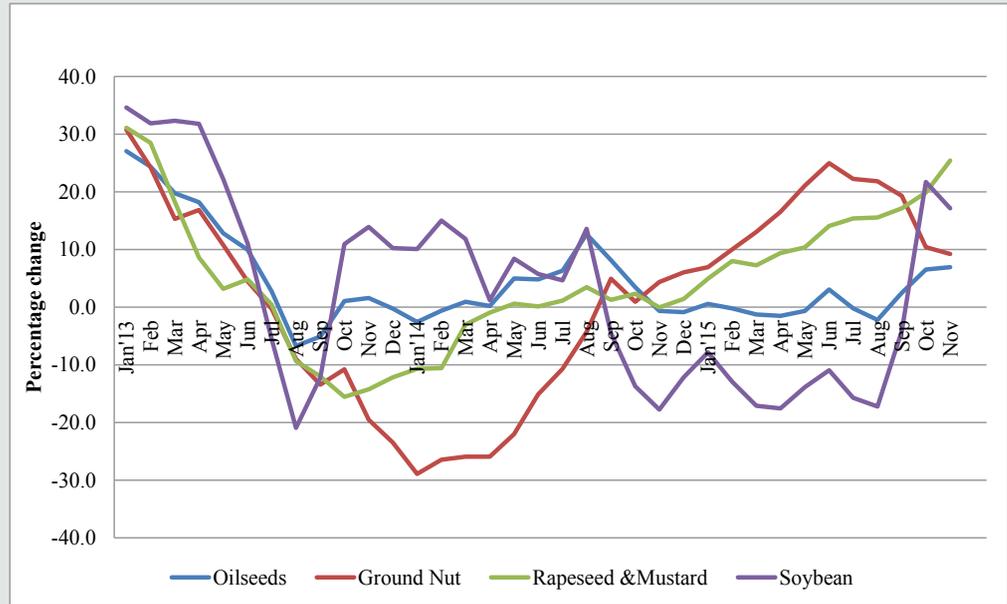
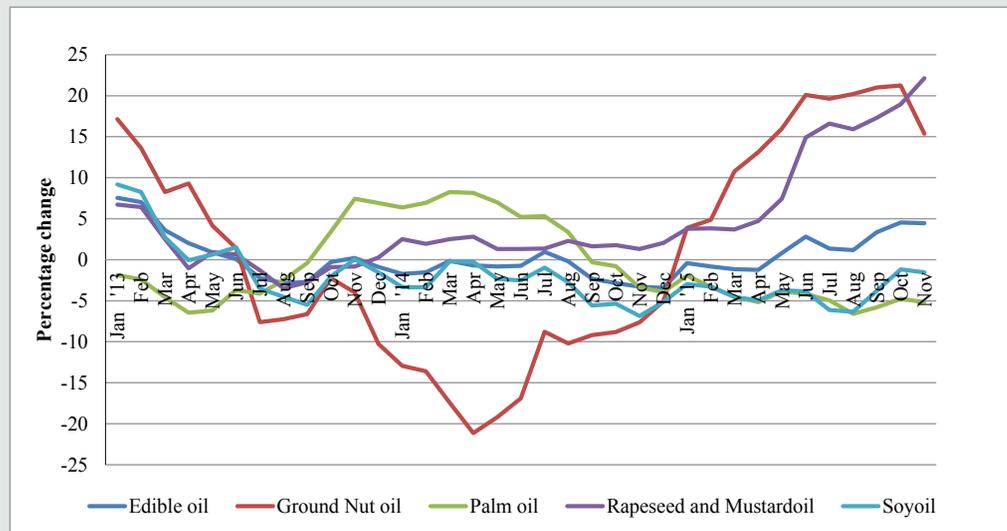


Figure IV.5.3: Vegetable Oil Price Inflation (YoY % Change)



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 Figures IV.5.4 to IV.5.8. Arrivals of soybean are gradually falling and they eased in November compared to the arrivals in October. Lower arrivals are attributed to the fall in soybean production. As expected the soybean prices took correction during October but they are rebound in November. The arrivals of groundnut in Rajkot, a major groundnut producing region in Gujarat has increased resulting in decrease in prices.

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

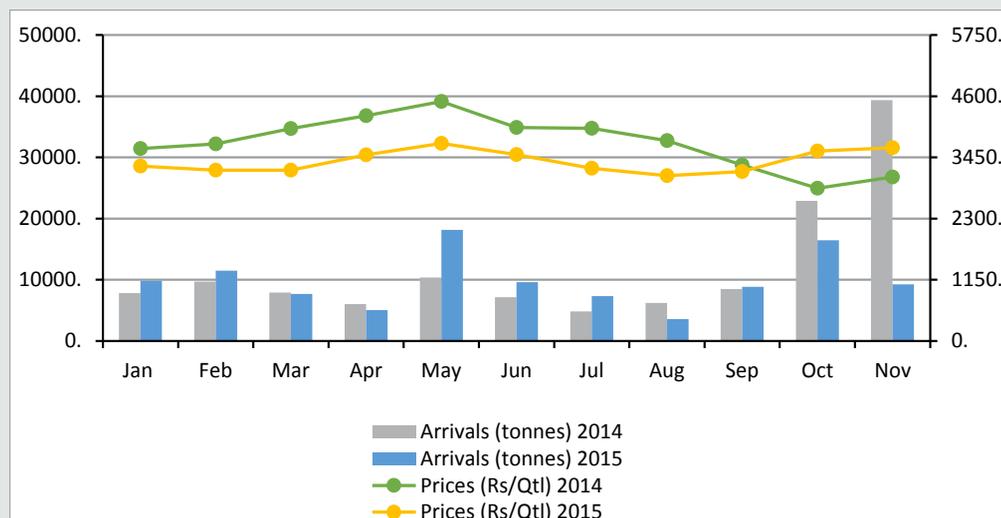


Figure IV.5.5: Arrival and Prices of Soybean in Kota market in Rajasthan

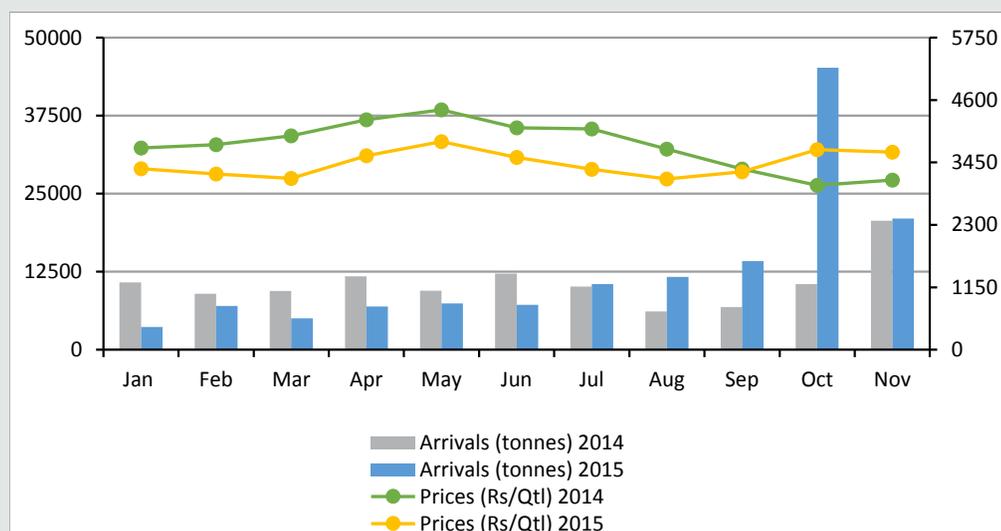
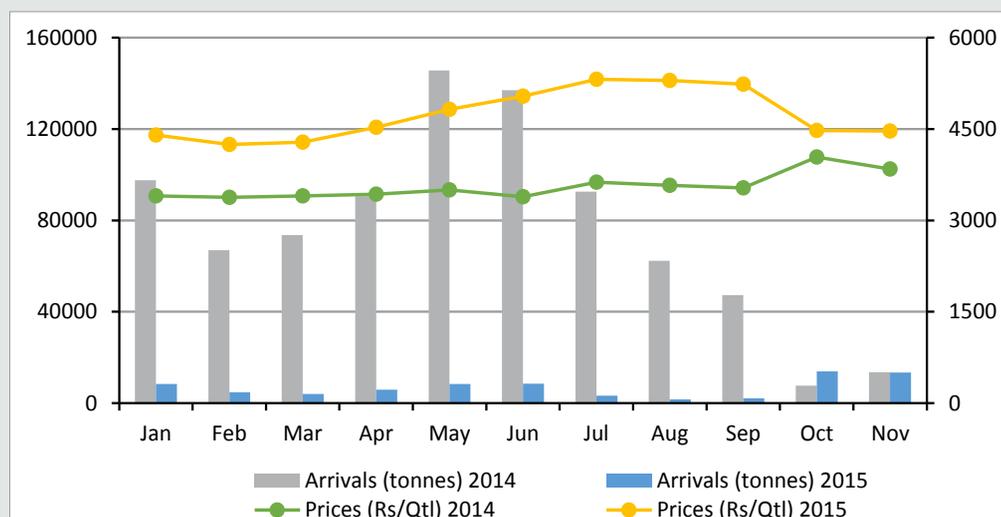


Figure IV.5.6: Arrival and Prices of Groundnut in Gondal market in Gujarat



Rapeseed prices are facing pressure currently as demand for oils is moderate which has led to week seed buying from stockists and mills in addition to the advancing rapeseed sowing under way.

The supplies of rapeseed/mustard in key spot market across Rajasthan are falling due to the lean season; they are lower than the corresponding period last season due to the lower production. The supplies are expected to fall further in coming weeks.

Rapeseed/mustard seed prices in key spot market across Rajasthan witnessed a firm trend. Rapeseed prices are facing pressure currently as demand for oils is moderate which has led to week seed buying from stockists and mills in addition to the advancing rapeseed sowing under way. It is expected that the approaching winter season may uplift the demand for oils is and is likely to lend some support to the market. Also, concerns that a sharp drop in temperature in the northern parts of the country could damage rapeseed crop supporting prices.

Figure IV.5.7: Arrival and Prices of Mustard in Nagar Market in Rajasthan

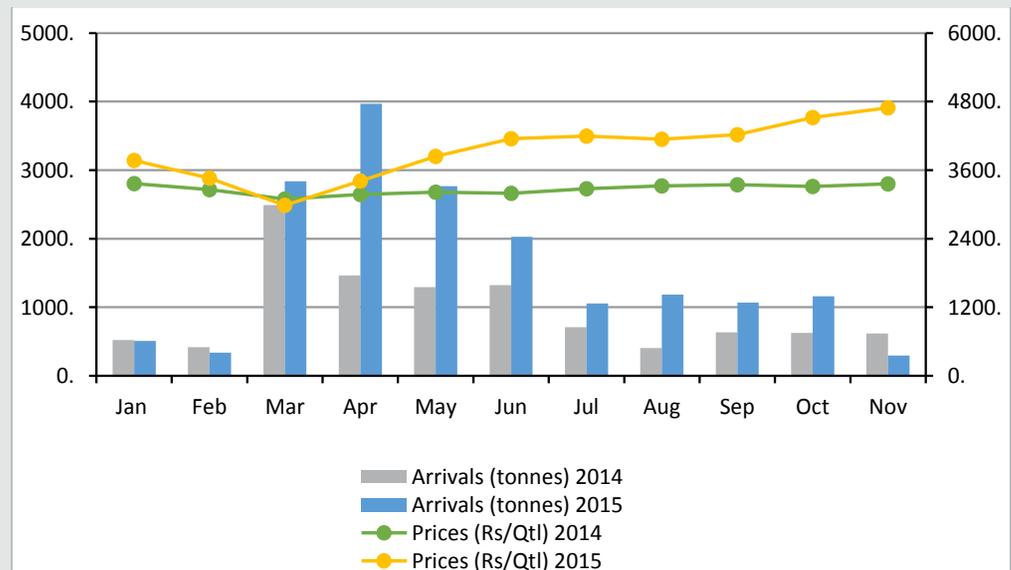
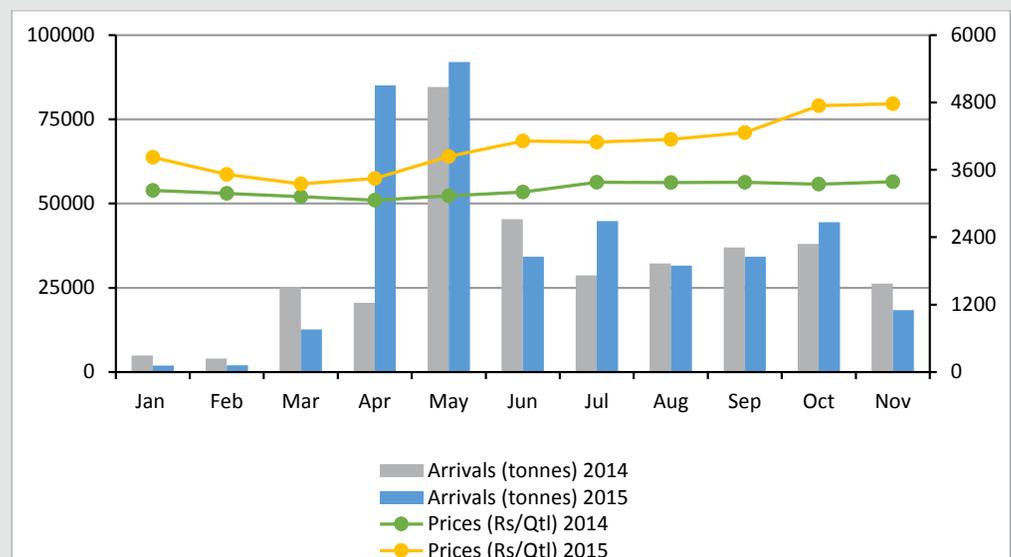


