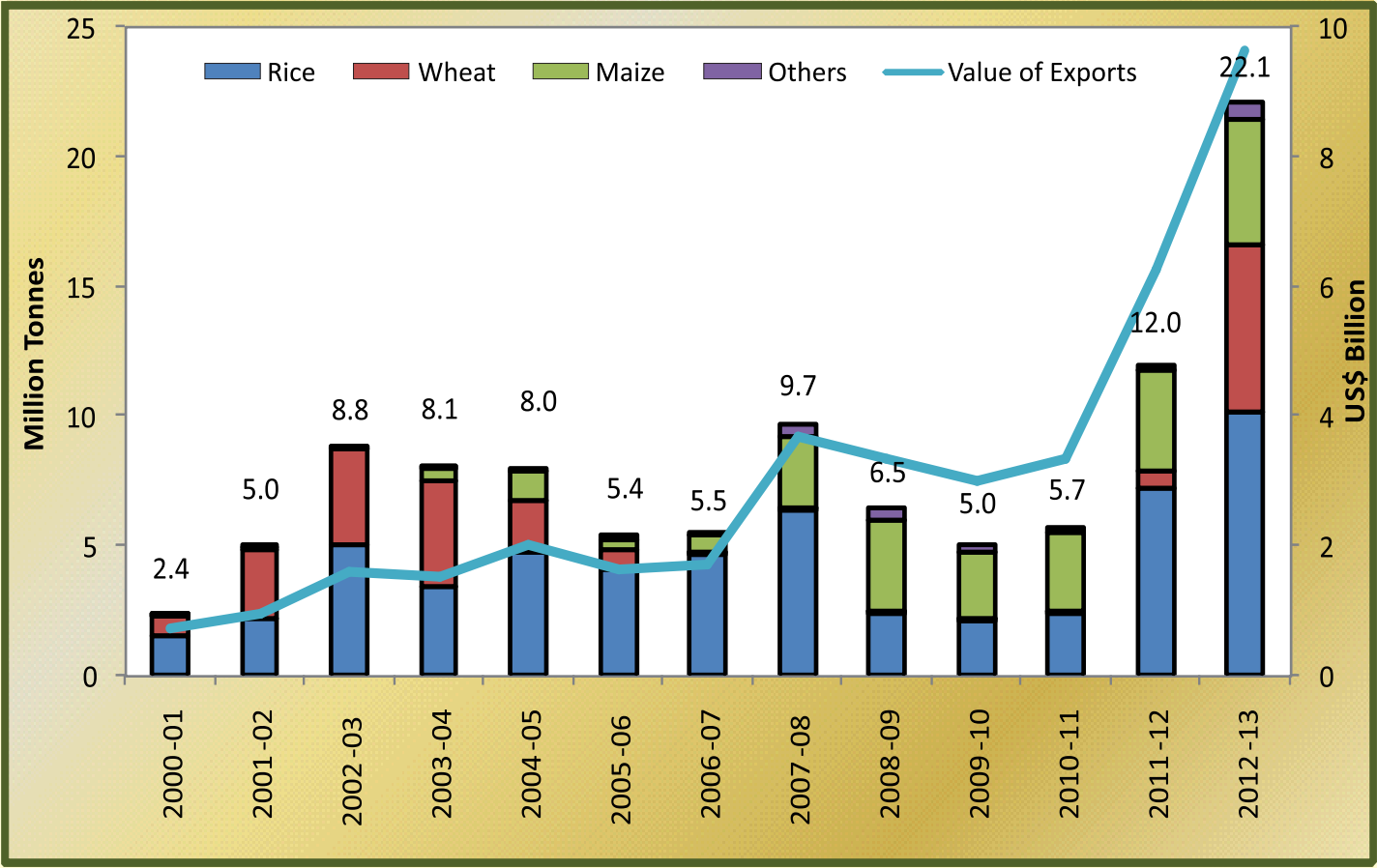


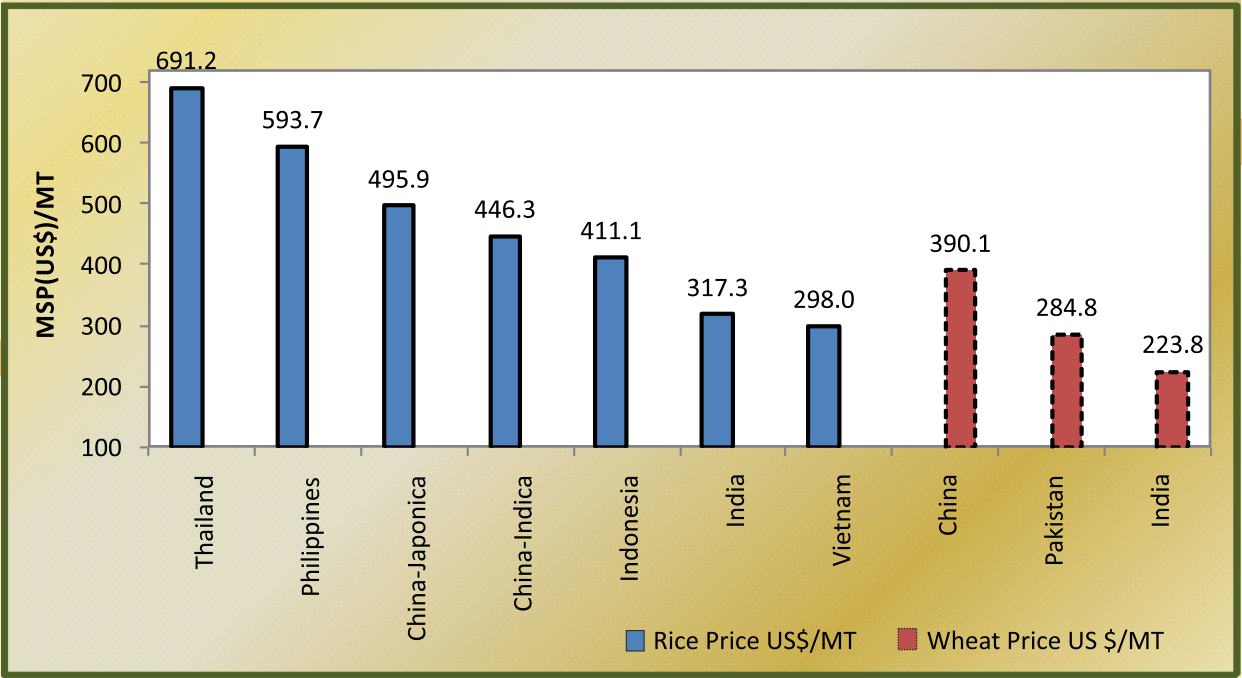
India's Rising Cereal Exports



# Price Policy for Kharif Crops

## THE MARKETING SEASON 2014-15

### MSP of Rice and Wheat for Comparator Countries, 2013



सत्यमेव जयते

COMMISSION FOR AGRICULTURAL COSTS AND PRICES  
Department of Agriculture & Cooperation  
Ministry of Agriculture  
Government of India  
New Delhi  
February 2014



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**February 2014**





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## List of Acronyms

A2+FL	Actual paid out cost plus imputed value of family labour
APMC	Agricultural Produce Market Committee
BE	Budget Estimates
C2	Comprehensive Cost including imputed rent and interest on owned land and capital respectively.
CAB	Cotton Advisory Board
CACP	Commission for Agricultural Costs and Prices
CAGR/CARG	Compound Annual Growth Rate/Compound Annual Rate of Growth
CAP	Cover and Plinth
CCI	Cotton Corporation of India
C&F	Cost and Freight
CIF	Cost, Insurance & Freight
CF	Correction Factor
CoP	Cost of Production
CS	Comprehensive Scheme
CSO	Central Statistics Office
CV	Coefficient of Variation
DAC	Department of Agriculture & Cooperation

DARE	Department of Agricultural Research and Education
DES	Directorate of Economics & Statistics
DFPD	Department of Food & Public Distribution
DGCIS	Directorate General of Commercial Intelligence and Statistics
DGFT	Directorate General of Foreign Trade
DIPP	Department of Industrial Policy & Promotion
DTA	Domestic Tariff Area
ECA	Essential Commodities Act
EDI	Electronic Data Interchange
F&V	Fruits & Vegetables
FAI	Fertilizer Association of India
FAO	Food and Agriculture Organization
FAQ	Fair Average Quality
FCI	Food Corporation of India
FFPI	FAO Food Price Index
FOB	Free on Board
FY	Financial Year
GCF	Gross Capital Formation
GDP	Gross Domestic Product
GR	Gross Returns
GVO	Gross Value of Output
ICAC	International Cotton Advisory Committee
IPGA	India Pulses & Grains Association
KMS	Kharif Marketing Season
LCS	Land Customs Station
LSDO	Light Speed Diesel Oil
MEP	Minimum Export Price
MMTC	Minerals and Metals Trading Corporation
MGNREGA	Mahatma Gandhi National Rural Employment Guarantee Act
MSP	Minimum Support Price
MSR	Marketed Surplus Ratio
MT	Million Tonnes
NAFED	National Agricultural Cooperative Marketing Federation of India Limited





NBS	Nutrient Based Subsidy
NCAER	National Council of Applied Economic Research
NFSM	National Food Security Mission
NSC	National Seeds Corporation
NWR	Negotiable Warehouse Receipts
OEA	Office of Economic Adviser
OGL	Open General License
OKP	Other Kharif Pulses
OMSS	Open Market Sale Scheme
OWS	Other Welfare Schemes
PACSS	Primary Agricultural Cooperative Societies
PDS	Public Distribution System
PMEAC	Prime Minister's Economic Advisory Council
PSS	Price Support Scheme
Q1, Q2, Q3, Q4	Quarters pertaining to Calendar Year (unless otherwise specified)
Qtl	Quintal
SEAI	Solvent Extractors' Association of India
SEZs	Special Economic Zones
STC	State Trading Corporation
TE	Triennium Ending
TFP	Total Factor Productivity
TRQ	Tariff Rate Quota
USDA	United States Department of Agriculture
VAT	Value Added Tax
VVOF	Directorate of Vanaspati, Vegetable Oils and Fats
WDRA	Warehousing Development and Regulatory Authority
wef	with effect from
WPI	Wholesale Price Index
wrt	with respect to
WTO	World Trade Organization
WPI	Wholesale Price Index
WTO	World Trade Organization



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## Summary of Recommendations

S.1 The Commission has carefully considered the various factors in its broad terms of reference namely, the cost of production of the commodity, overall demand-supply, domestic and international prices, inter-crop parity in returns, a balance in terms of trade between agriculture and non-agriculture sector and their likely impact on the overall prices in the economy. Accordingly, the Commission makes the following non-price and price policy recommendations.

### Non-price Policy Recommendations

#### Strengthening Procurement Infrastructure for Pulses & Oilseeds

S.2 In 2013-14, production of pulses and oilseeds has touched new records. But the prices of these, especially groundnut, have dropped drastically leading to erosion of expected profits to farmers. The prices of groundnut have fallen from around Rs 5000/qtl prevailing last year to Rs 3000-3500/qtl this year. Despite its efforts, NAFED could not bring the groundnut prices to the minimum support price (MSP) level of Rs 4000/qtl. This does not lend credibility to government's MSP policy. There is a lack of supporting marketing and procurement structure for pulses and oilseeds. This may adversely impact on a gradual move that has been underway towards oilseeds and pulses for the last three years or so. The Commission, therefore, recommends



strengthening of the procurement agencies and de-reservation for groundnut processing units (also mustard) from the small scale sector. Also, exports of all edible oils, especially groundnut oil, in bulk should be opened up. If these measures are not taken, then the objective to promote oilseeds production in the country would be difficult to realize and imports of edible oils would keep on rising.

### **Adoption of Negotiable Warehouse Receipts**

S.3 Futuristic marketing arrangements need to be increasingly encouraged especially Negotiable Warehouse Receipts (NWRs). This requires setting up a regulatory framework in which private warehouse owners can be registered, who keep a track of actual stocks, their quality (grading) and the receipts issued against those stocks.