Figure IV.5.8: Arrival and Prices of Mustard in Alwar Market in Rajasthan



IV.5.4 Trade

Palm oil makes up 70 per cent of the country’s total vegetable oil imports. India meets 60 per cent of its annual vegetable oil demand of 17-18 million tonnes through imports. Excess supply of vegetable oils in the global market at low prices and zero export duty by

Indonesia and Malaysia, combined with lesser availability of domestic oils in view of fall in domestic oilseed production (following deficit rains in last two years) boosted MY 2014-15 (November- October) imports to a record level. Besides, domestic demand remained robust during the year on account of rise in local consumption of edible oil due to increase in per capita consumption and population growth.

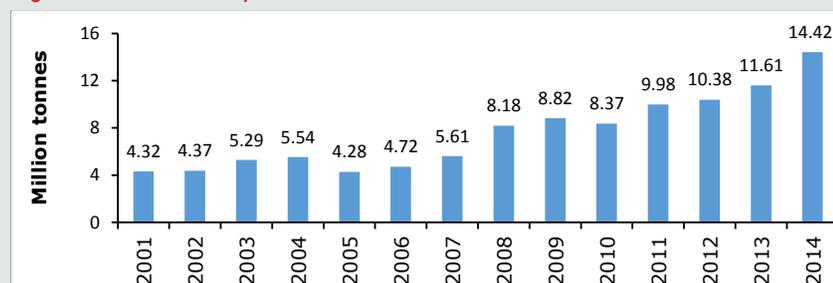
According to data compiled by the SEA, the MY 2014-15 (November – October) edible vegetable oils imports have set a record of 14.42 million tonnes compared to 11.62 million tonnes in 2013-14³⁵ (Figure IV.5.9). Imports by type in MY 2014-15 with MY 2013-14 imports in parentheses in million tonnes (Figure IV.5.10) are: crude palm oil – 7.72 (6.25); RBD palm olein – 1.66 (1.58); soybean oil – 2.99 (1.95); sunflower seed oil – 1.54 (1.51); rapeseed oil – 0.36 (0.20). Additionally, India imported about 190,000 tonnes of non-edible oils, which include palm fatty acid, palm kernel oil, RBD palm stearin, etc.

Imports of edible oils in November 2015, the first month of MY 2015-16, were 1.34 million tonnes compared to 1.15 million tonnes in November 2014, and 0.93 million tonnes in November 2013. November 2015 imports included about 860,000 tonnes of palm oil and RBD palm oil combined, 261,836 tonnes of soybean oil and 177,658 tonnes of sunflower seed oil. Non edible oil imports were 4,500 tonnes.

India imports palm oil mainly from Indonesia and Malaysia and a small quantity of crude soft oils, including soybean oil from Latin America. Sunflower oil is imported from Ukraine and Russia.

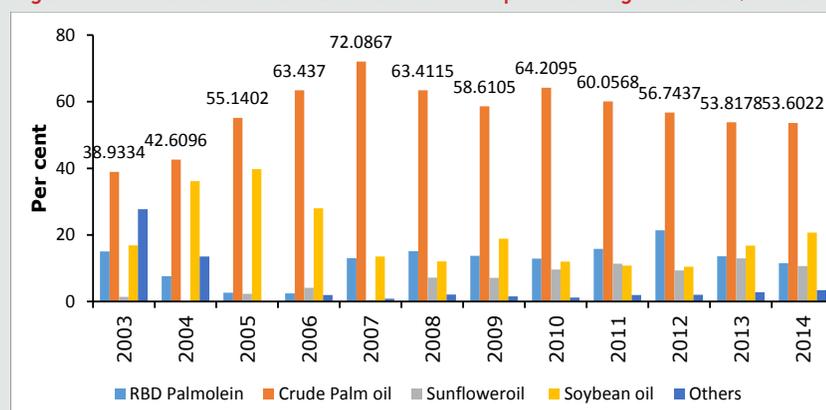
In view of lower domestic vegetable oil production this year, imports are expected to climb ever further unless the government hikes the import duty further. Currently we forecast imports at around 15 million tonnes.

Figure IV.5.9: Total Imports of Edible Oils (Nov-Oct)



Source: The Solvent Extractors' Association of India.

Figure IV.5.10: Share of Various Oils in Total Imports during Oil Years (Nov-Oct)



Source: The Solvent Extractors' Association of India.

³⁵<http://www.seaofindia.com/cdn/gallery/12/442ebbfdff63efe97094d4f6dcbd21e.pdf>

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In view of lower domestic vegetable oil production this year, imports are expected to climb ever further unless the government hikes the import duty further.

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 per cent.

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.

Table IV.5.2: Supply and Demand Balance for Vegetable Oils (000 Tonnes)

Particulars	2012-13	2013-14	2014-15	2015-16
	Oct-Sep	Oct-Sep	Oct-Sep	Oct-Sep
Beginning Stocks	1,413	1,472	1,194	1,425
Production	4,833	4,688	4,099	6,197
Imports	11,619	12,646	15,255	15,258
Total Supply	17,865	18,806	20,548	22,880
Exports	10	13	11	33
Industrial Dom. Consumption	633	685	725	895
Food Use Dom. Consumption	15,570	16,914	18,332	20,775
Domestic Consumption	16,383	17,599	19,057	21,670
Ending Stocks	1,472	1,194	1,480	1,177

Source: USDA.

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.

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 per cent and 20 per cent, 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. In yet another blow to the ailing edible oil industry, the Argentina government has removed export duty on soybean and soya oil to make their exports competitive and retain its share in global edible oil market where prices are falling.

Assessment

Due to below normal monsoon rains in 2014 and 2015, combined with other adverse weather factors such as poor subsoil moisture level, reduced irrigation availability, etc. has resulted in a significant decline in oilseed production in MY 2014–15 and 2015–16. Lower vegetable oil production combined with increasing consumption has resulted in record imports of vegetable oils in recent years, which according to the vegetable oil industry is proving to be detrimental for the domestic oilseed industry and oilseed farmers. The Argentina government has removed export duty on soybean and soya oil to make their exports competitive and retain its share in global edible oil market where prices are falling, which will encourage imports of soybean oil by India. There is, therefore, pressure for a further increase in import duty on vegetable oils, particularly unrefined vegetable oils. The industry is also requesting the government to reduce import duty on high oil bearing oilseeds such as rapeseed/mustard and sunflower seed, which will help increasing capacity utilization by domestic oilseed processors and permit larger exports of oil meal. On the positive side, larger vegetable oil imports due to low global prices, triggered by record production, has helped to contain vegetable oil price inflation and should help to moderate the price rise in coming months.

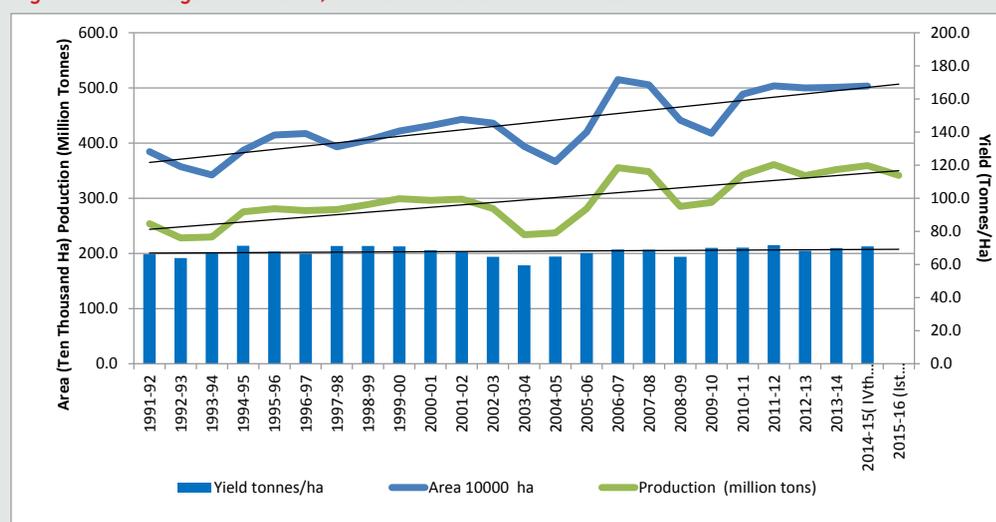
IV.6 Sugarcane and Sugar

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 sugarcane 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

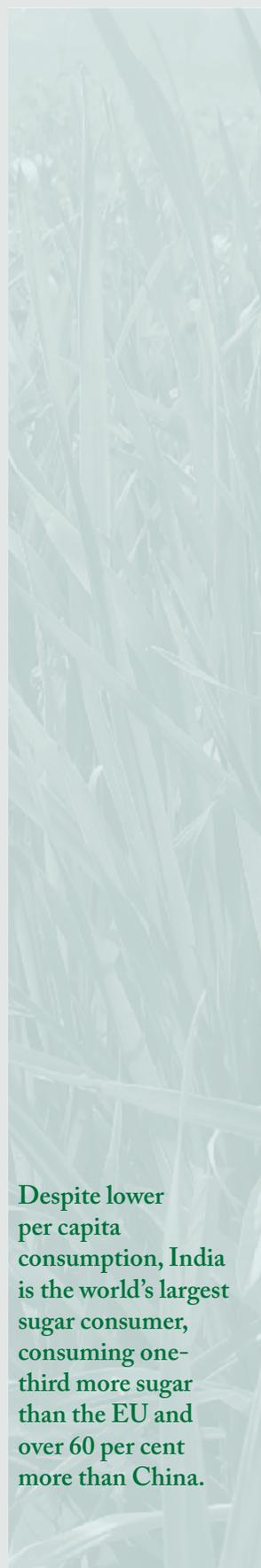


..... but only a marginal decline in sugar production

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 likely. Sugar production in the state is projected at 7.5 million tonnes in MY 2015-16.

As of mid-December 2015, sugarcane production has reached 4.79 million tonnes compared to 4.23 million tonnes during the corresponding period 2014, registering an increase of

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.

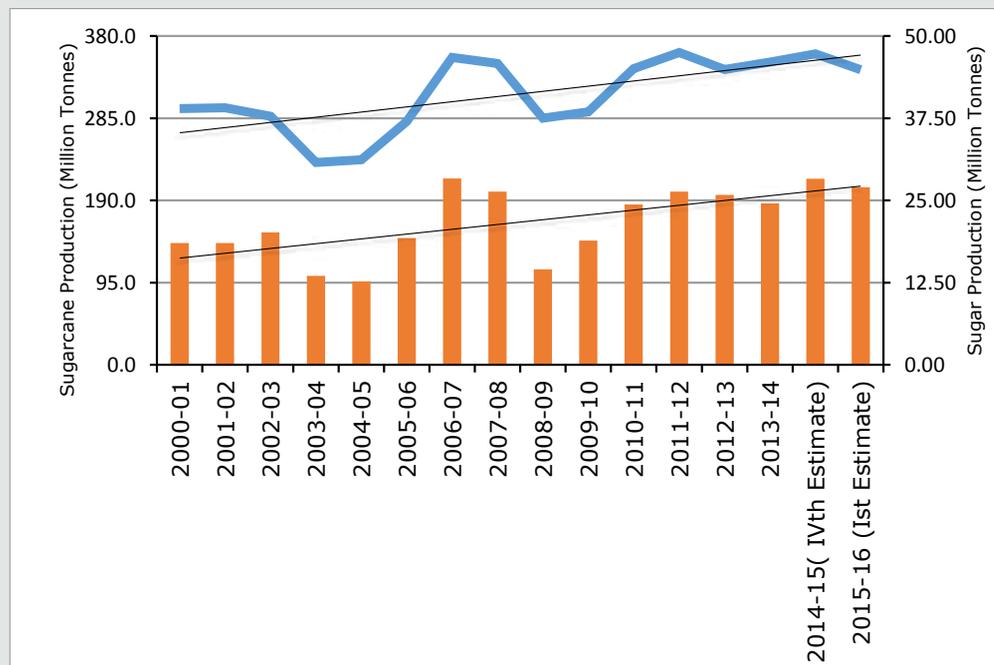


Despite lower per capita consumption, India is the world's largest sugar consumer, consuming one-third more sugar than the EU and over 60 per cent more than China.

over 13 per cent. Overall, till December 15, sugar production has been higher in most producing States, except in Andhra Pradesh and Telangana.

India's sugar production has increased from 19.1 million tonnes in TE 2002-03 to 26.62 million tonnes in TE 2015-16, including projections for 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 IV.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.

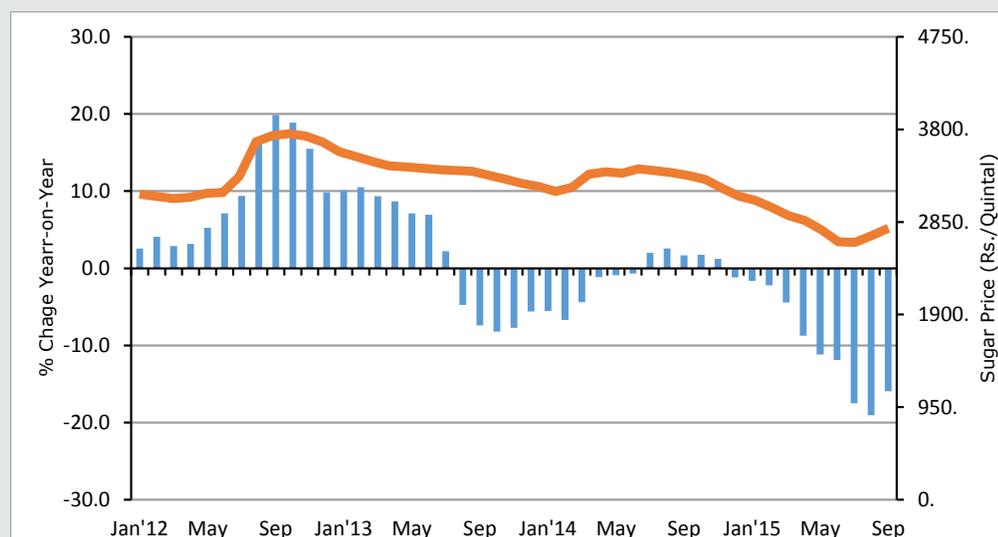
Reflecting the higher production and large stocks of sugar both domestically and globally, sugar prices have shown a downward trend in recent months. Year-on-year sugar price

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.6.3). 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. Figure IV.6.4 shows the FRP established in recent years. 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.

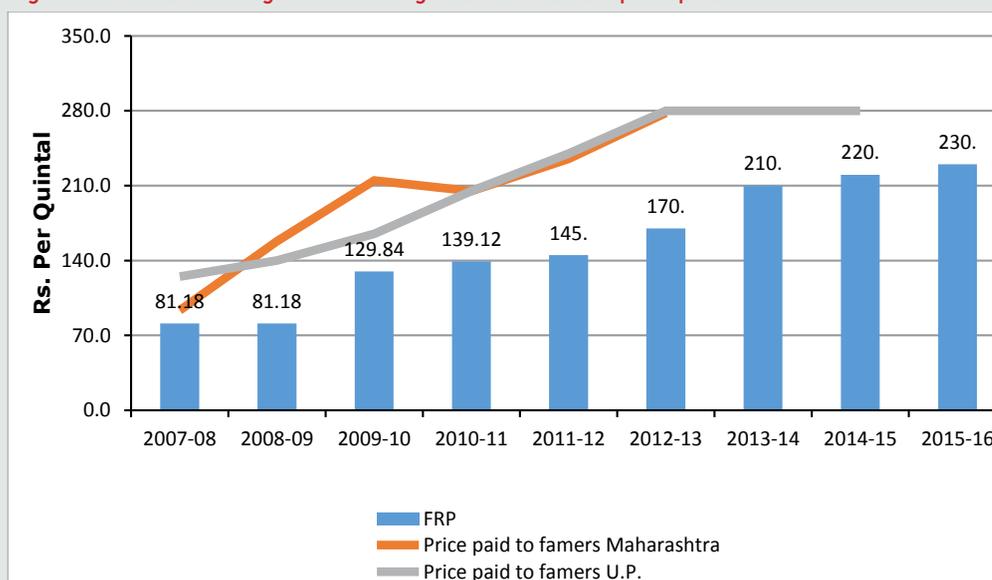
Figure IV.6.3: All India Sugar Price and Year-on-Year Change in WPI of Sugar



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.

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.

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



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.

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

IV.6.3 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.

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.

For the current sugar marketing year 2015-16, the government has allocated a Minimum Indicative Export Quota (MIEQ) of 4 million tonnes of sugar, to be allocated to each sugar mill proportionate to their production. To offset the increasing cost of production and to overcome criticism by major exporting countries on Indian government’s direct export subsidy program, and also to ensure timely payment of cane dues in the current sugar season, the government recently decided to provide a production subsidy at the rate of Rs. 4.50 per quintal of cane crushed to offset cane cost, with a total budgetary allocation of Rs.11.4 billion. This subsidy will be paid directly to the farmers on behalf of the mills and be adjusted against the cane price payable to the farmers towards FRP including arrears relating to previous years. The production subsidy is a performance incentive and will be provided to those mills which have exported at least 80 per cent of the targets notified under the MIEQ. As a further incentive to sugar mills the government has also fixed remunerative prices for Ethanol supplied for blending with petrol (Rs.42/litre). Blending targets under the Ethanol Blending Program (EBP) has been scaled up from 5 per cent to 10 per cent. The Government has also waived the excise duties on ethanol in the current sugar season resulting in Rs.5/ litre extra revenue realization to incentivize ethanol supplies. The government incentives, combined with strengthening global prices should result in larger exports from India in 2015-17, which according to some sources will be as high as 2 million tonnes. Indian sugar mills have so far signed deals to export 600,000 tonnes of sugar until mid-December and out of this nearly 300,000 have already been dispatched. The higher Indian exports will put pressure on global prices, but harden the local market and help mills pay farmers at the support levels set by the state for sugar cane.

IV.6.4 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. However, according to industry sources, India is likely to start the 2016-17 marketing year with 6.7 million tonnes of sugar, 26.4 per cent lower than at the beginning of the current sugar year, as rising exports and domestic consumption will reduce inventories.

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	3.0
Domestic Consumption	21.63	23.55	25.1	27.0
Ending Stocks	9.30	7.50	9.6	6.6

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 increasing domestic requirement of around 27 million tonnes and exports of 2-3 million tonnes. Hence no significant increase in domestic sugar prices is expected. The government has mandated sugar mills to export 4 million tonnes of sugar in MY 2015-16. To offset the increasing cost of production and to overcome criticism by major exporting countries on Indian government's direct export subsidy program, and to ensure timely payment of cane dues in the current sugar season, the government recently decided to provide a production subsidy at the rate of Rs. 4.50 per quintal of cane crushed to offset cane cost, with a total budgetary allocation of Rs.11.4 billion. As a further incentive to sugar mills the government has also fixed remunerative prices for Ethanol supplied for blending with petrol, raised blending targets under the Ethanol Blending Program (EBP) from 5 per cent to 10 per cent and also waived the excise duties on ethanol in the current sugar season. The government incentives, combined with strengthening global prices should result in larger exports from India in 2015-17, which according to some sources will be 2 to 3 million tonnes.

IV.7 Potato

IV.7.1 Area and Production trends

Potato ranks first in vegetables category in terms of production and a main commercial crop cultivated in India. India ranks fourth in area and second in production of potato after China. Nearly a third of world's potato is harvested in china and India. According to third

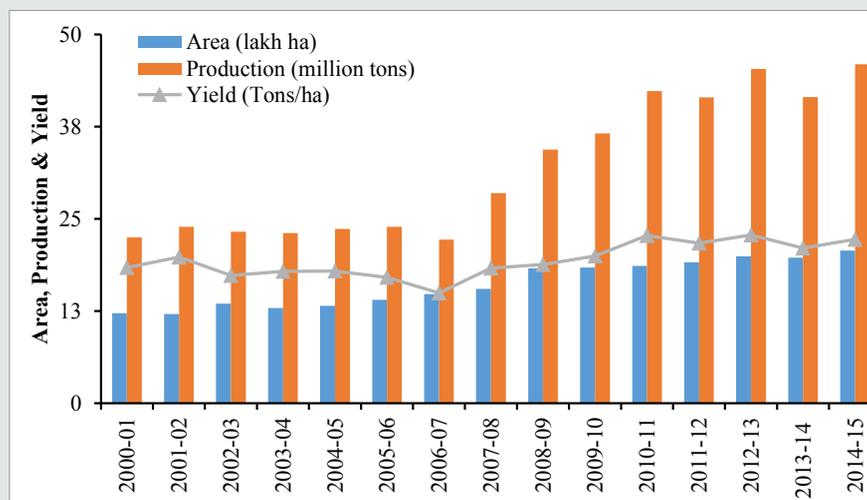
According to industry sources, India is likely to start the 2016-17 marketing year with 6.7 million tonnes of sugar, 26.4 per cent lower than at the beginning of the current sugar year, as rising exports and domestic consumption will reduce inventories.

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 increasing domestic requirement of around 27 million tonnes and exports of 2-3 million tonnes. Hence no significant increase in domestic sugar prices is expected.

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.

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, thereby registering a growth of 4.9 percent and 5.6 percent over the last year (Figure IV.7.1).

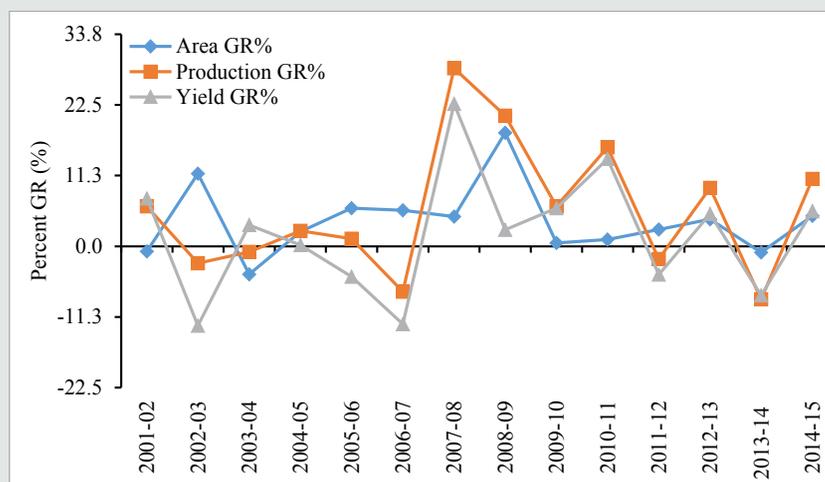
Figure IV.7.1: Area, Production and Yield of Potato in India



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

All India trends show that during 2000-01 to 2014-15, potato production grew at a compound annual growth rate of 5.2 per cent per year, while area and yield grew at 3.8 per cent and 1.4 per cent, respectively during the same period. The growth rates in production were much lower during 2000-01 to 2005-06, while from 2005-06 to 2010-11, potato production registered highest compound annual growth rate of about 12.1 percent. This jump was mainly on account of increased production levels in 2007-08 and 2008-09. The recent five years from 2010-11 onwards, however, registered moderate growth in production by just 2.1 percent till 2014-15, despite the fact that area grew by 2.7 percent during this period. One of the reasons for low production growth during this period had been negative growth in the productivity levels on an average. The year-wise growth trends are given in Figure IV.7.2.

Figure IV.7.2: Percentage Change in Area, Production and Yield of Potato



Source: Author's Calculation.