### **Review of Open-ended Procurement Policy for Rice & Wheat**

S.4 A limit needs to be imposed on procurement, especially from states that offer high bonus on top of MSP and those who impose high taxes and statutory levies. This leads to a *de facto* state takeover of the grain markets as has happened in Chhattisgarh (giving a bonus of Rs 300/qtl on paddy) and Andhra Pradesh/Punjab (imposing 19.5% and 14.5% taxes respectively on paddy/rice). This drives accumulation of central pool stocks in excess of the buffer stocking norms as well as requirements under the National Food Security Act. Accounting for the fact that the economic cost of FCI for acquiring, storing and distributing foodgrains is about 40-50 percent more than the procurement price, the locked in extra stocks, particularly for the last five years in a row, has amounted to gross inefficiency in grain management. Thus an urgent streamlining of the entire procurement policy is required.

### **Review of Number of Crops under Commission's mandate**

S.5 The Commission reiterates limiting the number of commodities under its mandate. As the supportive procurement infrastructure is effective only for a few commodities, recommending MSP for all of these commodities does not serve any purpose. It would be more credible if government announces MSP for a limited number of commodities and back it with a robust procurement infrastructure. In the Rabi Report for 2014-15 marketing season, the number indicated was 12. But as most of the state governments announce their own state advised prices for sugarcane, which are very different from the FRP announced by the Centre, making the Central price policy irrelevant, even sugarcane can be removed. In its place, it is better to bring in sorghum to keep the number at twelve, viz., rabi crops of wheat, gram, Rapeseed



& Mustard; kharif crops of paddy, maize, sorghum, tur, soyabean, groundnut, cotton; jute and copra.

## Price Policy Recommendations

S.6 The Commission recommends the following MSPs as given in the table S.1 below. The table also delineates the MSP increases during the last three years to have a medium term perspective of the price policy recommendations.

**Table S.1: Actual and Recommended MSPs of Kharif Crops (Rs/quintal)**

CROP	Recommendation for KMS 2014-15	Justification	KMS 2013-14	KMS 2012-13	KMS 2011-12
Paddy	<b>1360</b> <b>(3.8)</b>	Excessive stocks of rice. Recommended MSP fully covers C2 costs.	1310 (4.8)	1250 (15.7)	1080 (8.0)
Paddy Grade A	<b>1400</b> <b>(4.1)</b>		1345 (5.1)	1280 (15.3)	1110 (7.8)
Jowar-Hybrid	<b>1530</b> <b>(2.0)</b>	In KMS 2012-13, MSP was increased by 53%.	1500 (0.0)	1500 (53.1)	980 (11.4)
Jowar-Maldandi	<b>1550</b> <b>(2.0)</b>		1520 (0.0)	1520 (52.0)	1000 (11.1)
Bajra	<b>1250</b> <b>(0.0)</b>	MSP has been increased by 37% in last three years.	1250 (6.4)	1175 (19.9)	980 (11.4)
Ragi	<b>1550</b> <b>(3.3)</b>	MSP was increased by 43% in KMS 2012-13.	1500 (0.0)	1500 (42.9)	1050 (8.8)
Maize	<b>1310</b> <b>(0.0)</b>	Domestic Prices ruling below existing MSP. Need to fix the procurement system.	1310 (11.5)	1175 (19.9)	980 (11.4)
Tur (Arhar)	<b>4350</b> <b>(1.2)</b>	MSP higher than domestic & international prices.	4300 (11.7)	3850 (4.1)	3700* (5.7)
Moong	<b>4600</b> <b>(2.2)</b>	To keep inter-crop parity within kharif pulses.	4500 (2.3)	4400 (10.0)	4000* (9.0)
Urad	<b>4350</b> <b>(1.2)</b>	MSP higher than domestic & international prices	4300 (0.0)	4300 (13.2)	3800* (11.8)
Groundnut	<b>4000</b> <b>(0.0)</b>	Domestic Prices ruling well below existing MSP. Urgent need to strengthen procurement mechanism.	4000 (8.1)	3700 (37.0)	2700 (17.4)

CROP	Recommendation for KMS 2014-15	Justification	KMS 2013-14	KMS 2012-13	KMS 2011-12
Sunflower	<b>3750 (1.4)</b>	MSP already increased by more than 50% in last three years.	3700 (0.0)	3700 (32.1)	2800 (19.1)
Soyabean (Black)	<b>2500 (0.0)</b>	MSP has been increased by around 65% in last three years.	2500 (13.6)	2200 (33.3)	1650 (17.9)
Soyabean (Yellow)	<b>2560 (0.0)</b>		2560 (14.3)	2240 (32.5)	1690 (17.4)
Sesamum	<b>4600 (2.2)</b>	MSP already increased by about 48% in last three years.	4500 (7.1)	4200 (23.5)	3400 (17.2)
Nigerseed	<b>3600 (2.9)</b>	MSP already increased by about 39% in last three years.	3500 (0.0)	3500 (20.7)	2900 (18.4)
Cotton (Medium- Staple)	<b>3750 (1.4)</b>	In alignment with prevailing international prices	3700 (2.8)	3600 (28.6)	2800 (12.0)
Cotton (Long- Staple)	<b>4050 (1.3)</b>		4000 (2.6)	3900 (18.2)	3300 (10.0)

*\*includes bonus of Rs 500/ql*

*Note: Figures in parentheses are percentage increases over the previous year.*



# Chapter-1

## An Overview

### Performance of Agricultural Sector: Production & Trade

- 1.1 India is set to produce a record 263.2 million tonnes<sup>1</sup> of foodgrains in 2013-14 largely due to a bountiful and spatially well spread monsoon (chart 1.1). Rice and wheat production is expected to attain a new record of 106.2 million tonnes and 95.6 million tonnes in 2013-14. Production of coarse cereals is expected to increase by 4.0 percent as compared to last year. Pulses production is set to touch a record 19.8 million tonnes (an increase of 7.8 percent over last year). The production of total nine oilseeds in 2013-14 is also expected to attain a record 33.0 million tonnes (an increase of 6.6 percent over last year). Cotton, too, is expected to set a record at 35.6 million bales in 2013-14. As per the advance estimates by CSO, agri-GDP growth during the fiscal year 2013-14 (April-March) is going to be around 4.6 percent<sup>2</sup>. However, the Commission's research shows that for the agricultural year (July-June) 2013-14, agri-GDP is likely to be between 5.1-5.6 percent, way above last year's growth of 1.4 percent (revised estimate)<sup>3</sup>. This growth would be largely from oilseeds, pulses, cotton and coarse cereals which are largely rain-fed crops and where good rainfall has been helpful. The second estimates of crop production by the Government do indicate that trend.

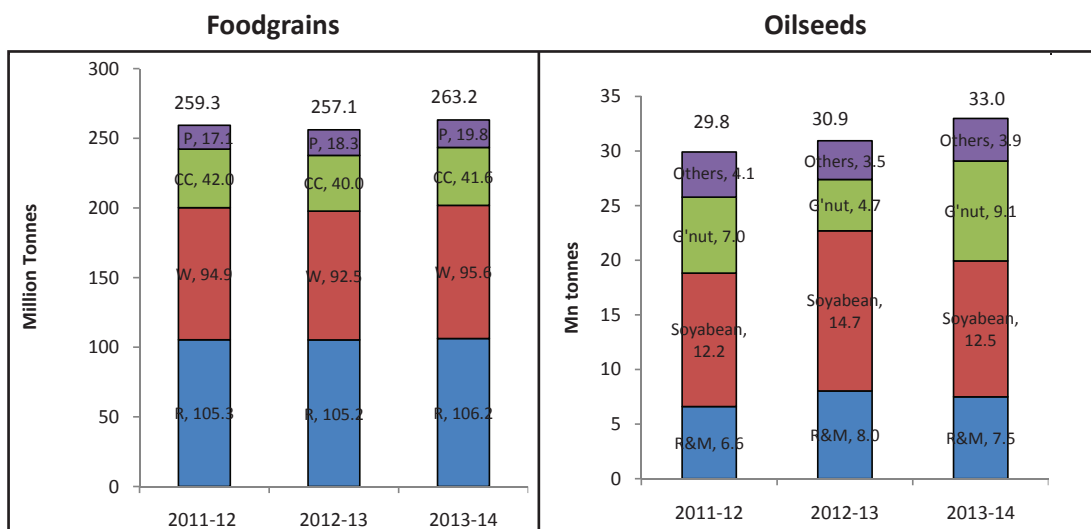
*Agriculture sector set to grow at 4.6% in 2013-14 with record production of foodgrains, pulses, oilseeds and cotton*

<sup>1</sup> Second Advance Estimates of Production of Foodgrains, 2013-14, DAC. Details in annex table 1.1

<sup>2</sup> Advance Estimates of National Income, 2013-14

<sup>3</sup> CACP Discussion Paper No. 8, "Monsoon 2013: Estimating the Impact on Agriculture".

**Chart 1.1: Production of Major Crops**



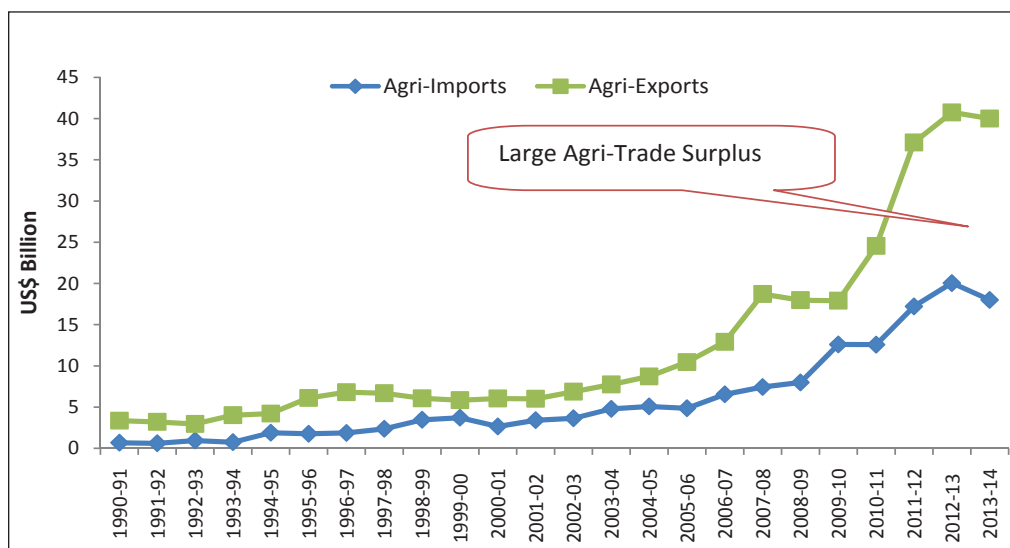
Source: Second Advance Estimates of Production of Foodgrains, 2013-14, DAC

Note: R: Rice; W: Wheat; CC: Coarse Cereals; P: Pulses; R&M: Rapeseed & Mustard

- 1.2 Agri-exports by India during the FY 2012-13 were more than US\$ 41.4 billion against an import of agri-commodities worth US\$ 20.1 billion with the agricultural sector emerging as a large trade surplus sector (chart 1.2). Similar surplus is expected in the year 2013-14 also. As per WTO, India's share in total global exports of agri-products has increased from 0.8 percent in 1990 to 2.6 percent in 2012. India has emerged as the world's largest exporter of rice and guar gum; and second largest exporter of cotton and beef (largely buffalo meat). India exported a record 22 million tonnes of cereals in 2012-13 signifying a large production surplus and competitive advantage.