Nearly two-third of the potato production in 2014-15 is concentrated in three states: Uttar Pradesh, West Bengal and Bihar. Within this, the highest production in 2014-15 was in Uttar Pradesh (28.6 percent share), followed by West Bengal (26.2 percent) and Bihar (13.8 percent). The major potato producing states that have contributed to increased potato production in 2014-15 over 2013-14 are West Bengal, Madhya Pradesh, Gujarat and Punjab. Uttar Pradesh and Bihar reflects decline in potato production in 2014-15. The information on state-wide growth in area, production and yield according to 3rd advance estimates of 2014-15 is shown in Table IV.7.1.

Table IV.7.1: Y-o-Y % Change for Area, Production and Yield of Potatoes 2014-15

States	Area	Production	Yield
Uttar Pradesh	7.1	-4.9	-11.2
West Bengal	0.0	33.2	33.2
Bihar	0.2	-2.9	-3.1
Madhya Pradesh	23.6	31.2	6.2
Gujarat	33.4	30.7	-2.0
Punjab	2.3	2.5	0.2
All India	4.9	10.6	5.5

Source: Growth rates calculated on data taken from www.nhrdf.com

Note: 3rd advance estimates for 2014-15 and for 2013-14 final estimates taken.

IV.7.2 Supply and Demand

About 99 per cent of the potato production in India is consumed domestically. Potato production is likely to decline from 45.95 million tonnes in 2014-15 to 44.1 million tonnes in 2015-16. Exports, estimated at 433,000 tonnes in 2015-16, as a percentage of production, exports are expected to increase from 0.81 percent in 2014-15 to 0.98 per cent in 2015-16, but less than one per cent as observed in earlier year (Table IV.7.2). Potato imports are negligible.

Table IV.7.2: Potato Supply and Demand (1000 Tonnes)

	2009- 10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16
Production	36,580	42,339	41,483	45,343	41,555	45,951	44,100
Imports	0	0	0	0	0	0	0
Total Supply	36,580	42,339	41,483	45,343	41,555	45,951	44,100
Exports	97	198	193	163	221	374	433
Total Domestic Use	36,483	42,141	41,290	45,180	41,334	45,577	43,667
Exports as a % of Production	0.26	0.47	0.47	0.36	0.53	0.81	0.98
Domestic Use as a % of Total Supply	99.7	99.5	99.5	99.6	99.5	99.2	99.0

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

Nearly two-third of the potato production in 2014-15 is concentrated in three states: Uttar Pradesh, West Bengal and Bihar.

Potato production is likely to decline from 45.95 million tonnes in 2014-15 to 44.1 million tonnes in 2015-16.

Potato prices as measured by WPI shows significant decline in 2014-15 compared to previous year.

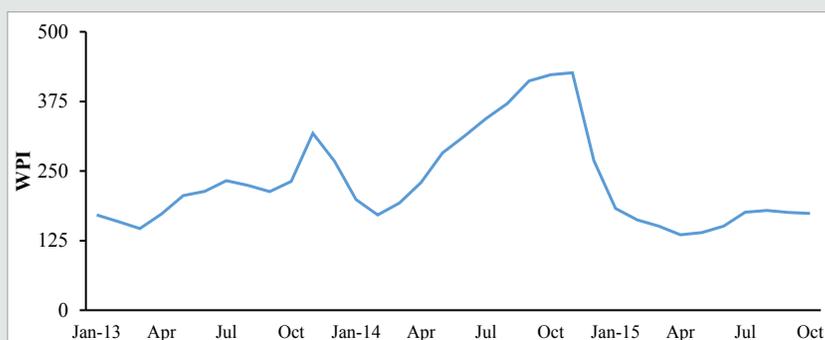
The decline in prices is mainly on account of record production and export restrictions imposed by the government this year.

The Y-o-Y percentage change in WPI remained negative during 2015 through October.

IV.7.3 Prices

Potato prices as measured by WPI shows significant decline in 2014-15 compared to previous year. The annual average WPI for potato declined to 161.5 in 2015 (April to October) compared to 339.3 in 2014 (April to October), registering a decline of around 52.4 percent. The decline in prices is mainly on account of record production and export restrictions imposed by the government this year. The WPI for potatoes was highest in Nov 2014, but thereafter it registered a declining trend which continued till April 2015. The four months May to August 2015 experienced higher WPI prices which was partly due to crop damage following heavy rains in the states of Bihar, Jharkhand, Odisha, Assam, and Southern India. Prices have moderated in recent months with the arrival of new crop. (Figure IV.7.3).

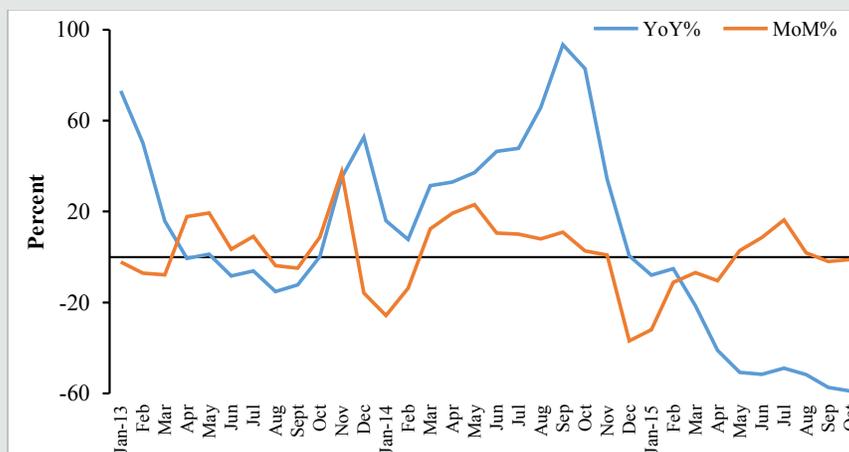
Figure IV.7.3: WPI Trends in Potato



Source: Office of Economic Adviser, Government of India

For almost the whole of 2014, the Y-o-Y percentage growth in potato prices was positive until October 2014, after which the growth rate started declining and reached 0.5 percent in December 2014 over Dec 2013 (Figure IV.7.4). The Y-o-Y percentage change in WPI remained negative during 2015 through October. The M-o-M percentage change in WPI showed that except for May to August 2015, the growth rates have been negative throughout the year starting from December 2014. These four months recorded positive growth in WPI prices due to shortage in supply resulting from unseasonal rains leading to crop losses and quality deterioration. However, following government’s initiatives on controlling prices through imposition of stocks limits under the Essential Commodities Act and de-hoarding operations, potato price inflation eased since August 2015.

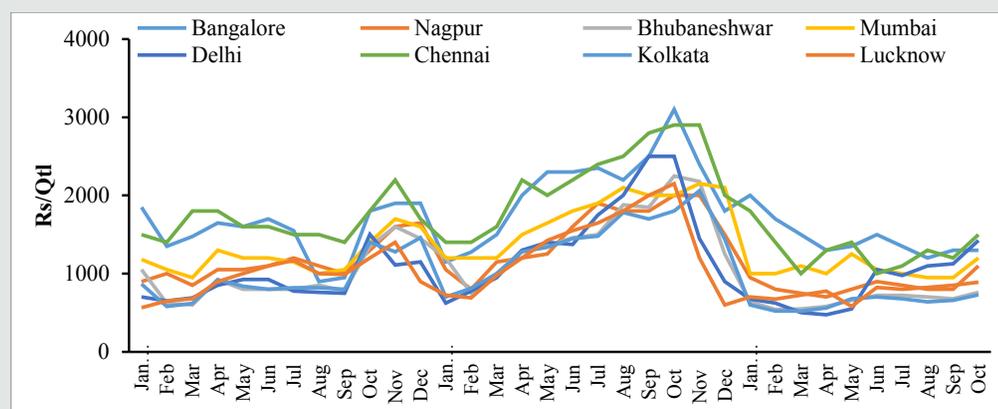
Figure IV.7.4: Percentage Change in WPI M-o-M and Y-o-Y



Source: Office of Economic Adviser, Government of India.

The wholesale prices of potato on an average showed decline in all major markets in April–October 2015 over the corresponding period last year. Among major cities, the highest fall is recorded in Bhubaneswar, Kolkata and Lucknow, where the rate of decline is more than 50 percent in Apr–Oct 2015 over the average prices in 2014 (Figure IV.7.5). Y-o-Y basis, the percentage change in wholesale prices for potatoes in October 2015 shows decline in all major markets over Oct 2014. The M-o-M percentage change reflects increase in wholesale prices in recent few months in 2015 over 2014 in all major markets, except for Bangalore where it shows no change in Oct 2015 over Sept 2015. This increase is partly due to the heavy rains that damaged the crops in the states of Bihar, Jharkhand, Odisha and Assam, and consequent increase in demand, which is being met from the old stock.

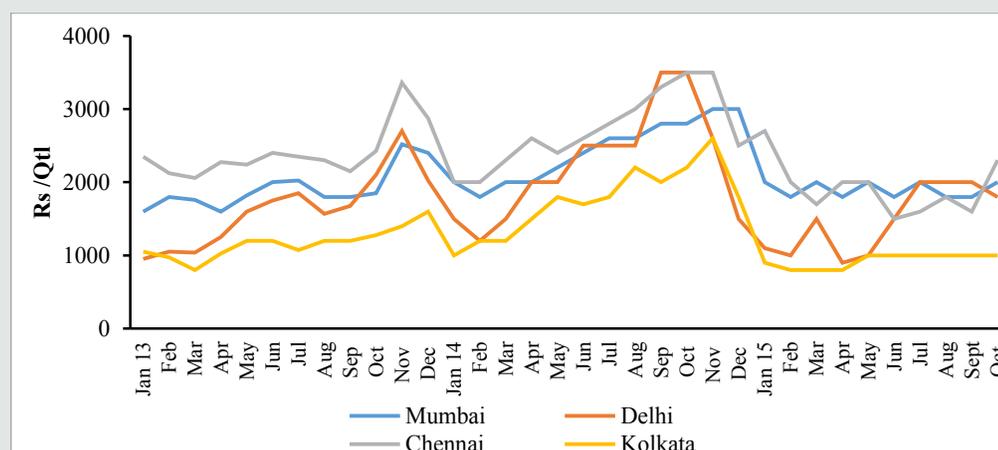
Figure IV.7.5: Wholesale Prices of Potato in Major Cities



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

Retail prices on an average also showed decline in all four major metropolitan cities in 2015 (April–October) over the same period in 2014 (Figure IV.7.6). In terms of Y-O-Y percentage change, the highest decline in retail prices in 2015 over 2014 was in Kolkata (48 per cent), followed by Delhi (39 per cent) and Chennai (37 per cent). The potato prices are stable in Kolkata since May 2015 at Rs 1000/ quintal. Delhi shows increase in retail prices of potato since May 2015, in between remained stable for few months and finally declined in Oct 2015, whereas Mumbai and Chennai saw an increase in retail price in Oct over Sept 2015.

Figure IV.7.6: Retail Prices of Potato in Metro Cities



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

The M-o-M percentage change reflects increase in wholesale prices in recent few months in 2015 over 2014 in all major markets,



The market arrival of potato has declined for all the major markets in Dec 2015 compared to previous month.

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 potatoes and onions within the purview of stockholding limits under the Essential Commodities Act, 1955 to impose 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. Recently, the MEP on onions was lowered from \$700 per tonne to \$400 per tonne following a fall in domestic prices to encourage exports leading to better price realization for farmers.

IV.7.4 Market arrivals

The market arrival of potato has declined for all the major markets in Dec 2015 compared to previous month. For the month of November 2015, a decline in monthly arrivals was recorded in major markets except for Delhi and Bangalore, where an improvement of 29 percent and one percent was noticed over the previous month (Table IV.7.3). M-o-M percentage change trend shows that arrivals of potato are continuously declining in Mumbai since October 2015.