India exported  
a record 22  
million tonnes  
of cereals in  
2012-13

**Chart 1.2: India's Exports and Imports of Agri-Commodities**



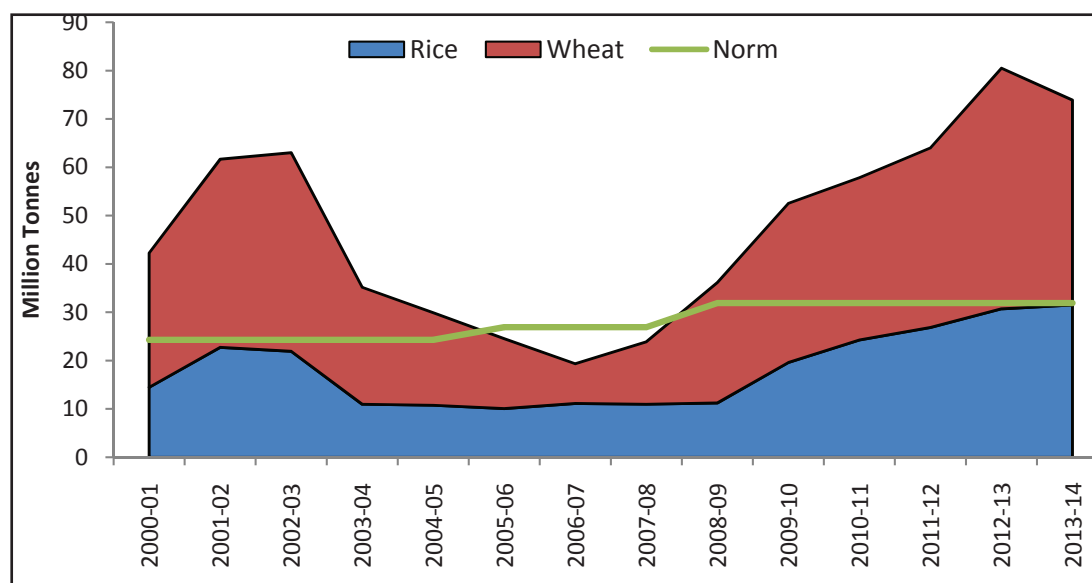
Source: Agricultural Statistics at a glance (various issues) & Department of Commerce

Note: Figures for 2013-14 are expected estimates. Agri-Exports & Agri-Imports were US\$ 31.1 billion and US\$ 13.2 billion respectively for the period Apr-Dec, 2013-14 compared to US\$ 29.1 billion and US\$ 15.1 billion for the same period of 2012-13.

## Excessive Stocks with the Central Pool

1.3 There is excessive availability of stocks with the central pool. As against the buffer stock norm of 31.9 million tonnes of rice & wheat (as on 1st July of each year), total Central Pool stocks were more than double at 73.9 million tonnes (31.5 million tonnes of rice and 42.4 million tonnes of wheat) on 1st July, 2013 (chart 1.3). The situation is not very different as on 1st January, 2014 – with 58.3 million tonnes of central pool stock<sup>4</sup> and more than double the buffer stock norm of 25.0 million tonnes (as on 1st January). Accounting for the fact that the economic cost of FCI for acquiring, storing and distributing foodgrains is about 40-50 percent more than the procurement price, the locked in extra stocks, particularly for the last five years in a row, amount to gross wastage of precious economic resources. This has also resulted in high cereal inflation despite bumper produce and overflowing stocks. It necessitates a thorough review of the open ended procurement policy, especially in states that offer high bonus on top of MSP and those who impose high taxes and statutory levies, as well as stocking and distribution policies that are proving costly to the country.

Chart 1.3: Central Pool Stocks with FCI



*Excessive stocks with the central pool: 58.3 MT compared to a buffer norm of 25 MT on 1<sup>st</sup> January 2014.*

Source: FCI

Note: Stocks are shown as on 1<sup>st</sup> July of each year.

## High Inflation in Cereals and F&V

1.4 India has been experiencing persistent and elevated food inflation over the last few years in the face of bumper crops of food grains and overflowing food stocks. A distinct feature of food price inflation in recent years was the increased contribution of fruits & vegetables (F&V), milk and fish, meat &

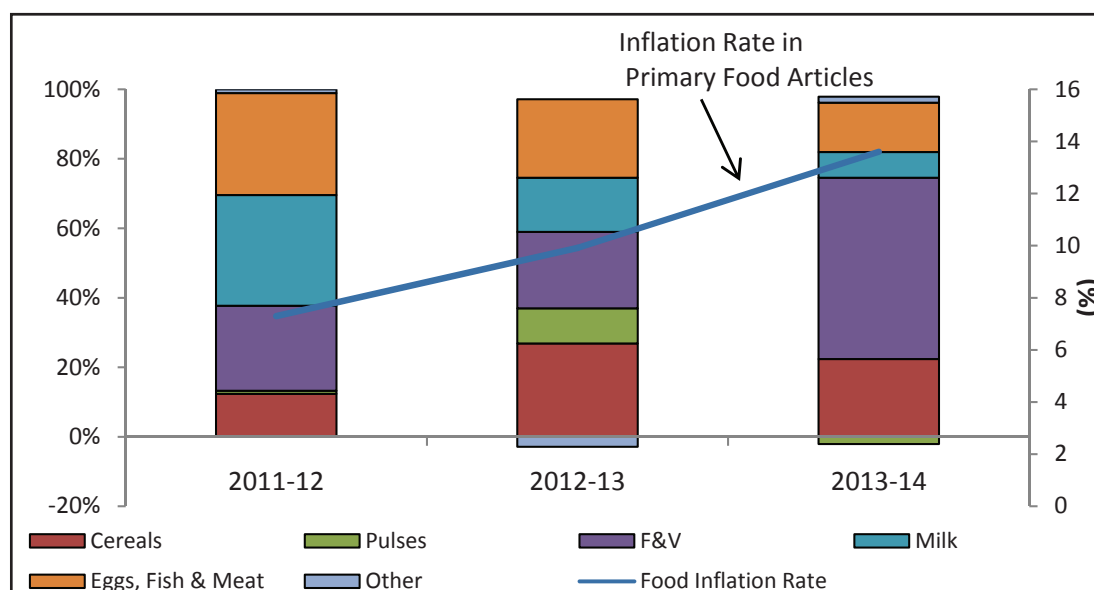
<sup>4</sup> Includes rice, un-milled paddy in terms of rice & wheat



eggs to food inflation vis-à-vis the share of cereals and pulses. But in 2012-13, cereals contributed around 30 percent to food inflation—ahead of all other components (chart 1.4). This was mainly due to sub-optimal grain management with overflowing central pool stocks and government procurement cornering more than 40 percent of the marketed surplus of rice & wheat. In 2013-14 (till December), cereal inflation still contributed around 23 percent to food inflation, which remains high but F&V contributed around 54 percent to food inflation. This was mainly due to seasonal fluctuations in their output due to excess rains and lack of proper marketing & processing infrastructure for such items, particularly onions.

**Chart 1.4: Contribution of Various Items to Inflation in Primary Food Articles**

*In 2013-14, cereals and F&V contributed around 23 percent and 54 percent respectively to food inflation*



Source: Computed from data available from DIPP

Note: The data for 2013-14 is till the month of December, 2013

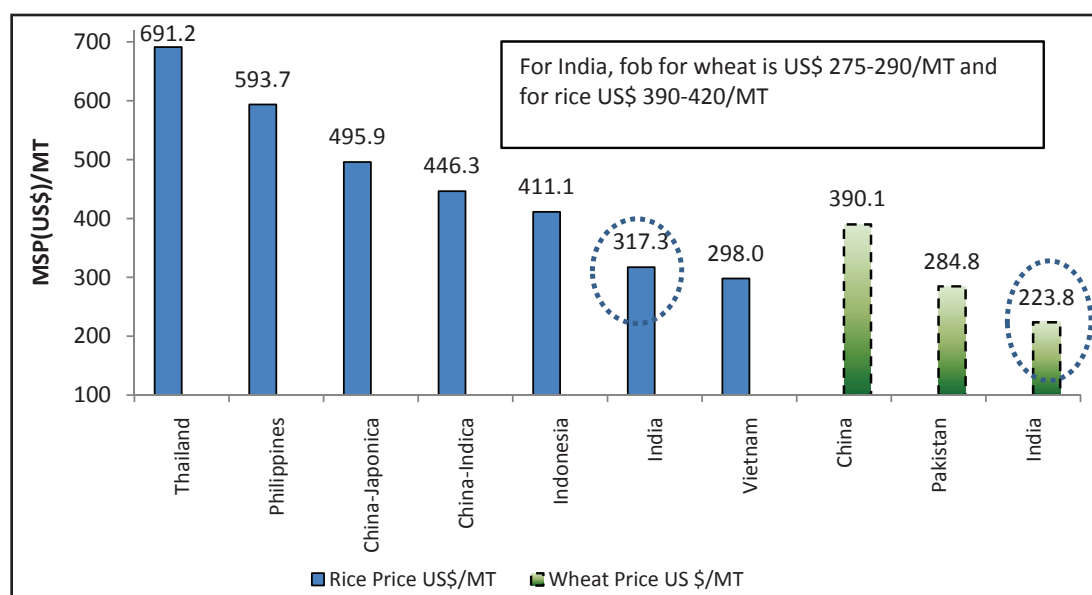
- 1.5 The main factors responsible<sup>5</sup> for high food inflation in recent years are sharp hike in fiscal deficit from 2008-09 onwards (by more than 100% in a single year over 2007-08), which increased overall liquidity and consumption in the country; high global prices of food since 2007-08; and rising nominal farm wages in India largely driven by 'pull factors' of economic growth but also helped by 'push factors' of MGNREGA<sup>6</sup>. In some quarters, there is a perception that food inflation has been stoked by sharp hikes in MSPs. But this does not hold much ground as the MSP mechanism is effective mainly in wheat and rice, and that too in a few states—Punjab, Haryana, Andhra Pradesh, and lately Chhattisgarh and Madhya Pradesh. In the rest of the country, market prices often go below MSP. Also, in an open-economy environment, simple rule of pricing holds that MSPs should be closer to export parity prices (fob) in commodities with

<sup>5</sup> CACP Discussion paper No. 4, "Taming Food Inflation in India"

<sup>6</sup> CACP Discussion Paper No. 5, "Rising Farm Wages in India: The 'Pull' and 'Push' factors"

exportable surplus; and closer to import parity prices (cif) for commodities that are imported. The current fob prices for rice hover between US\$ 390-420/MT and of wheat around US\$ 275-290/MT against MSPs of US\$ 317/MT for rice (derived from paddy) and US\$ 224/MT for wheat. Current MSPs in India are also towards the lower bound in comparison to MSPs in comparator countries in South and South East Asia. For example, India's MSP of rice (derived from paddy) at US\$ 317/MT is way below that of China which ranges between US\$ 446/MT for Indica rice and US\$ 496/MT for Japonica rice. In Thailand, it goes all the way up to US\$ 691/MT. Only Vietnam's rice MSP at US\$ 298/MT is below that of India. Similar is the case in wheat. Chart 1.5 clearly shows that MSPs of wheat and rice have been well within reasonable range of rational pricing principles in an open-economy environment. Food inflation needs to be reined in by containing fiscal deficit aggressively; liquidating excess grain stocks with the government and breaking the oligopoly of commission agents in *mandis* by de-listing fruits and vegetables from APMC Act.