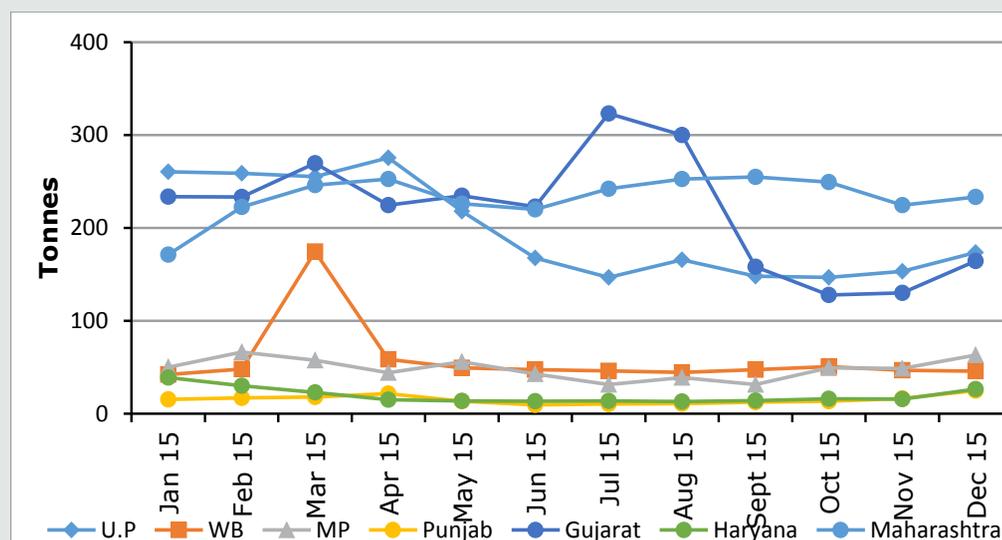
The per day market arrival of potatoes shows stable trend in Haryana, West Bengal and Madhya Pradesh since April 2015 (Figure IV.7.7). In Dec 2015, the per day market arrival of potato shows improvement in all major states except for West Bengal.

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

Centres	May 15	Jun 15	Jul 15	Aug 15	Sept 15	Oct 15	Nov 15	Dec 15
Delhi	40,109	35,774	36,628	32,856	45,680	42,565	54,812	23,038
Mumbai	25,902	30,366	32,360	39,192	43,853	42,494	32,875	20,771
Kolkata	261	480	206	207	212	398	254	86
Bangalore	22,604	23,273	19,075	28,213	23,842	26,784	27,104	12,901
Lucknow	6,744	4,310	4,096	3,509	4,225	4,264	3,794	3,623

Source: AGMARKNET.

Figure IV.7.7: 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 increased by 10.7 per cent from 41.5 million tonnes in 2013-14 to 45.9 million tonnes. For 2015-16, production is likely to be lower at 44.1 million tonnes. Potato exports in 2015-16 are projected by trade at 433,000 tonnes compared to 374,000 tonnes in 2014-15. Due to lower production, potato prices are expected to increase in the short run.

IV.8 Onion

IV.8.1 Area and production trends

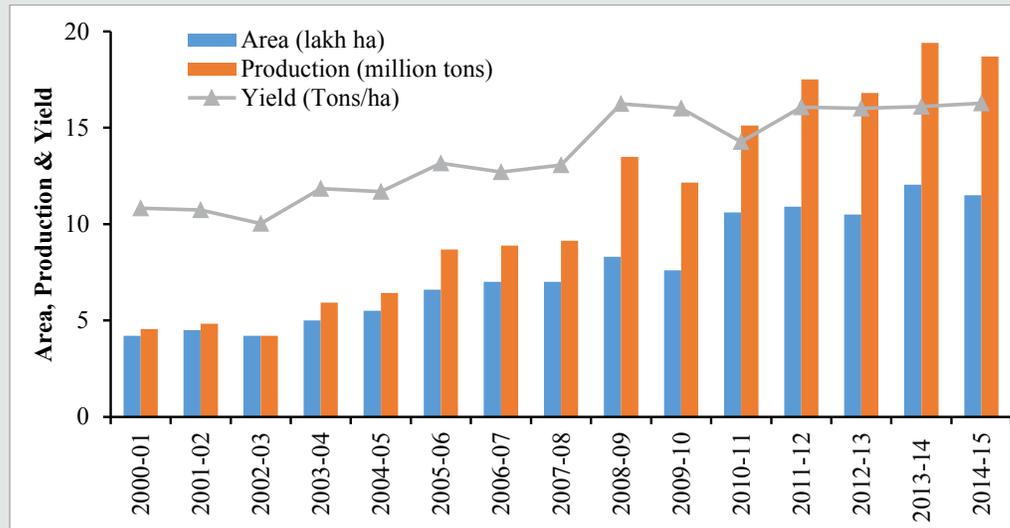
In India, onion is basically a rabi crop with two cycles: the first harvesting starting in November to January and the second harvesting from January to May. India has largest area under onion production globally, but in terms of production it ranks second after China due to poor yield. The third advance estimate of onion given by NHRDF shows that with an area of 11.49 lakh hectares and 16.3 tonnes/ha of productivity, production of onion was 18.7 million tonnes in 2014-15 down from 19.4 million tonnes in 2013-14 (Figure IV.8.1). 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.

For 2015-16, production is likely to be lower at 44.1 million tonnes.

Due to lower production, potato prices are expected to increase in the short run.

The third advance estimate of onion given by NHRDF shows that with an area of 11.49 lakh hectares and 16.3 tonnes/ha of productivity, production of onion was 18.7 million tonnes in 2014-15 down from 19.4 million tonnes in 2013-14.

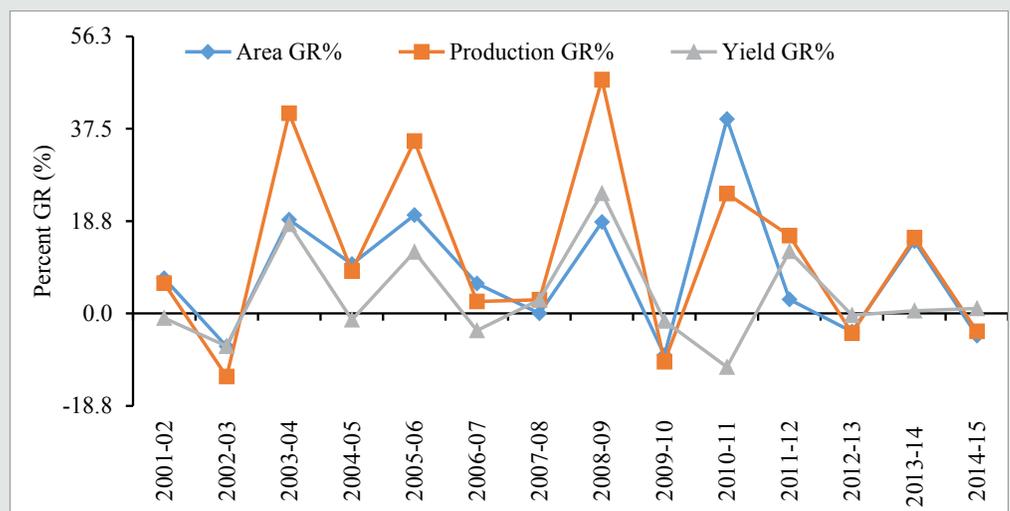
Figure IV.8.1: Area, Production and Yield of Onion in India



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

Over the years, both area and production of onion has shown an increasing trend on an average while productivity has remained more or less stagnant particularly over the last four years. In terms of Y-o-Y percentage change, both area and production shows decline in 2014-15 over 2013-14 by 4.5 percent and 3.6 percent, respectively. However, productivity improved by one percent in 2014-15 (Figure IV.8.2). Since 2001, production grew at faster rate up to 2006 at compound annual growth rate of 13.8 per cent, while during 2006 to 2011, production grew at comparatively lower growth rate of 11.7 percent. The lowest growth rate in last 15 years was recorded during 2011 to 2015 at 5.5 percent. The main reason for the significant production growth during 2001 to 2011 was the impressive growth rate in the area under onion cultivation, while in recent 4 to 5 years, the main contributor for the production growth was yield growth.

Figure IV.8.2: Percentage Change in Area, Production and Yield of Onion



Source: Author's Calculation.

The state level data shows that five major states together contribute about 73 percent of the total share in onion production at all India level. These states are Maharashtra (28.6 per cent), followed by Karnataka (15.9 per cent), Madhya Pradesh (15.8 percent), Bihar (6.7

per cent) and Gujarat (6 percent). Of these, 3 major states, Maharashtra, Bihar and Gujarat, registered a decline in Y-o-Y percentage growth rate in production in 2014-15 over 2013-14 (Table IV.8.1). The low production growth in the major onion producing states is mainly on account of unseasonal rainfall and hailstorms that destroyed the harvested and standing onion crops. Traders are also reported to have hoarded onions, leading to scarcity and high prices.

Table IV.8.1: Y-o-Y % Change in Area, Production and Yield of Onion in 2014-15

States	Area	Production	Yield
Maharashtra	-8.6	-8.6	0.0
Karnataka	20.6	44.6	19.9
Madhya Pradesh	5.0	5.0	0.0
Bihar	0.0	-4.4	-4.3
Gujarat	-39.1	-39.1	0.0
Rajasthan	8.9	13.5	4.2
Haryana	-4.9	-0.8	4.3
Andhra Pradesh	-31.2	-42.7	-16.7
Other States	-2.6	-3.4	-0.8
All India	-4.5	-3.4	1.1

Source: Growth rates calculated on data taken from www.nhrdf.com.

Note: 3rd advance estimates for 2014-15 and for 2013-14 final estimates taken.

IV.8.2 Supply and Demand

Nearly 94 per cent of the onion production in the country is consumed domestically (Table IV.8.2). Onion production is forecast to increase to 20.6 million tonnes in 2015-16 compared to 18.73 million tonnes in 2014-15. Onion exports in 2015-16 is forecast at 1.27 million tonnes compared to 1.23 million tonnes in 2014-15. The share of onion exports in total production is likely to fall to 6.17 per cent in 2015-16 from 6.61 per cent in 2014-15. In 2013-2014 India imported 314 tonnes of onions mostly from Egypt, while there was no import in the previous year. In 2014-15, India imported 576 tonnes of onions. As per the latest available reports, Egyptian export of onions to India is estimated to reach around 35,000 tonnes in 2015-16.

Table IV.8.2: Onion Supply and Demand (1000 Tonnes)

Particulars	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16F
Production	12,191	15,118	17,511	16,813	19,402	18,736	20,600
Imports	1	13	0	0	0.31	0.58	35
Total Supply	12,192	15,131	17,511	16,813	19,402	18,737	20,635
Exports	1,677	1,182	1,310	1,667	1,482	1,238	1,270
Total Utilization	10,515	13,949	16,201	15,146	17,920	17,498	19,365
Exports:							
Production (%)	13.76	7.82	7.48	9.91	7.64	6.61	6.17
Domestic Use:							
Total Supply (%)	86.2	92.2	92.5	90.1	92.4	93.4	93.8

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

The low production growth in the major onion producing states is mainly on account of unseasonal rainfall and hailstorms that destroyed the harvested and standing onion crops. Traders are also reported to have hoarded onions, leading to scarcity and high prices.

Onion production is forecast to increase to 20.6 million tonnes in 2015-16 compared to 18.73 million tonnes in 2014-15.

The lower production in 2014-15 has led to sharp increase in onion prices.

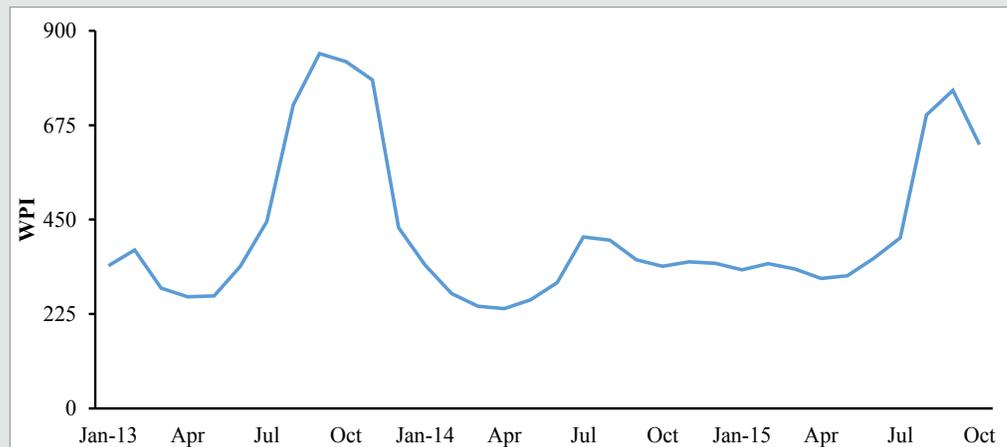
Y-o-Y basis, the WPI for onion shows double digit growth throughout 2015, except for July 2015.

IV.8.3 Prices

The lower production in 2014-15 has led to sharp increase in onion prices. The average annual wholesale price of onion measured by the WPI was higher at 496.7 in 2015 (April-October) compared to 328.7 in 2014 (April-October), an increase of almost 51 percent. Since May 2015, prices of onion were following an increasing trend, with the WPI touching the highest point at 758 in September 2015, after which it declined marginally. (Figure IV.8.3).

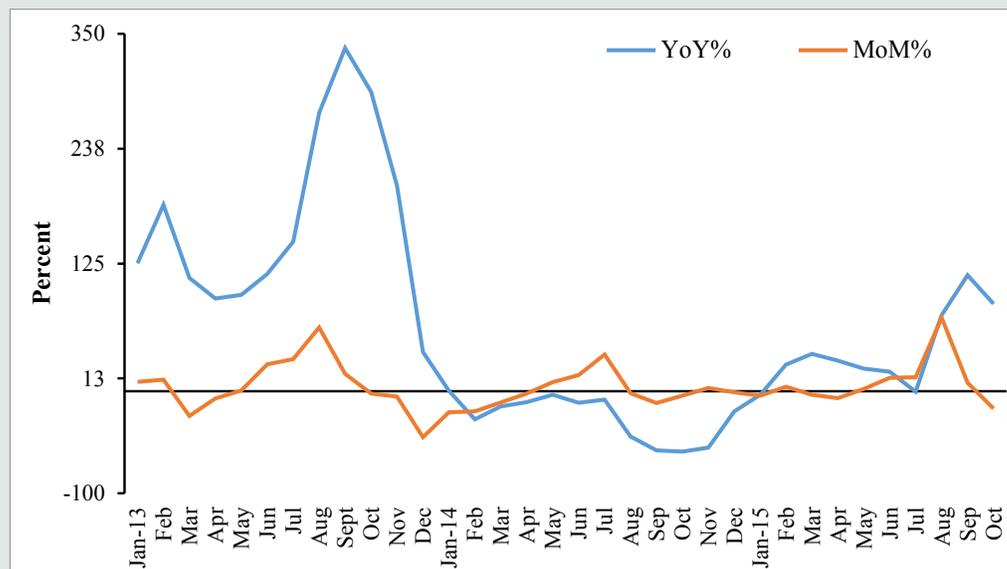
Y-o-Y basis, the WPI for onion shows double digit growth throughout 2015, except for July 2015, when a marginal decline was recorded over the same period last year. Onion prices rose this year on account of lower onion production brought about by adverse weather conditions. On M-o-M basis, the WPI for onions showed a negative trend till April 2015, after which positive growth was recorded. The WPI increased significantly in August 2015 over the previous month. However, in October, prices (measured by WPI) have declined by 17 per cent over Sept 2015 (Figure IV.8.4).

Figure IV.8.3: WPI Trends in Onion



Source: Office of Economic Adviser, Government of India.

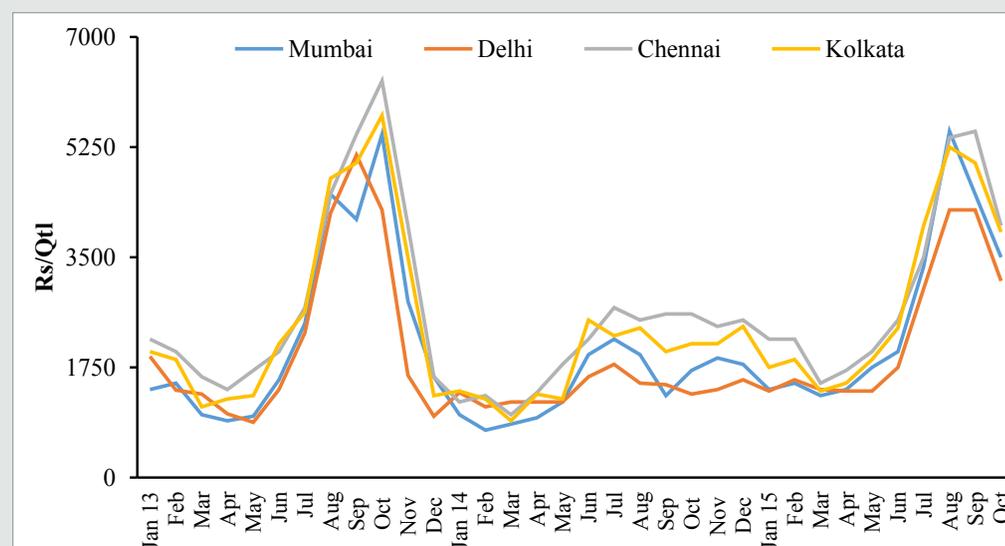
Figure IV.8.4: Percentage Change in WPI for Onion M-o-M% and Y-o-Y%



Source: Office of Economic Adviser, Government of India.

The wholesale prices for onion showed an increase in four metro cities from April to August 2015, while during September to October 2015, prices have moderated (Table IV.8.5). The decline in prices in recent months is mainly due to import arrivals combined with arrival of new crop in coming months from Maharashtra, MP and Rajasthan. Although all major markets showed a decline in wholesale prices in October over September 2015, the highest decline of around 50 percent was registered in Bangalore and Hyderabad (Table IV.8.3). Lasangaon, India's biggest market for onion, registered the lowest decline of 14.3 per cent.

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



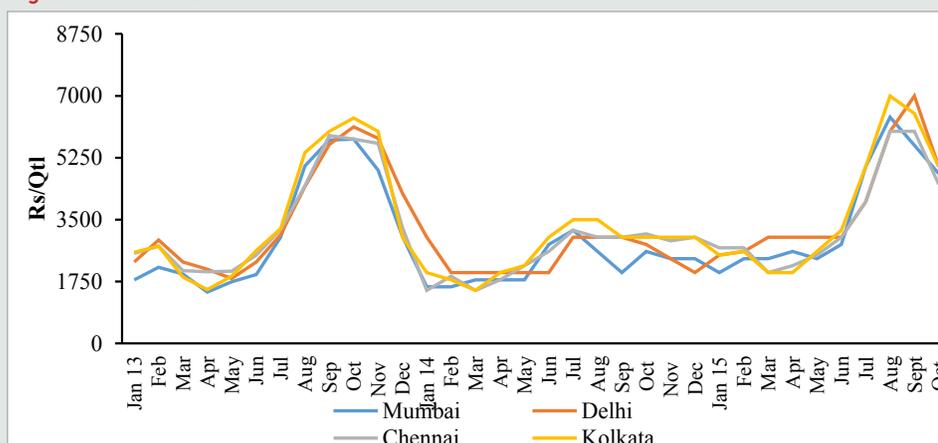
Source: Directorate of Economics and Statistics, Ministry of Agriculture.

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

	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct
Mumbai	1300	1400	1750	2000	3350	5500	4500	3500
Delhi	1400	1375	1375	1750	3000	4250	4250	3125
Chennai	1500	1700	2000	2500	3500	5400	5500	4000
Kolkata	1375	1500	1875	2375	4000	5250	5000	3900
Hyderabad	1100	1250	1700	1800	2700	5400	4000	2000
Bangalore	1700	1300	1900	2000	3600	4800	5000	2485
Lasalgaon	1150	1050	1100	1500	3100	4600	3500	3000
Bhubaneshwar	1650	1600	1700	2200	3700	5800	4300	3500

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

In line with wholesale prices, retail prices for onions also showed moderation in October 2015 over Sept 2015. The average annual retail prices in April to October 2015 showed an increase in all four major markets over the same period last year. The highest increase was in Mumbai (76 per cent) followed by Delhi (74 per cent) and Kolkata (55 per cent) (Figure IV.8.6).

Figure IV.8.6: Retail Prices of Onion in Metro Cities


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

IV.8.4 Market Arrivals

Overall, the monthly arrival of onion in major markets, except Bangalore, showed an improvement in November 2015 over the previous month. Although Delhi and Kolkata reported decline in onion arrivals in October 2015 as compared to Sept, but in Nov 2015 these two cities registered an improvement in arrivals by 7.6 percent and 1.7 percent (Table IV.8.4). The improvement of arrivals in recent months has contributed to moderation in prices of onion.

State-wise average daily arrivals of onions showed declining trend since April 2015 but started improving since October. In October 2015 all major states showed higher onion arrivals over Sept 2015. In November also, except for Karnataka, all other major states reflect improved arrivals over previous month (Table IV.8.5). However, in December 2015, most of the major states have shown a decline in average daily arrival of onions over November 2015. The states where average daily arrivals have improved in December 2015 over previous month are U.P, Maharashtra and Gujarat.

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

Centres	Jun 15	Jul 15	Aug 15	Sept 15	Oct 15	Nov 15
Delhi	33,480	25,170	22,494	28,602	26,415	28,331
Mumbai	25,000	21,385	19,713	20,237	27,360	30,467
Kolkata	6,120	3,535	4,218	4,401	4,324	6,000
Bangalore	38,677	39,914	62,531	119,485	164,049	77,283

Source: AGMARKNET.

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

Consuming Centres	Jun 15	Jul 15	Aug 15	Sept 15	Oct 15	Nov 15	Dec 15
WB	34.0	26.7	23.5	25.2	31.4	33.4	25.1
MP	227.8	65.0	38.9	32.4	87.6	171.3	118.3
Punjab	28.9	18.3	12.0	12.0	14.0	15.6	15.5
U.P	35.4	29.7	23.5	24.7	27.9	35.0	42.9
Maharashtra	454.2	326.8	181.5	141.1	226.4	448.9	548.2

(Contd...)

Table IV.8.5: (Contd...)

Rajasthan	34.7	29.8	22.9	16.9	26.8	92.8	85.8
Gujarat	123.4	130.8	109.3	80.0	168.9	222.5	248.3
Karnataka	223.8	218.0	323.0	564.9	841.3	543.4	359.9

Source: AGMARKNET.

Assessment

Although onion production declined in 2014-15 due to unseasonal rainfall in major onion producing states and hoardings by traders, the new financial year is likely to see improved production level from 18.7 million tonnes in 2014-15 to 20.6 million tonnes in 2015-16. Moreover, with expectations of increased arrival of imported onions in 2015-16, prices are likely to ease further. The recent government initiatives of imposition of stock holding limits, higher imports and increasing the minimum export prices is likely to improve onion situation in coming months.

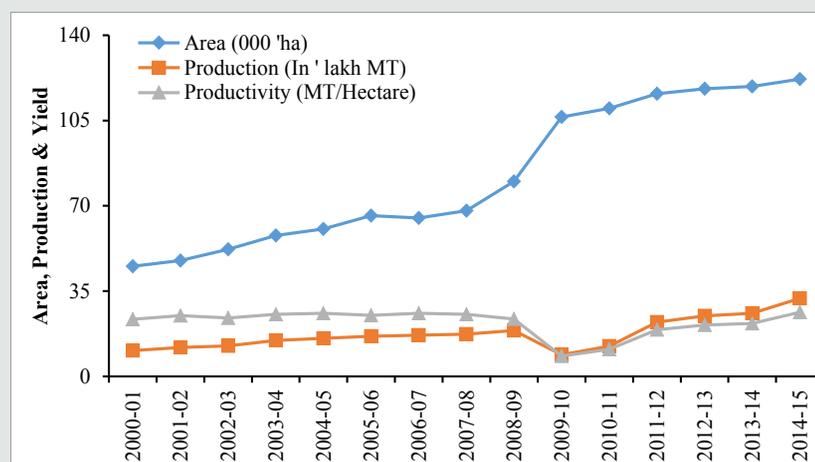
IV.9 Grapes

IV.9.1 Production trends in 2014-15

Grape is one of the important commercial fruit crop in India covering an area of 122,000 hectares occupying nearly 2 per cent of the total area under fruit production. The country is also a major exporter of grapes to the world. India is among the first ten countries in the world in the production of grapes. Within India, the production of grapes constitutes about 3.7 percent share of total fruit production. This crop occupies fifth position amongst fruit crops in India.

According to 3rd advance estimates by the NHRDF for 2014-15, India's overall production for grapes is estimated at 3.20 million tonnes as compared to 2.59 million tonnes recorded 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.9.1). The area under grapes cultivation increased significantly from 2008-09 and 2009-10, whereas after this it is increasing continuously at a moderate rate of growth. The production and yield on the other hand, showed an increasing trend since 2000-01 except for 2009-10 when it declined significantly, but thereafter following an increasing trend till 2014-15.

Figure IV.9.1: Area, Production and Yield of Grapes in India



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

The new financial year is likely to see improved production level from 18.7 million tonnes in 2014-15 to 20.6 million tonnes in 2015-16. Moreover, with expectations of increased arrival of imported onions in 2015-16, prices are likely to ease further.