**Chart 1.5: MSP of Rice and Wheat for Selected Countries, 2013**



*MSPs of wheat and rice in India have been well within reasonable range of rational pricing principles in an open-economy environment*

Source: Relevant country websites

Note: The exchange rate is as on 29<sup>th</sup> January, 2014

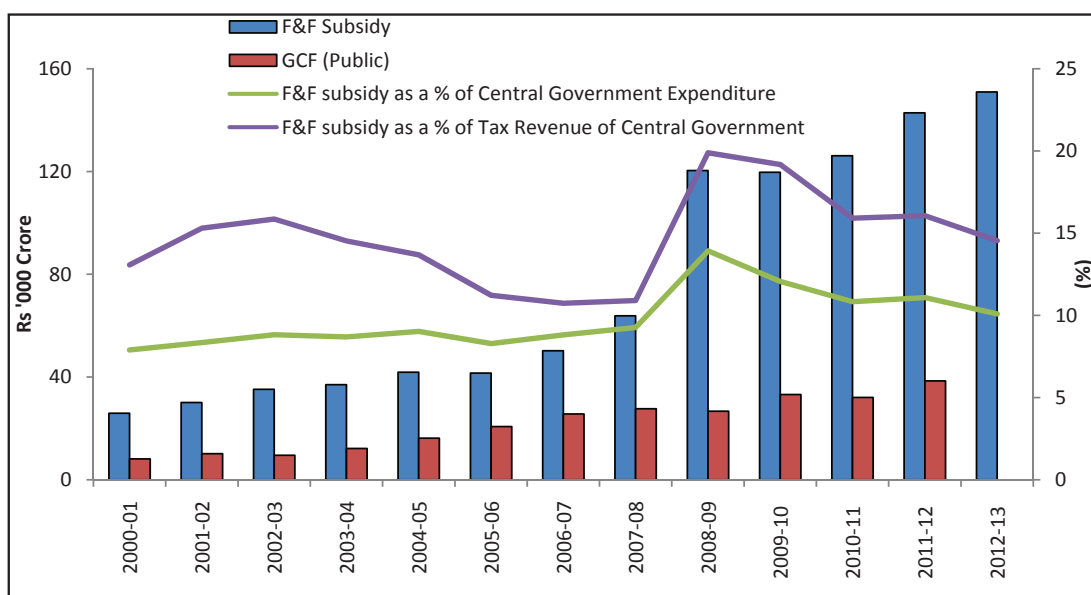
## Rising Food and Fertilizer Subsidies

- 1.6 Together, food and fertilizer subsidies, as a ratio of GDP(agri), accounted for 9.2 percent in 2012-13-up from 6.0 percent in 2000-01.They constitute 10.1 percent of the total Central Government Expenditure in 2012-13 (up from 7.9 percent in 2000-01) and 14.5 percent of total tax revenue of the Central Government in 2012-13 (up from 13.1 percent in 2000-01). In comparison, public investment in agriculture is only around one-fourth of this which is reflective of the imbalance between use of subsidies and investments as policy instruments for agricultural growth (chart 1.6). Subsidies, unless they are

well targeted and are for a limited period, are not equitable & efficient and crowd-out public investment in agriculture research, irrigation, rural roads and power. Additionally, the design of these subsidies has led to major distortions in grain markets, high costs in handling grains, large scale diversions of wheat and rice to non-targeted groups, gold plating in production of fertilizers and imbalanced use of fertilizers. These have resulted in large 'efficiency losses' without achieving commensurate results on equity front. Investments, on the other hand, take time to fructify but result in sustainable growth. This has been corroborated by research which shows that the marginal returns in terms of poverty alleviation or accelerating agricultural growth are much lower from input subsidies than from investments in rural roads or agri-R&D or irrigation or even on health and education. Given fiscal constraints, there is always a trade-off between allocating money through subsidies and increasing investments. So it is high time the focus of public expenditure for agriculture is shifted towards investments to boost productivity rather than subsidies.

*Public investment in agriculture is only around one-fourth of expenditure on food & fertilizer subsidies*

**Chart 1.6: Public Investment in Agriculture versus Food & Fertilizer Subsidies**



Source: CSO, Expenditure Budget, Receipt Budget, Various years

Note: The figures are at current prices; F&F: Food and Fertilizer

## Dilemma of Increasing Production and Falling Prices

1.7 India imported a record US\$ 11.2 billion (Rs 61,106 crore) worth of edible oils and US\$ 2.3 billion (Rs 12,730 crore) worth of pulses in 2012-13. To reduce such dependence, there have been conscious efforts by the Commission to realign the price incentives in favour of oilseeds and pulses and help farmers allocate larger irrigated area for these crops and adopt best technologies/farm practices. Additionally, Government schemes such as NFSM have also led to increased focus on these crops. In 2013-14, production of pulses and oilseeds has touched new records. But the prices of these, especially groundnut and

tur have dropped drastically leading to erosion of expected profits to farmers (details in chapter 2). This may adversely impact on a gradual move that has been underway towards oilseeds and pulses for the last three years or so. There is a lack of proper marketing and procurement structure for pulses, oilseeds, and even coarse cereals, which leads to tumbling of their prices whenever production increases. No transparent grading facilities for these commodities are available in *mandis* leading to further fall of prices on the pretext of lack of quality. Therefore, to sustain the increase in production of pulses and oilseeds, proper grading assessment, storage and warehousing receipt infrastructure has to be developed at State levels so as to give a proper price support to farmers for these crops.

*Lack of proper marketing and procurement structure for pulses and oilseeds leads to tumbling of prices when their production increases*

## Global Outlook

- 1.8 According to FAO Food Outlook, November 2013, food markets were more balanced and less price volatile in 2013 than in recent years. Large supplies pushed down international prices of cereals (with the exception of rice), oils and sugar in 2013. The year 2014 is also expected to be comfortable in terms of production of cereals and oilseeds. According to International Cotton Advisory Committee (ICAC), the divergence between cotton production and consumption is expected to narrow in 2014-15, but there is a significant global supply of cotton and stocks are growing. Therefore, global prices are expected to be subdued for most crops in 2014-15.

## Structure of the Report

- 1.9 The last Kharif Price Policy Report focused on 'getting the markets right' and highlighted the various market distortions for principal kharif crops. This Report focuses on synergizing 'prices' and 'markets'. Accordingly, chapter 2 delineates the demand-supply situation for major kharif crops. Chapter 3 looks at domestic prices in relation to international prices and trade policies with a view to align with international trade. Chapter 4 presents the cost projections for kharif crops. Chapter 5 indicates clearly that increase in yields is the key to cost reduction and increased profitability. Finally in chapter 6, major highlights of all chapters are presented leading to the key price and non-price policy recommendations.

*Global prices are expected to be subdued for most crops in 2014-15*





## Chapter-2

### Demand-Supply Scenario and Efficacy of Price Policy

#### Demand-Supply Scenario

*Given a bountiful rainfall in 2013-14, total estimated production of foodgrains is likely to be a record at 263.2 million tonnes*

- 2.1 Given a bountiful rainfall in 2013-14, total estimated production of foodgrains is likely to be a record at 263.2 million tonnes, which would be an increase of 2.4 percent over 2012-13. Out of this, total rice production in 2013-14, is expected to be 106.2 million tonnes compared to 105.2 million tonnes in 2012-13. Coarse cereals are expected to be 41.6 million tonnes in 2013-14 against 40.0 million tonnes in 2012-13. Total production of pulses in 2013-14 at 19.8 million tonnes is expected to be higher than 18.3 million tonnes in 2012-13. The production of total nine oilseeds in 2013-14 is also expected to attain a record 33.0 million tonnes as against 31.0 million tonnes last year. Groundnut production is expected to take a big jump, from 4.7 million tonnes in 2012-13 to 9.1 million tonnes in 2013-14, a whopping increase of 94.5 percent. Cotton production in 2013-14 is estimated to increase to 35.6 million bales (of 170 Kg each) compared to 34.2 million bales in 2012-13.
- 2.2 Demand for any agricultural produce is dependent on the dynamic factors like population growth, income of the people, prices of the respective commodities

<sup>7</sup> Tentative Second Advance Estimates by DES



and their close substitutes, besides tastes and preferences of the people. Ultimately it is the inter-play of the forces of demand and supply that determines the prices of the respective commodities.

- 2.3 The demand supply situation in this context can be seen from the balance-sheet reflecting on the stock-to-use ratio of each crop. As per general stocking norms of the seasonal crops about 17-20 percent of the production should be in the form of stocks to meet the ongoing demand until arrival of the next crop in the market. The stock-to-use ratios of the major kharif crops, worked out from various sources, for the last three years including 2013- 14, are presented in Table 2.1. Given the difficulty in estimating these stock-to-use ratios, particularly their demand side, these numbers have to be taken with a little caution. Nevertheless, the trends in these ratios can be useful. The stock-to-use ratio for rice remains high and stable while for most of others, the levels remain somewhat low indicating that their prices could be volatile. The negative stock-to-use ratio of maize in 2013-14 is somewhat perplexing as the prices of maize are hovering even below MSP in several markets. As regards pulses, the stock-to-use ratio of tur has more than doubled compared to last year, while those of urad and moong have fallen. In particular, moong seems vulnerable to price volatility. For edible oils and cotton, the levels have remained stable and closer to those for earlier two years.

*The stock-to-use ratio for rice remains high and stable while for most of others, the levels remain somewhat low indicating that their prices could be volatile*

**Table 2.1: Stock-to-Use Ratio of Kharif Crops: 2011-12 to 2013-14**

(In percentage)

Commodity	2011-12	2012-13	2013-14
Rice*	26.84	25.65	22.11
Rice**	24.20	24.04	22.00
Maize	6.40	6.00	-1.29
Tur	1.65	1.47	7.44
Urad	6.96	3.93	-6.09
Moong	7.58	9.71	7.25
Soyabean Oil	13.04	7.80	5.33
Edible Oils	9.66	9.26	8.65
Cotton	10.52	9.10	10.34

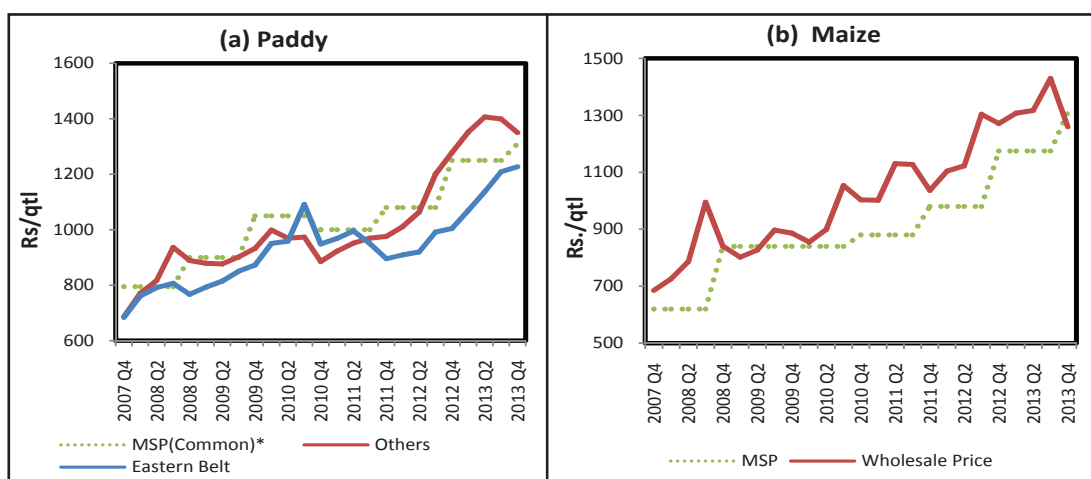
Source: Rice\*- NCAER/DFPD/DES/DGCIS; Rice\*\*- USDA; Maize- NCAER/DES/DGCIS; Tur/Moong/Urad- IPGA/DES; Soyabean Oil- USDA; Edible Oils- NCAER; Cotton- O/o Textile Commissioner

Note: Details are given in annex table 2.1

## Efficacy of the Price Policy

- 2.4 The efficacy of price policy can be seen from the movement of market prices vis-à-vis the MSPs of respective crops. Charts 2.1 (a) to (h) present the movement of wholesale prices vis-à-vis MSPs of paddy, maize, soyabean, groundnut, tur, urad, moong and cotton respectively.