For 2014-15, India's overall production for grapes is estimated at 3.20 million tonnes as compared to 2.59 million tonnes recorded in 2013-14.

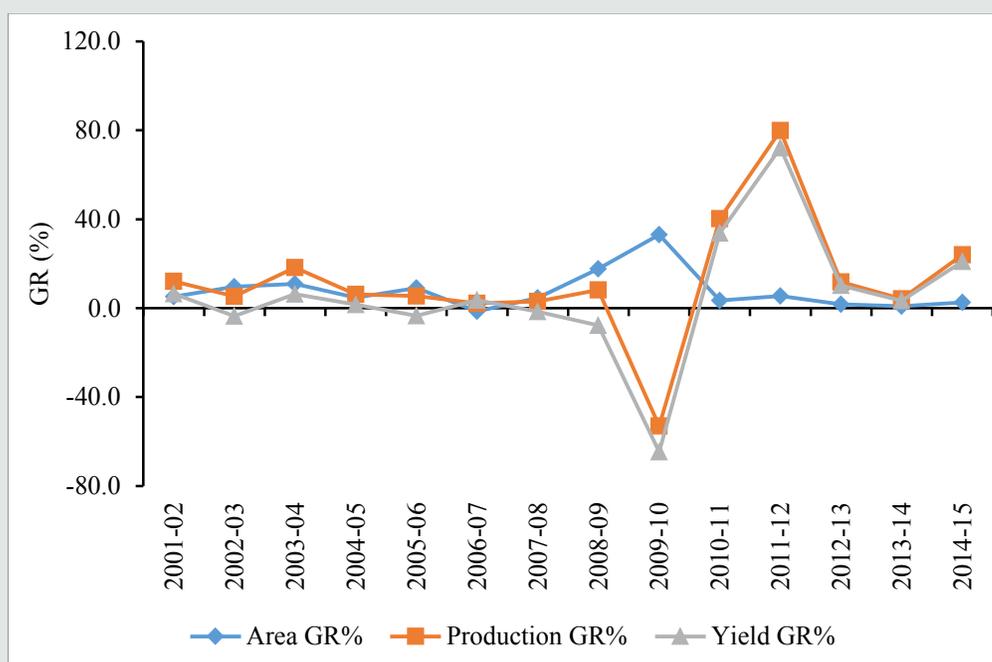
In 2014-15, except for Maharashtra and Andhra Pradesh, all other grapes producing states showed an improvement in production over the previous year. Maharashtra and Andhra Pradesh showed same production levels in 2014-15 as in 2013-14.

In terms of Y-o-Y percentage change, the WPI for grapes in October increased by 5.8 percent over October 2014.

In coming months, the supply of grapes is likely to be higher, therefore there are expectations that prices may ease in short run.

In terms of Y-o-Y percentage change, the growth in production of grapes shows declining trend since 2004-05 till 2009-10. In 2009-10, the production of grapes declined by 53 per cent over 2008-09, thereafter it improved significantly for the next two years till 2011-12. In 2014-15, the production grew by 24 per cent over the production level in 2013-14 (Figure IV.9.2). The growth was mainly on account of higher growth in area under grapes cultivation and yield at 2.5 per cent and 20.9 per cent respectively over the previous year. State-wise about 83 per cent of the share in total production of grapes is alone contributed by Maharashtra followed by Karnataka with 12 per cent share in total grapes production. In 2014-15, except for Maharashtra and Andhra Pradesh, all other grapes producing states showed an improvement in production over the previous year. Maharashtra and Andhra Pradesh showed same production levels in 2014-15 as in 2013-14.

Figure IV.9.2: Percentage Change in Area, Production and Yield of Grapes in India

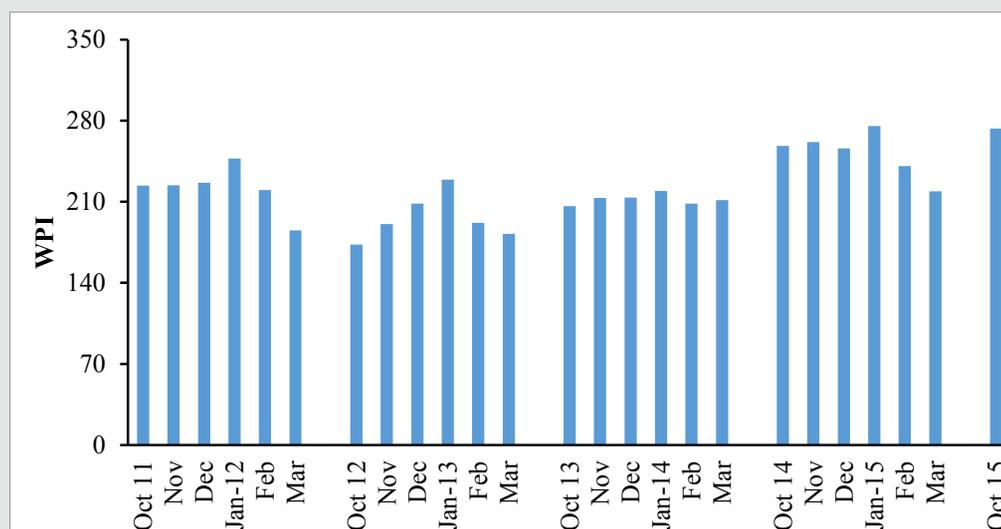


Source: Author's Calculation

IV.9.2 Prices

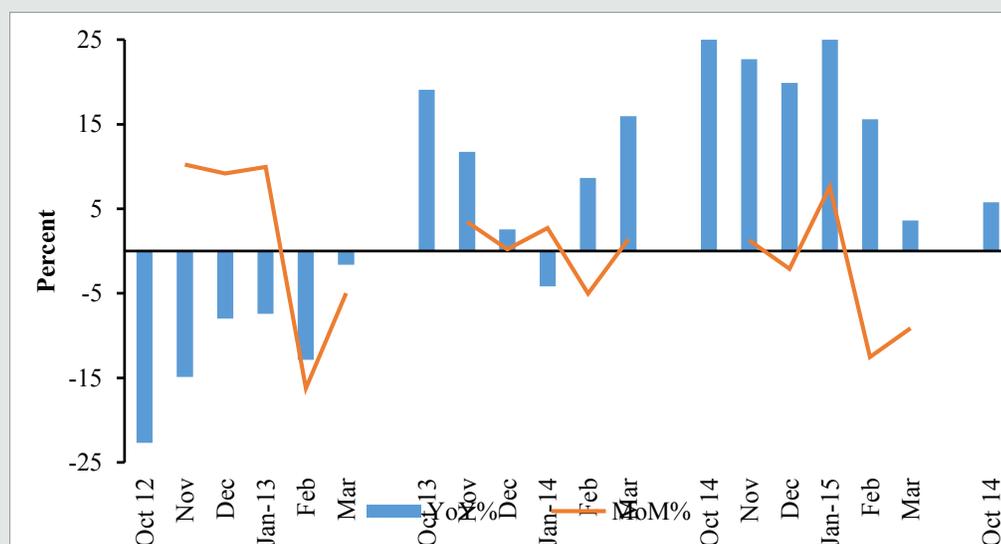
The wholesale price index (WPI) reveals an increase in the prices of Grapes in October 2015 over the last available WPI of March 2015. It increased to 273.2 in October 2015 as compared to 218.9 in March 2015 (Figure IV.9.3). The wholesale prices for grapes increased in the month of Jan 2015 over Dec 2015, but thereafter it moderated in February and March 2015, but again in October 2015 it increased. In terms of Y-o-Y percentage change, the WPI for grapes in October increased by 5.8 percent over October 2014. In October 2014, the WPI for grapes was at 258.3 (Figure IV.9.4). In coming months, the supply of grapes is likely to be higher, therefore there are expectations that prices may ease in short run.

Figure IV.9.3: WPI Trends in Grapes



Source: Office of Economic Adviser, Government of India.

Figure IV.9.4: Percentage Change in WPI of Grapes M-O-M and Y-O-Y



Source: Office of Economic Adviser, Government of India.

IV.9.3 Trade

Grape is considered as profitable commercial fruit in terms of global trade. According to DGCIS data, India has exported 107,258 tonnes in 2014-15 amounting Rs 1,086.5 crores as compared to 192,617 tonnes exported in 2013-14 amounting Rs 1,664 crores, thereby reflecting a decline of 44 percent in 2014-15 over 2013-14 in quantitative terms (Table IV.9.1). This decline is mainly on account of unseasonal rains and hailstorm in the key harvesting months between March and May in Maharashtra resulting in quality degradation. Major destinations for Indian grapes include Netherland, UK, Russia, UAE, Saudi Arabia, Germany and Thailand.

India has exported 107,258 tonnes in 2014-15 amounting Rs 1,086.5 crores as compared to 192,617 tonnes exported in 2013-14 amounting Rs 1,664 crores, thereby reflecting a decline of 44 percent in 2014-15 over 2013-14 in quantitative terms.

Table IV.9.1: India Export of Fresh Grapes

Country	2012-13		2013-14		2014-15	
	Quantity (MT)	Value (Rs. Crore)	Quantity (MT)	Value (Rs. Crore)	Quantity (MT)	Value (Rs. Crore)
Netherland	35,932.8	325.0	46,136.9	527.1	32,859.4	361.7
UK	15,226.1	155.8	17,149.0	208.7	13,475.8	160.3
Russia	16,789.2	131.4	24,503.0	226.6	12,625.8	113.7
UAE	19,394.0	157.0	17,212.3	129.6	11,860.5	113.6
S. Arabia	9,452.8	67.3	9,387.9	50.3	5,319.7	46.9
Germany	2,190.1	15.9	3,158.2	32.0	2,939.0	32.4
Thailand	2,963.8	34.3	3,807.9	50.2	2,260.1	28.7
Sri Lanka	2,713.2	21.0	3,498.7	19.8	2,072.5	20.6
Hong Kong	1,575.3	17.7	1,644.7	24.1	1,141.4	16.6
Bangladesh	34,290.0	61.0	31,188.4	75.8	3,562.0	13.1
Total	1,72,744.40	1,259.4	1,92,616.92	1,666.4	1,07,257.85	1,086.5

Source: DGCIS Annual Export.

Assessment

According to third advance estimates by NHRD, production of grapes increased in 2014-15 over 2013-14 by 24 per cent and reached to 3.20 million tonnes. Both area under grapes production and productivity showed improvement in 2014-15 over previous year. However, despite increased production, a decline in exports was registered in 2014-15. The reason is due to unseasonal rains and hails in major grape producing and exporting state, Maharashtra, the quality of grapes declined. The WPI prices for grapes on an average showed an increase in 2014-15 (Oct-Mar) over the same period of the previous year. In 2015, the WPI prices showed signs of moderation during February and March but in October, prices again strengthened. Latest available data shows that supply of grapes in coming months is likely to improve and therefore there are chances that prices may ease.

IV.10 Milk

IV. 10.1 Production Trend

Dairy activities have traditionally been integral to India's rural economy. India has world's largest bovine population of 300 million comprising of 191 million cattle and 109 million buffalo. In 2014-15, country had 14.1 million exotic cows, 31.8 million non-descript cows and 39.7 million buffalos in milk. With estimated average yield of exotic/crossbred cows at 7.15 kg/day, indigenous/ non-descript cows at 2.54 kg/day and buffalos at 5.15 kg/day, India produced 146.3 million tonne of milk, which includes 5.2 million tone of goat milk, making India the world's largest milk producing country. India is also the world's largest consumer of milk as almost the entire milk and milk products are consumed domestically. Table IV.10.1 presents the bovine population based on the Nineteenth Live Stock Census in India conducted in 2012.

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Table IV.10.1: Bovine Population

Bovine Population in India in 2012 (1000)	
Cattle Total	1,90,904
Exotic/Crossbred	39,732
Male	5,971
Female	33,760
Indigenous	1,51,172
Male	61,949
Female	89,224
Buffalo Total	1,08,702
Male	16,103
Female	92,599
Bovine Total	2,99,981
Male	84,187
Female	2,15,794

Source: Department of Animal Husbandry, Dairying and Fisheries, Govt. of India.

Table IV.10.2: Animals in Milk, Milk Yield and Milk Production

	2009-10	2013-14	2014-15
Cows- Exotic			
Average Animals in Milk (million)	11.3	13.8	14.1
Average yield (kg/day)	6.8	6.78	7.15
Milk Production (million tonnes)	27.9	33.89	36.94
Cows-Non Descript			
Average Animals in Milk (million)	30.2	31.0	31.8
Average yield (kg/day)	2.2	2.5	2.54
Milk Production (million tonnes)	24.2	28.3	29.48
Buffalo			
Average Animals in Milk (million)	36.2	39.3	39.7
Average yield (kg/day)	4.53	4.91	5.15
Milk Production (million tonnes)	59.8	70.4	74.7
Goat			
Average Animals in Milk (million)	31.5	30.9	30.9
Average yield (kg/day)	0.39	0.45	0.46
Milk Production (million tonnes)	4.5	5.05	5.18
Milk Total (million tonnes)	116.4	137.7	146.3
Growth over previous year (%)	3.78	3.97	6.27

Source: Department of Animal Husbandry, Dairying and Fisheries, Govt. of India.



Table IV.10.2 shows animals in milk, milk yield and milk production during 2009-10 to 2014-15. Although bovine population, animals in milk, the average yield and hence milk production are rising in India, Indian breeds of cows and buffalos are considered inferior in terms of productivity. The sector is also suffering from various other impediments like shortage of quality fodder, poor transportation facilities for milk and inadequate cold chain infrastructure. Area under fodder crops, permanent pastures and other grazing lands is either stagnant or shrinking. According to the Indian Grassland and Fodder Research Institute Vision-2030 document published in July 2011, the country faces a net deficit of 61.1% green fodder, 21.9% dry crop residues and 64% feeds. About 50% of the cattle population depends largely upon free rangeland grazing in forests, pastures, and village common land. Underfeeding of the livestock can also be attributed to the low productivity of the sector and also to the poor livestock breeds, making optimal feeding remunerative to farmers. Table IV.10.3 presents area under fodder crops, permanent pastures and other grazing lands since 1995-96.

Table IV.10.3: Area under fodder crops, permanent pastures and other grazing lands

Year	Area under Fodder Crops (1000 ha)	Area under Permanent Pastures and Other Grazing Lands (1000 ha)
1995-96	8,327	11,064
2005-06	8,066	10,444
2008-09	8,448	10,344
2009-10	7,390	10,339
2010-11	7,769	10,301

Source: Department of Animal Husbandry, Dairying and Fisheries, Govt. of India. Basic Animal Husbandry Statistics, 2006 and 2014.

Due to rising demands of food grains on the available arable land resources, India can ill afford to divert cultivable land for fodder production. The only conceivable option lies in revitalizing the degrading common fodder and pasture resources and strengthening research and development activities in grasslands /grazing lands in the country to improve their productivity and nutritive content. Government has been implementing “Accelerated Fodder Development Programme (AFDP)” since 2011-12 under Rashtriya Krishi Vikas Yojna (RKVY) aiming to enhance availability of green and dry fodder.

Despite all these limitations, farmers have made fresh investments and have started expanding their herd size. India is now the largest milk producer with 18% share in global milk production followed by United States at 12%, China and Brazil at 5% each. Although China is also a major milk producing country, it is also a big importer of milk products. Table IV.10.4 shows top ten milk producing countries in the world with their respective share in global milk production in 2013.

Table IV.10.4: Share of Top Ten Milk Producing Countries in Global Milk Production

Sl. No.	Countries	% Share
1	India	18
2	United States	12
3	China	5

India is now the largest milk producer with 18% share in global milk production followed by United States at 12%, China and Brazil at 5% each.

4	Brazil	5
5	Germany	4
6	Russian Federation	4
7	New Zealand	3
8	France	3
9	Turkey	2
10	Pakistan	2

Source: FAO.

IV. 10.2 Consumption

Urbanisation and rising disposable income has brought about a structural shift in the lifestyle of Indians and in their feeding habits. Demand for livestock products such as value added milk products, meat and eggs has seen rapid growth. Earlier, people used to make dairy products such as butter, ghee, dahi/curd (yoghurt) and paneer (cottage cheese) at home. But now, they prefer buying packaged dairy products marketed by dairy cooperatives such as Amul and milk processing companies in the private sector.

Dairy products consumed in India are largely different from the products consumed in the developed countries (Table IV.10.5). In India milk is more consumed as fresh milk and as butter, ghee, yoghurt and condensed milk (khoya) whereas world consumes dairy products as fresh milk as well as in the form of cheese and butter.

Table IV.10.5: World Consumption of Dairy Products by type

Sl. No.	Dairy Product	% Share
1	Fresh Milk	43
2	Butter & Ghee	23
3	Cheese	25
4	Skimmed Milk Powder	5
5	Whole Milk Powder	4

Source: FAO Reports.

In developed countries almost 100 percent of the milk produced is processed in the form of various value added products. The level of milk processing in India is growing fast as better margins are driving cooperatives and other dairy players to expand. Organised sector now produces fresh packaged milk, UHT milk, flavoured milk, curd, flavoured & frozen yoghurts, probiotic products, lassi, buttermilk, butter, ghee, paneer, cheese, khoya, skimmed milk powder, dairy whiteners, ice cream and dairy sweets. They have also entered into skimmed milk production in a big way. According to a study by a reputed industry body the Associated Chambers of Commerce and Industry of India (ASSOCHAM)³⁶, with rapid increase in domestic demand for milk and milk-based products, the dairy industry in India is likely to reach about Rs 5 lakh crore by 2015.

As per rough estimates around 40% of the milk produced in India is being processed now, of which around one third is being processed by Dairy Cooperatives and about one tenth by dairy companies and the rest is processed at the village level through unorganized channels. Remaining 60 percent of the milk is either consumed at farm level, or sold as fresh, non-pasteurized milk through unorganized channels.

³⁶<http://www.assochem.org/newsdetail.php?id=4575>

Demand for livestock products such as value added milk products, meat and eggs has seen rapid growth.

The level of milk processing in India is growing fast as better margins are driving cooperatives and other dairy players to expand.

Volatility in the prices of milk measured in terms of whole sale price index (WPI)-annual series, is less as compared to egg, meat and fish and inflation continues to be higher as compared to food and dairy products (Figure IV.10.1) signifies both production and demand for milk has been growing.

IV.10.3 Prices

Volatility in the prices of milk measured in terms of whole sale price index (WPI)-annual series, is less as compared to egg, meat and fish and inflation continues to be higher as compared to food and dairy products (Figure IV.10.1) signifies both production and demand for milk has been growing. Further month on month inflation based on WPI (Figure IV.10.2) shows milk and dairy products inflation moving in a narrow range and is presently ruling at January 2013 level.

Figure IV.10.1: WPI for Milk, Egg, Meat & Fish, Food, Dairy Products (M-o-M % Change)

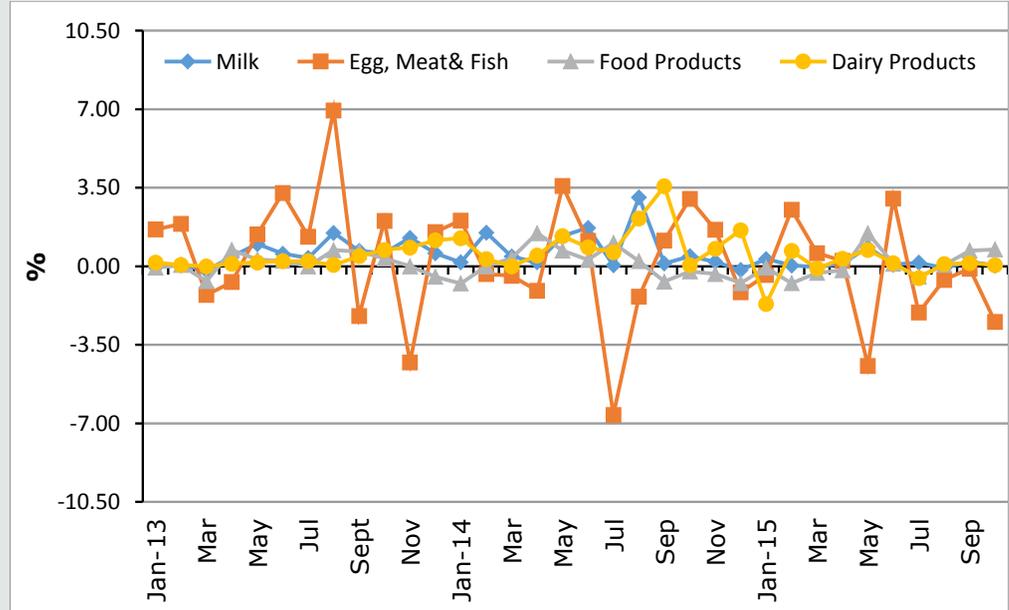
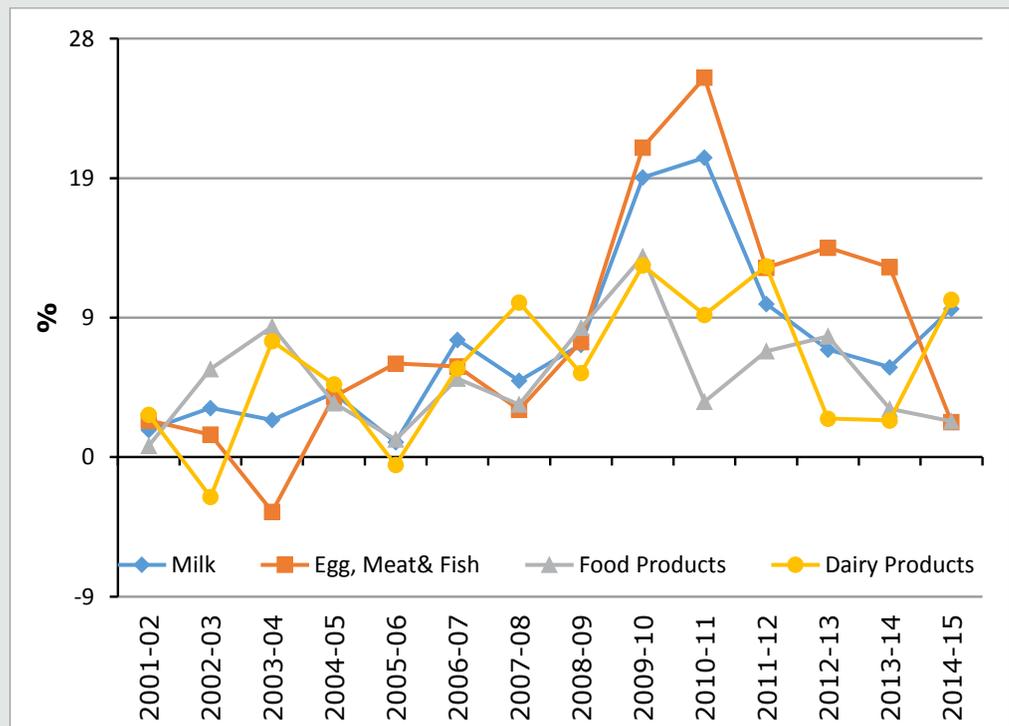


Figure IV.10.2: WPI for Milk, Egg, Meat & Fish, Food and Dairy Products (Y-O-Y % Change)



IV.10.4 Trade

Though India is an insignificant player in the world dairy trade, dairy companies are preparing themselves to meet international standards and other non-tariff barriers which range from the quality assurance of processed dairy products to the health status of livestock. However, with the declining international dairy prices in recent years, Indian dairy industry is now struggling with an oversupply of SMP. Import demand has declined because of abolition of dairy produce quota by the EU, imposition of EU ban on export to Soviet Union and significantly lower demand from China, which caused a glut of milk products in the international market.

However, India can look forward to milk-deficient neighbouring countries such as Bangladesh, Nepal, Bhutan, and Afghanistan and also to UAE, South East Asia, Russia and Africa for its dairy products in the medium term.

Assessment

With over 6 percent growth in milk production during 2014-15, in a year of poor monsoon, India has demonstrated its ability to withstand vagaries of nature. Despite quality concerns and limitations concerning area under fodder production, it was able to improve productivity of its animals. Even though domestic demand for milk and milk products is growing fast, a vast human population with low income can ill afford such high value products, resulting in milk surplus now. Milk processors barring cooperatives have reduced procurement price by up to 20 percent during last couple of months. Lower price realizations for milk combined with steep hikes in animal feed prices is hurting dairy farmers. While cooperative dairies have not cut procurement price of milk, their margins are under pressure.

The government has set a milk production target of 160 million tonnes for 2015-16 at a time when farmers and milk processors are struggling with a situation of oversupply. Consumer will gain from the stable price regime and more and more families from the lower strata will be able to afford milk products in future.

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The government has set a milk production target of 160 million tonnes for 2015-16 at a time when farmers and milk processors are struggling with a situation of oversupply.



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