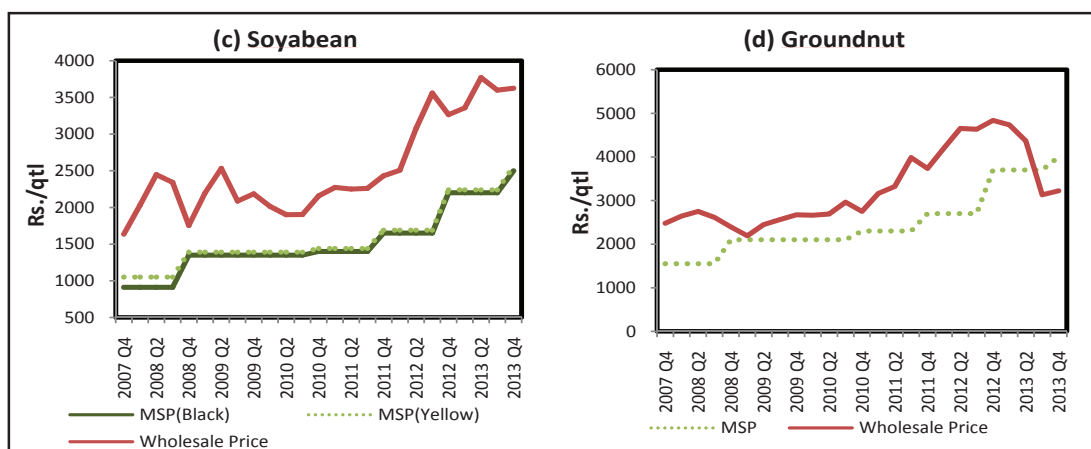
**Chart 2.1: Wholesale Prices of the Crops vis-à-vis MSPs**



Source: DES

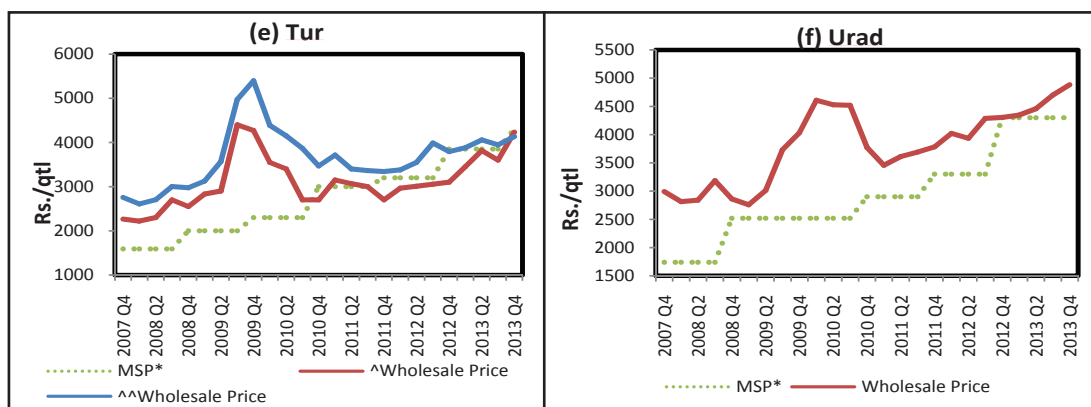
Notes: Average wholesale prices of paddy at AP, Chhattisgarh, Punjab, Karnataka, Tamil Nadu, Maharashtra, Kerala and Gujarat; Average wholesale price of paddy in eastern states of Assam, Bihar, Odisha, UP and West Bengal; wholesale prices of maize at Karnataka and AP.

\*: Additional incentive bonus of Rs. 100/- in 2007-08, Rs. 50/- each in 2008-09 and 2009-10.



Note: Average wholesale prices of Soyabean in MP and of Groundnut in Gujarat

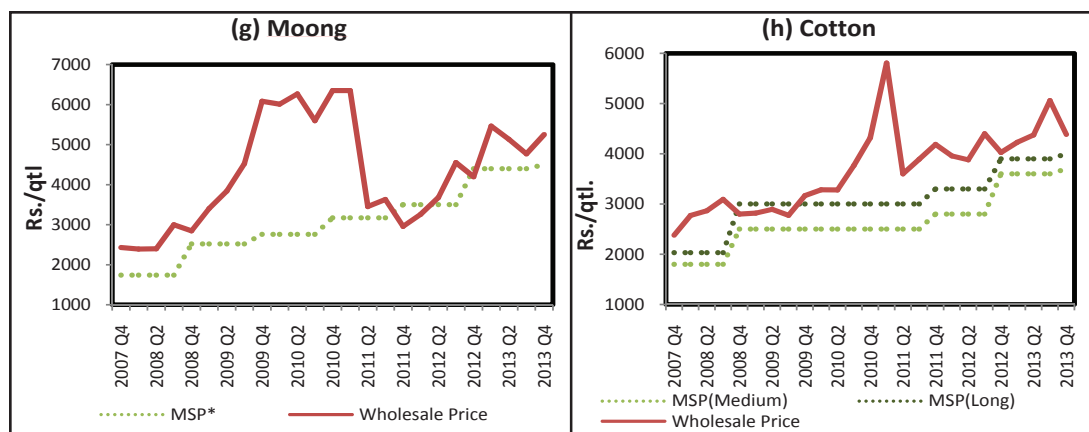
Source: DES



Note: Tur-^For Jalgaon Centre, Maharashtra; ^^For Kolkata, UP, TN, Mah, Kar, Bihar and AP

\*includes Additional incentive of Rs. 40/- in 2007-08; Urad-Wholesale prices of Urad in Kanpur, UP.

Source: DES



Note: Average wholesale price of moong at Rajasthan; Wholesale price of cotton at AP & Gujarat.

\* includes Additional incentive of Rs. 40/- in 2007-08. Source: DES

2.5 The respective charts indicate that market prices of soyabean, urad, moong and cotton have been ruling above their respective MSPs in 2013-14. In case of paddy (eastern belt), tur, maize and groundnut, however, market prices are less than their MSPs in 2013-14. Some of the reasons for market price of paddy running below MSP in Chhattisgarh, AP, Tamil Nadu, Odisha etc. were - relatively better harvesting of paddy during the year; unseasonal rain affecting the quality of paddy (discolouring, sprouting & insect infesting, increased moisture contents etc.); and farmers selling paddy directly to traders to avoid transport cost, cost of gunny bags etc. In Andhra Pradesh it was informed that about 20 percent of paddy was discolored and resulted in broken rice because of heavy rains. In Odisha, limited target for procurement is assigned to each society (10,000 mt per Primary Agricultural Cooperative Societies (PACs)). Farmers therefore tend to prefer selling paddy directly to traders to avoid long waiting at PACs, etc.

*In case of paddy (eastern belt), tur, maize and groundnut, market prices are less than their MSPs in 2013-14*

2.6 In case of tur, it was reported that market price in Jalgaon, Maharashtra, was less than MSP because stocks from last year's crop were being sold, and this year's crop was partially damaged due to heavy rains and could not meet the FAQ norms. The main reason for market price of groundnut going below MSP is bumper harvest of the crop during the year. The estimated kharif groundnut production during 2013-14 is 7.0 million tonnes (total, including rabi groundnut will be more than 9.1 million tonnes) against 3.2 million tonnes in kharif 2012-13. The Commission's field visits also suggest that procurement operations have not been able to lift the market to MSP levels. The ban on exports of groundnut oil in bulk has also been having its impact in terms of lower market price of groundnut in a year of bumper harvest. This is unfortunate and would disincentivize them to make efforts to increase production of oilseeds.

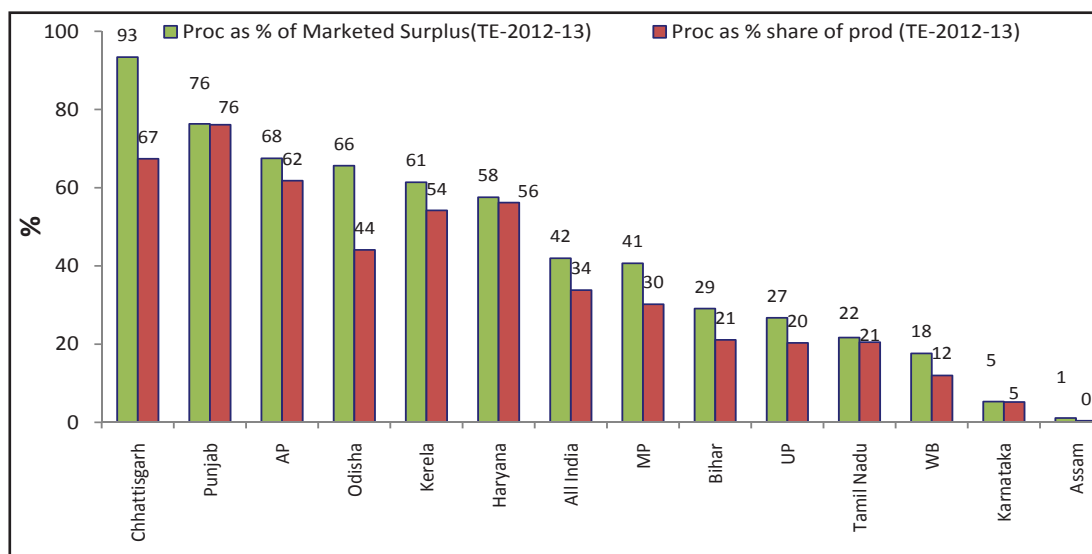
2.7 The production of soyabean during 2013-14 was estimated at 12.5 million tonnes against 14.7 million tonnes last year. This decline in production is partly due to unseasonal rains in Madhya Pradesh and parts of Maharashtra.

## Procurement – Policy and Operation

- 2.8 Although MSPs are announced for 23 crops, actual procurement which is open ended remains largely restricted to few crops like paddy and wheat. Such a situation in procurement alongwith bonus announcement by some states leads to piling up of the grain stocks in the central pool. For instance up to January 2014, total stock of cereals with the Central pool was 58.3 million tonnes, which is more than double the buffer stock norm of 25.0 million tonnes (as on 1<sup>st</sup> January).
- 2.9 As regards bonus, Chhattisgarh has increased its bonus to farmers over and above MSP to Rs 300/qlt in KMS 2013-14 compared to Rs 270/qlt in KMS 2012-13. The outcome of incentivizing farmers through bonus is that 67.4 percent of the rice production in Chhattisgarh is procured under MSP operation which is 93.4 percent of the marketable surplus in the state, leaving very little for the private traders and thus adversely affecting the functioning of a competitive grain market.

*Bonuses and high taxes lead to large scale procurement of rice, driving out private traders and leading to de-facto state take over.*

**Chart 2.2: State-wise Rice Procurement as Percent of Marketed Surplus & Production, TE 2012-13**

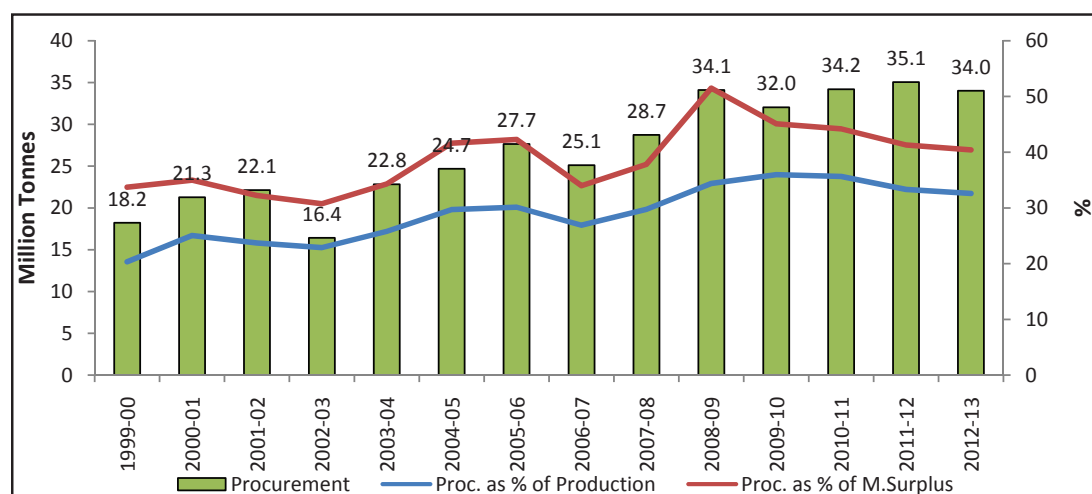


Source: DES, DFPD, Agricultural Statistics at a Glance, 2012

- 2.10 The overall position regarding rice procurement over the years in the country as percentage of production and marketed surplus has been presented in chart 2.3. Rice procurement has increased from 21 million tonnes in 2000-01 to 35 million tonnes in 2011-12 with a slight decline to 34 million tonnes in 2012-13. Procurement as percentage of production is similarly on the increase during these years i.e. from about 25 percent in 2000-01 to about 32 percent in 2012-13. Procurement of rice in such a large scale drives out private traders from the market and thus prevents chances of competitive pricing of the product. It encourages production of crops which are not demand driven. As has been

mentioned in earlier reports, this would be at the cost of other more essential crops like oilseeds and pulses.

**Chart 2.3: Rice Procurement as Percent of Production & Marketed Surplus**

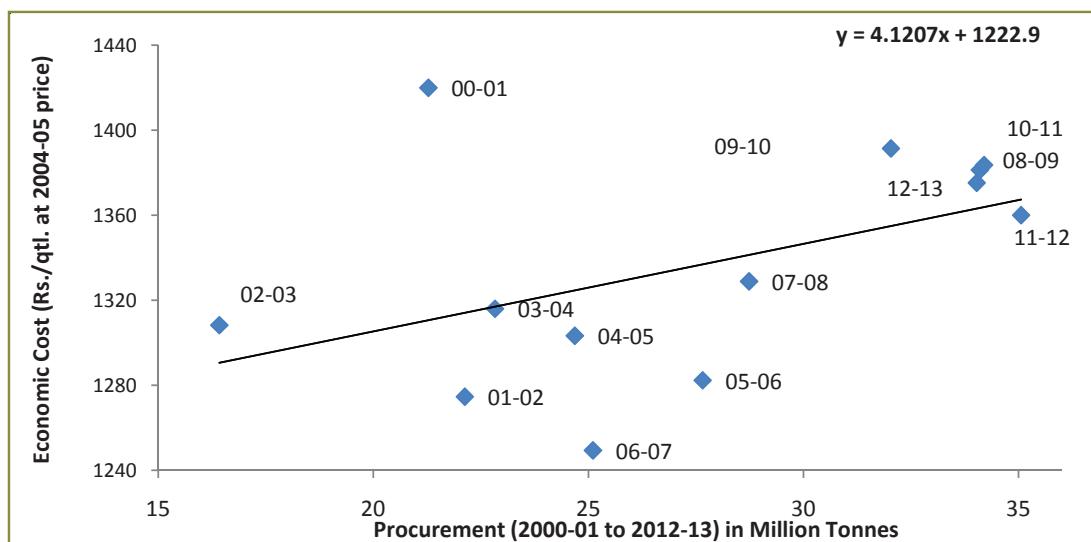


Source: DES, DFPD, Agricultural Statistics at a Glance, 2012

Note: MSR is available upto 2010-11 only and repeated for the years after 2010-11

2.11 Increase in procurement without corresponding adequate liquidation of stock has been leading to continuous increase in the economic cost of procurement. As per FCI, economic cost per quintal of rice was Rs 2918 per quintal in KMS 2013-14 against MSP of Rs 1955<sup>8</sup> per quintal. Thus, the economic cost for procurement of rice is around 50 percent more than the MSP indicating diseconomies of scale in FCI operations (chart 2.4).

Total central pool stocks as on 1<sup>st</sup> July 2013 were 73.9 million tonnes but covered storage facility available was only 54.5 million tonnes



Source: FCI

2.12 During last few years due to increased procurement and limited liquidation {through Public Distribution System (PDS), Other Welfare Schemes (OWS) and

<sup>8</sup> MSP for rice has been estimated using a conversion factor of 0.67 on the MSP for paddy



Open Market Sales Schemes (OMSS) etc.), central pool stock level has continuously increased. This has put pressure on the existing storage facilities as well. Total central pool stocks as on 1<sup>st</sup> July 2013 were 73.9 million tonnes but covered storage facility available was only for 54.5 million tonnes. Therefore, a good proportion of grains procured is stored in open and is exposed to damage in terms of moisture, rain etc. Large scale procurement and limited liquidation also creates a situation of artificial shortage and induces food price inflation in the economy.

- 2.13 The Commission therefore reiterates the need for revisiting the policy of open ended procurement by FCI. It should act as a storehouse of foodgrains only to justify its mandate of supporting MSP (if need arises), ensuring buffer norms and catering to the need of PDS.

### Negotiable Warehouse Receipt System (NWRs)

- 2.14 With the enactment of Warehousing (Development and Regulation) Act, 2007 which came into force from 25.10.2010, Negotiable Warehouse Receipt System (NWR) was introduced in the country. While the main objective of WDRA is to encourage involvement of private players in warehousing, the NWRs issued by the warehouses registered under this Act are expected to help farmers in seeking loans from banks against NWRs to avoid distress sale of agricultural produce and in lessening the storage burden of FCI. So far 115 agricultural commodities including cereals, pulses, oilseeds, vegetable oils, spices, edible nuts and other miscellaneous items have been notified by the authority for issuance of NWRs. Keeping in view the relevance of the NWR system in dealing with the situation of scarce storage capacity with FCI and curtail the burgeoning carrying cost of FCI, the Commission recommends that the instrument of NWR, which is going to be the approach for futuristic market of agricultural produce, needs to be popularized and encouraged on a larger scale, with due regulatory framework keeping a track of actual stocks, their quality (grading) and the receipts issued against those stocks.

*Negotiable Warehousing Receipts needs to be popularized and encouraged on a larger scale, with due regulatory framework in place.*

### Market Distortions

- 2.15 As outlined extensively in the Commission's report for Kharif 2013-14 and Rabi report for 2014-15 Indian agricultural market is currently burdened by a host of controls and regulations. Reforming/removing these distortions for "getting the market right", which has been the main focus of Kharif Report 2013-14 and Rabi Report 2014-15 has to be accorded top priority.
- 2.16 In this report apart from six parameters contributing to distortion in rice/paddy market (as discussed in Kharif report 2013-14) two more parameters viz. regulated market gap and road density as a proxy for connectivity have

been added bringing the total factors that account for market distortion to the following eight: State specific bonuses; Statutory levy on millers and dealers; Stock limits of commodities on millers, dealers/wholesalers and retailers under Essential Commodities Act, 1955; taxes/fees/commissions etc.; Market reforms under APMC Act; Regulated market gap and road density as a proxy for connectivity<sup>9</sup>.

(a) *State specific bonuses*

2.17 Some States have been paying bonus to the farmers over and above MSP irrespective of its adverse effect on market competitiveness (table 2.2). The amount of bonus works out to 23 percent of MSP in Chhattisgarh, 22 percent of MSP in Karnataka and 37 percent of MSP in Kerala. As mentioned earlier, payment of bonus in such high proportion drastically restricts the chance of involvement of private traders and prevents scope for competition in the business, which otherwise could be to the advantage of the farmers apart from encouraging transportation of paddy from other regions to bonus paying States as indicated in the Commission's Report for KMS 2013-14. For example, there are reports from farmers that paddy is flowing from Uttar Pradesh and Odisha to Chhattisgarh.

*Bonus to the farmers over and above MSP has an adverse effect on market competitiveness*

**Table 2.2: State-specific Bonus on Paddy (Rs/qttl)**

Sl. No	State	2010-11		2011-12		2012-13		2013-14	
		KMS	RMS	KMS	RMS	KMS	RMS	KMS	RMS
1	CHHATTISGARH	50	-	50	-	270	-	300	-
2	HP	-	-	-	50	-	-	-	-
3	KARNATAKA #	100	-	250	-	250	-	290	-
4	KERALA	400	-	420	-	450	-	490	-
5	MP	Comm. = 50	100	Comm. = 50	100	50	100	Comm.=150	-
		Grade A = 50	-	Grade A = 50	-	-	-	Grade A=150	-
6	TAMILNADU	Comm. = 50	-	Comm. = 50	-	Comm. = 50	-	Comm.=50	-
		Grade A = 70	-	Grade A = 70	-	Grade A = 70	-	Grade A=70	-
7	UP	-	-	-	50	-	-	-	-

# Bonus in Karnataka is per farmer for 100 qtls only up to 31.01.11, 29.02.12 and 31.03.13 for crop year 2010-11, 2011-12 and 2012-13 respectively.

Source: FCI and States

<sup>9</sup> For detailed discussion on all the above parameters Kharif report 2013-14 and Rabi report 2014-15 may be referred.

*Levy on rice should be abolished like abolition of levy on sugar*

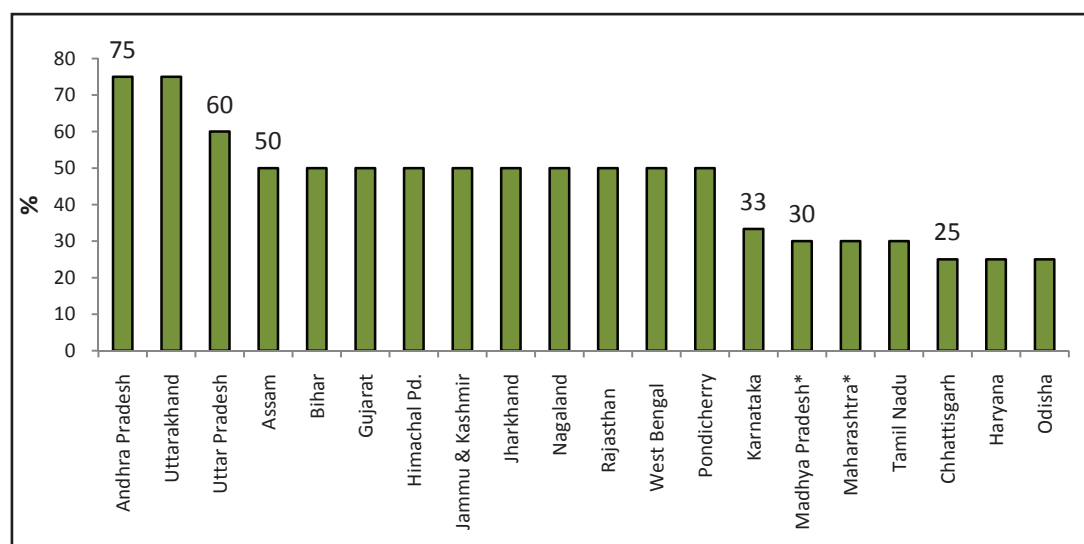
2.18 The Commission therefore recommends that as a part of market reform states should discontinue the practice of price support to the farmers through bonus. If at all any subsidy is to be given it should be in the form of a crop-neutral direct investment support on per hectare basis to all the farmers. This investment support on the basis of per hectare of cultivated area has the potential of encouraging farmers to choose demand driven crops which can get them better price and higher income without distorting the markets.

(b) *Statutory levy on millers and dealers*

2.19 The varying percentage rate of levy from State to State, which is the main source of rice stock in central pool, is presented in chart 2.5. However, in a situation of abundant foodgrain production imposition of levy does not appear imperative, but rather leads to market distortion. Imposition of levy restricts the scope for free trade of the goods in the market. The Commission, therefore, in its report “Price Policy for Kharif Crops – the Marketing Season 2013-14” had recommended for abolition of the system of levy on rice. The Commission appreciates that Central Government (Department of Food and Public Distribution) has already issued the order dated 6<sup>th</sup> May 2013 directing the state governments not to impose any levy on rice from the millers exceeding 25 percent of the rice purchased or processed or held by the millers wef 1<sup>st</sup> October 2013. Many states accordingly have reduced the rate of levy on rice. For instance Haryana and Odisha have reduced the levy rate from 75 percent in 2012-13 to 25 percent in 2013-14. Chhattisgarh has brought down the levy rate from 50 percent in KMS 2012-13 to 25 percent in KMS 2013-14. Punjab also had earlier 75 percent levy on millers,

but through a decision by the State Cabinet has exempted millers from the levy rice. No further order has been issued by the state for renewal of the levy

**Chart 2.5: State-wise Levy Rates of Rice for KMS 2013-14**



\*Optional

Source: FCI, States

system. Meanwhile, however due to representation, based on anticipated difficulties to be faced by some states, the Central Government has deferred the compliance of the direction regarding reduction of the percentage of levy on millers for the KMS 2013-14 vide an order dated 9<sup>th</sup> October 2013. The Commission considers the steps taken by some states to reduce levy rate as role model for other states to follow. The Commission also recommends that Central Government's decision to reduce the rate of levy is a bold initiative and a step in right direction. It should not be deferred further and levy on rice should be abolished like abolition of levy on sugar done earlier.

(c) *Stock limits of commodities on millers, dealers/wholesalers and retailers*

2.20 The existing market distorting fixation of Stock limits of pulses, edible oils, edible oilseeds, rice and paddy by some states have been presented in the table 2.3. The Commission has been recommending that fixation of stock limits in a normal year or in a year of plenty may not be in the interest of both consumers and farmers and should be done away with. This hampers large scale private investments in storage and warehousing and therefore stocking limits should be done away with.

*Stock Limits hamper large scale private investments in storage and warehousing*

**Table 2.3: State-wise Stock Limits**

(In qtl.)

Sl. No.	States/UTs	Pulses	Edible Oils	Edible Oilseeds	Rice	Paddy
1	A.P.	W:1000-2000	W:375-900	W:1200-2250	W:250-1000	W:750
		R:40-50	R:30-100	R:75-150	R:50-100	R150
2	Bihar	MC*:750	MC:500	MC:1000		
		OA**.:500	OA250	OA:500		
3	Chhattisgarh	D^:1000	D:1000	D:500		
		CA^^:1000	C:1000	CA:500		
4	Gujarat	W:1000	W:600	W:2000		
		R:50	R:45	R:100		
5	Goa	W:500	W:350	W:500		
		R:30	R:10	R:50		
6	Haryana	W:500	W:1500	W:1500		
		R:50	R:25	R:25		
7	Jharkhand	W:500	W:300-500	W:50-1000	W:1000	W:1000
				75-2000		
8	Karnataka	W:2000	W:1200	W:2000		
		R:50-200	R:50	R:50		
9	Kerala	W:1000				
		R:20				
10	Maharashtra	W:1500-3500	W:300-1000	W:800-2000	W:2000-3500	W:2000-3500
		R:150-250	R:20-40	R:100-200	R:100-200	R:100-200

Sl. No.	States/UTs	Pulses	Edible Oils	Edible Oilseeds	Rice	Paddy
11	Odisha	W:500	W:500	W:300		
		R:20	R:10	R:20		
12	Punjab	W:10000	W:1000	N.A.	W:5000	
		R:500	R:40		R:500	
13	Rajasthan	W:1000#				
		R:30				
14	Tamil Nadu	W:2500-5000	W:250-600	W:500-1500	W:2000	
		R:100-125	R:08-20	R:50-100	R:400	
15	U.P.	W:1500	W:750	W:1000	W:1500	
		R:50	R:50	R:50	R:50	
		CA:1500	CA:750	CA:1000	CA:1500	

Note: \*MC: Municipal Corporation, \*\*OA: Other Areas; ^D: Dealer ^^CA: Commission Agent; # excluding Gram Dal, Stock Limit of which is 3000 qtl; W: wholesaler; R: Retailer.

Source: Department of Consumer Affairs, DFPD (VVOF)

#### (d) Taxes and Other Incidentals

2.21 The Commission has been highlighting that statutory levies/*mandi* tax, VAT etc. are a major source of market distortion and should be discontinued forthwith. Total of these taxes and/levies of some major states and their impact on the procurement price has been shown in the table 2.4.

**Table 2.4: Taxes and Other Incidentals as Percent of MSP**

Sl.No.	States	Taxes & Other Incidentals on Rice/Paddy (%)	Paddy Price after tax over MSP of Rs 1310/ qtl.
1	Andhra Pradesh*	19.5	1565.45
2	Bihar	6.5	1395.15
3	Chhattisgarh	9.7	1437.07
4	Gujarat	3.5	1355.85
5	Haryana	11.5	1460.65
6	Jharkhand	3.5	1355.85
7	Karnataka	4	1362.40
8	Madhya pd	4.7	1371.57
9	Maharashtra	3.55	1356.51
10	Odisha*	15.5	1513.05
11	Punjab	14.5	1499.95
12	Rajasthan	3.6	1357.16
13	Uttar pd.	9	1427.90
14	Uttarakhand	9	1427.90
15	West Bengal	3	1349.30

Note: \* taxes, incidentals do not include mandi labour charges and milling charges

Source: FCI, DFPD and States (in respect of Andhra Pradesh and Odisha)



- 2.22 While Andhra Pradesh tops the list with total of as high as 19.5 percent taxes/levies on paddy/rice, other states where total of the taxes/levies is 10 percent or above are Haryana, Punjab and Odisha. As a result of the taxes/levies etc., alone procurement price of paddy increases from the MSP of Rs.1310/ql to Rs. 1565/ql in Andhra Pradesh, Rs. 1513/ql in Odisha, Rs.1500/ql in Punjab and Rs.1461/ql in Haryana. It clearly reflects that the practice by state to impose levies/taxes etc., leads to increase in the cost of procurement, loss of competitiveness in crops procured and wastage of resources by the Government. The Commission therefore recommends either abolishing these taxes/levies or bringing it down to 5 percent of MSP.

*(e) Market reforms under APMC Act*

- 2.23 Monopoly of Government regulated wholesale markets has prevented development of a competitive marketing system in the country which is necessary for an effective linkage between farm production and retail chains. Accordingly, a model APMC Act was formulated by the Ministry of Agriculture in 2003 and circulated to the States/UTs for adoption.
- 2.24 As on 31.12.2013 states like Gujarat, Jharkhand, Himachal Pradesh, Karnataka and Rajasthan have carried out all the reforms under Model APMC Act. States/UTs where reforms have been done partially are Andhra Pradesh, Assam, Chhattisgarh, Haryana, Madhya Pradesh, Maharashtra, Odisha, Punjab and Uttarakhand. States where there is no APMC Act are Kerala and Bihar (APMC Act repealed in 2006). Tamil Nadu has done reforms by executive orders instead of amending APMC Act. States where reforms are required to be done are West Bengal and Uttar Pradesh.

*(f) Regulated market gap*

- 2.25 Closer proximity of the market to farmers reduces the chances of their being exploited by local traders. National Commission on Agriculture (1976) had recommended a norm of one market in the radius of 5 km in a state. Given the improvement in transport and road infrastructure, this needs to be thoroughly revisited. Overall ranking of states based on various indices including index of regulated market gaps is dealt separately in this chapter.

*(g) Road density*

- 2.26 Development of transport facility reduces the distance between farm and markets, helping farmers to avail better price for their produce; else they are exposed to exploitation by local traders. Road connectivity therefore is inversely related to market distortion and accordingly inverse of road density index has been taken while calculating the overall state-wise ranking in the following paragraphs.

### **Ranking of states based on market distortion in paddy and rice market**

- 2.27 Taking forward the exercise regarding ranking of states based on market distortion in paddy and rice market from the Commission's Kharif Report of

Top five states with competitive market in paddy and rice are Assam, Himachal Pradesh, Gujarat, Maharashtra and Karnataka

2013-14, ranking has been done for 18 states on the basis of 8 parameters which discourage competitive efficiency in the agriculture marketing (table 2.5). For the detailed methodology of ranking based on the composite index of eight indices prepared for each parameter of distortion, the Commission's Rabi report 2014-15 may be referred to. State-wise data on eight parameters of market distortion in respect of paddy/rice are given in annex table 2.2.

- 2.28 As per the final ranking top five states in green category denoting competitive market in paddy and rice are Assam, Himachal Pradesh, Gujarat, Maharashtra and Karnataka. The next five states falling in middle category (amber) are West Bengal, Tamil Nadu, Bihar, Punjab and Kerala. The least competitive eight states falling in red zone are Haryana, Madhya Pradesh, Odisha, Jharkhand, Uttarakhand, Chhattisgarh, Uttar Pradesh and Andhra Pradesh. Thus, Assam with no taxes, no bonus, no stock limit and low procurement, is the most competitive market in paddy and rice whereas Andhra Pradesh with high taxes, more than 50 percent procurement, low stock limit and high levy is the least competitive paddy and rice market in the country.

**Table 2.5: Nature & Degree of Market Distortions - Paddy/Rice**

Sl No	State	Tax Index	Bonus Index	Proc as % share in prod (2012-13) Index	Index of Inverse Stock Limit	Levy Index	Market Reforms Index	Regulated Market Gap Index	Inverse Road Density Index	Avg. Index (3+4+5+6+7+8+9+10) /8	Rank
1	2	3	4	5	6	7	8	9	10	11	12
1	Assam	0.00	0.00	0.01	0.00	0.67	0.43	0.66	0.04	0.22	1
2	Himachal Pd	0.00	0.00	0.01	0.00	0.67	0.00	0.89	0.31	0.23	2
3	Gujarat	0.18	0.00	0.00	0.00	0.67	0.00	0.76	0.34	0.24	3
4	Maharashtra	0.18	0.00	0.07	0.27	0.40	0.14	0.66	0.18	0.24	4
5	Karnataka	0.21	0.59	0.02	0.00	0.44	0.00	0.69	0.16	0.26	5
6	West Bengal	0.15	0.00	0.14	0.00	0.67	1.00	0.09	0.03	0.26	6
7	Tamil Nadu	0.00	0.12	0.13	0.65	0.40	0.00	0.73	0.15	0.27	7
8	Bihar	0.33	0.00	0.21	0.00	0.67	0.00	1.00	0.17	0.30	8
9	Punjab	0.74	0.00	0.88	0.28	0.00	0.43	0.00	0.13	0.31	9
10	Kerala	0.00	1.00	0.53	0.00	0.00	0.00	1.00	0.00	0.32	10
11	Haryana	0.59	0.00	0.77	0.00	0.33	0.57	0.24	0.28	0.35	11
12	Madhya Pd.	0.24	0.31	0.38	0.00	0.40	0.29	0.80	0.44	0.36	12
13	Odisha*	0.79	0.00	0.55	0.00	0.33	0.71	0.67	0.13	0.40	13
14	Jharkhand	0.18	0.00	0.08	0.78	0.67	0.00	0.70	1.00	0.43	14
15	Uttarakhand	0.46	0.00	1.00	0.00	1.00	0.14	0.87	0.28	0.47	15
16	Chhattisgarh	0.50	0.61	0.85	0.00	0.33	0.57	0.84	0.40	0.51	16
17	Uttar Pd.	0.46	0.00	0.19	1.00	0.80	1.00	0.70	0.14	0.53	17
18	Andhra Pd*	1.00	0.00	0.69	1.00	1.00	0.14	0.61	0.31	0.59	18

Notes: i. \*Data regarding taxes/levies etc. are sourced from states and excluding mandi labour charges and milling charges.

ii. Methodology of Ranking of states based on Market Friendliness Index reflecting market distortion in paddy/ rice market in India may be referred to the Price Policy for Rabi Report: RMS 2014-15 (Chapter 2 & Annex 2.3).

Sources: DAC, FCI, DFPD, Department of Consumer Affairs, Directorate of Agricultural Marketing; Faridabad, MoRTH and State replies.

## Summary of Recommendations

2.29 Based on the above the Commission would like to make the following recommendations:

- i) The practice of open ended procurement of the commodities covered under MSP should be discontinued to avoid carrying cost of surplus buffer stock and states should not have any restriction on the inter-state movement of agricultural goods in a move to have a unified agricultural market in the country.
- ii) India needs to change its policy direction first by correcting the factors which contribute to market distortion and then by adopting measures that encourage demand driven crop diversification. Any support to be given to the farmers should be in the form of investment support based on per hectare basis, which is crop neutral, rather than price support. Investment support on the basis of per hectare of cultivated area has the potential of encouraging farmers to choose demand driven crops which can get them better price and higher income without distorting the markets.
- iii) Central Government's decision to reduce the rate of levy is a bold initiative and step in right direction. It should not be deferred further and levy on rice should be abolished, as has been done in case of sugar.
- iv) The instrument of NWR which is a futuristic market approach of agricultural produce needs to be popularized and encouraged on a larger scale, with due regulatory framework in place to track the actual stocks, their quality (grading) and receipts issued.





## Chapter-3

# India's Trade Competitiveness

*India is a net exporter of agricultural commodities whereas it is a net importer in overall trade*

- 3.1 India has the second biggest agri-GDP in the world with a share of about 14 percent in global agri-GDP in 2012<sup>10</sup>. Its share in total global agri- exports is 2.6 percent in 2012. India is a net exporter of agricultural commodities whereas it is a net importer in overall trade. Its exports of agricultural commodities viz., cotton (raw), guar gum meal, oilmeals, meat and meat preparations, sugar and maize have shown remarkable growth during last few years. Exports of rice and wheat have also increased substantially since September, 2011 when exports of common rice and wheat were opened up. India has emerged as the world's top exporter of rice in 2012-13 with an export of 10.2 million tonnes worth US\$ 6.2 billion. Agricultural exports have performed better than overall exports during 2011-12 and 2012-13. Overall exports have declined in 2012-13 by (-) 1.8 percent, whereas agricultural exports have shown a growth of 10.4 percent in 2012-13 on top of 51.5 per cent growth achieved in 2011-12. Major agricultural import commodities are edible oils, pulses and wood products. Edible oil is the single biggest item of agricultural imports accounting for about 56 percent of total agricultural imports in 2012-13 in value terms. India imported about 10.8 million tonnes of edible oil in 2012-13 and is likely to import about 10.5 – 11.0 million tonnes of edible oil in 2013-14.

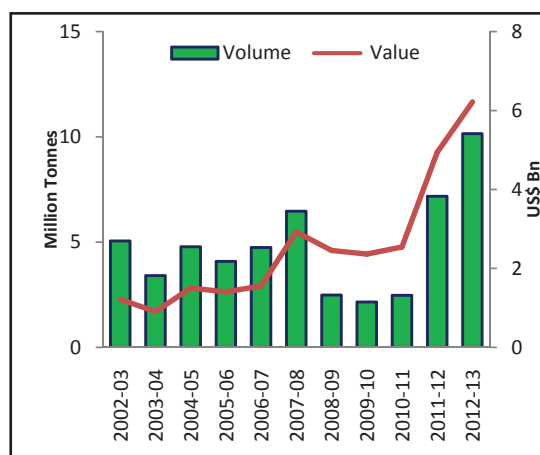
<sup>10</sup> Interestingly, share of agriculture in India's overall GDP in real terms is also around 14% in 2012-13.

3.2 India's agricultural exports have increased from US\$ 6.0 billion in 2001-02 to US\$ 41.4 billion in 2012-13 whereas agricultural imports have increased from US\$ 3.4 billion in 2001-02 to US\$ 20.1 billion in 2012-13. Net agricultural exports have increased from US\$ 2.6 billion in 2001-02 to US\$ 21.3 billion in 2012-13. Agricultural exports constitute 13.8 percent of India's total exports whereas agricultural imports constitute only 4.1 percent of India's total imports in 2012-13. India's agri-exports have increased from US\$ 29.1 billion in 2012-13 (April-December) to US\$ 31.1 billion in 2013-14 (April-December) with a growth rate of 6.8 percent. However, India's agri-imports have decreased from US\$ 15.1 billion in 2012-13 (April-December) to US\$ 13.2 billion in 2013-14 (April-December) which is a decline of (-) 13.0 percent.

## CEREALS - Rice

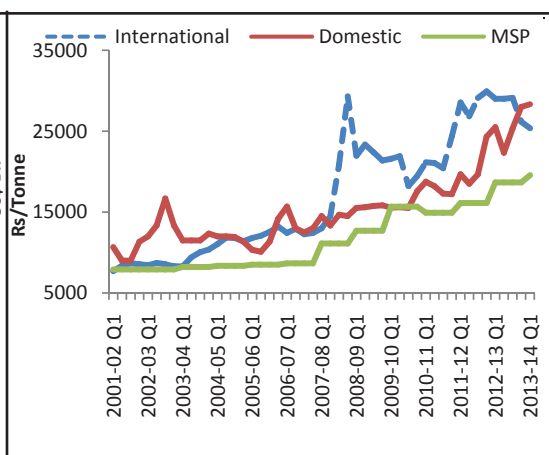
3.3 India has emerged as the biggest exporter of rice in the world in 2012-13. Exports of non-basmati rice were banned since April 2008 and were opened from September, 2011. Since then India has exported record 7.2 million tonnes in FY 2011-12 and 10.2 million tonnes in FY 2012-13 (chart 3.1). From 2001-02 to 2007-08 (Q1), the domestic wholesale prices were generally higher than international prices but from 2007-08 (Q2) to 2012-13 (Q3), they have been continuously lower than the international prices (chart 3.2). It may be observed that MSP of paddy converted to rice has been continuously lower than domestic wholesale prices of rice during the same period.

**Chart 3.1: India's Exports of Rice  
From 2002-03 to 2012-13**



Source: DGCI&S

**Chart 3.2: Domestic Wholesale Prices  
versus International Prices of Rice**



Source: World Bank for International prices and DES for Domestic wholesale prices

Note: Rice (Thailand), 25% broken, WR, milled indicative survey price, Government standard, f.o.b. Bangkok  
Quarters refer to marketing year (Oct-Sep)



*India has emerged as the world's largest rice exporter since September 2011, when exports were opened up*

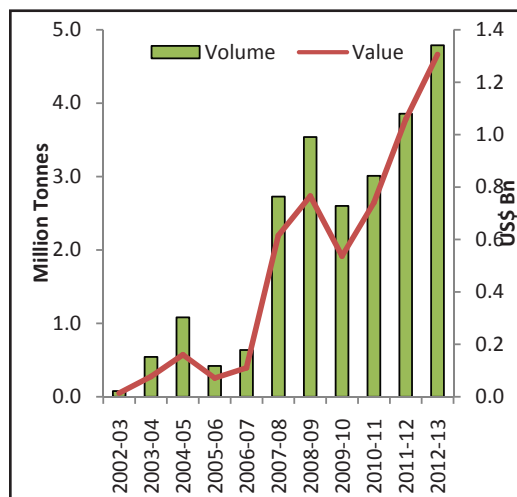
- 3.4 Exports of non-basmati rice from the country were banned vide DGFT notification dated 15.10.2007. However, vide DGFT notification dated 31.10.2007, the ban on export of rice was replaced with Minimum Export Price (MEP) regulation of US\$ 425. Subsequently, the MEP was revised from time to time. Exports of rice from Central Pool were discontinued vide order dated 25.03.2008. Export of non-basmati rice on private account was also prohibited with effect from 01.04.2008 in view of the tight position of rice in the domestic market. This ban continued till 11.07.2011 when exports of 1 million tonnes of non-basmati rice on private account were allowed with a MEP of US\$ 425. On 08.09.2011, exports of non-basmati rice were allowed under Open General License (OGL) by private parties out of privately held stocks and have been continued thereafter. India has emerged as the world's largest rice exporter since then. Regarding imports, import duties of 80 per cent for husked rice & broken rice and 70 percent for milled and semi-milled rice were imposed on April 1, 2000. In view of tight position of rice in the domestic market, import duty on milled and semi-milled rice was allowed at zero percent from 01.03.2008 to 01.04.2009. With some intermittent relaxations, import duty on rice remains at 70-80 percent. This defies any economic rationality that world's biggest exporter of rice has an import duty of 70-80 percent, which in fact is totally unnecessary.

*Exports of maize have increased substantially from 2007-08*

### **Maize (Corn)**

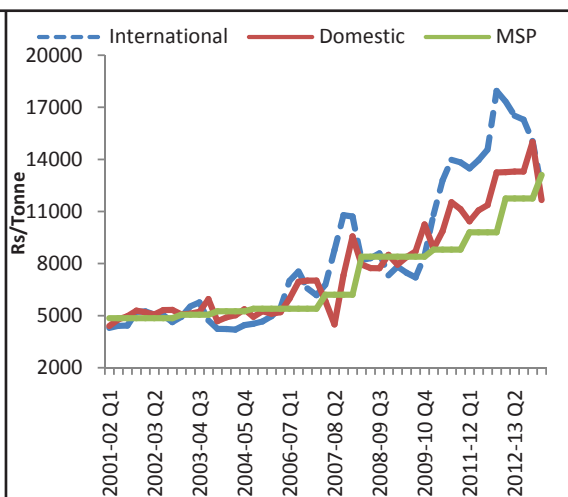
- 3.5 As per DGCI&S, India's exports of maize have increased from a small quantity of 0.1 million tonnes in 2002-03 to 4.8 million tonnes in 2012-13 (chart 3.3). Maize exports have been boosted by increase in production of maize especially after 2006-07 which is mainly due to increase in yield which is the result of introduction of single cross hybrid (SCH) varieties, since 2005, suitable for cultivation in different agro-climatic conditions in the country. Exports of maize have increased substantially from 2007-08. In value terms, the exports of maize have increased from only US \$ 19.1 million in 2001-02 to US \$ 1.3 billion in 2012-13. As seen from chart 3.4, domestic wholesale prices of maize have generally followed the international prices. Since 2010-11 (Q1) they have been continuously lower than international prices indicating that Indian maize is currently export competitive.

**Chart 3.3: India's Exports of Maize From 2002-03 to 2012-13**



Source: DGCI&S

**Chart 3.4: Domestic Wholesale Prices versus International Prices of Maize**



Source: World Bank for International prices and DES for Domestic Wholesale prices

Note: US No.2 yellow, f.o.b., US Gulf Ports.  
Quarters refer to marketing year (Oct-Sep)

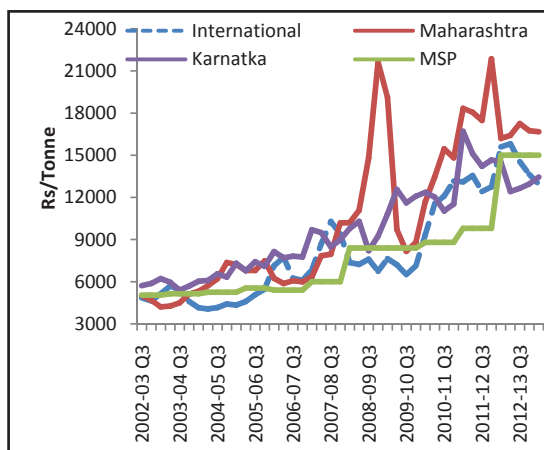
3.6 Quantitative ceiling on export of maize was removed vide notification dated 5.3.2002. Export of maize was prohibited vide notification dated 3.7.2008 for a brief period up to 15.10.2008. Export of maize is free wef 16.10.2008. The Government of India vide notification dated 12.6.2000, introduced a Tariff Rate Quota (TRQ) for maize imports at 3.5 lakh tonnes in a financial year with a 15 per cent in quota duty, as part of its agreement with WTO. Under the TRQ Scheme, NAFED, STC, MMTC, PEC and State Cooperative Marketing Federations were eligible to avail quota on behalf of actual users. TRQ for maize imports was raised to 4 lakh tonnes vide notification dated 1.3.2001, 4.5 lakh tonnes vide notification dated 1.3.2002 and 5 lakh tonnes vide notification dated 4.4.2003. Under TRQ Scheme, import of maize is allowed at zero import duty which has been notified vide notification dated 25.1.2007. Import duty on maize outside TRQ Scheme continues to be 50 per cent.

### Jowar (sorghum)

3.7 India exports small quantities of jowar. As per DGCI&S, India's exports of jowar have increased from a negligible quantity of 6.5 thousand tonnes in 2002-03 to 259.5 thousand tonnes in 2012-13. The Government imposed import duty of 50 per cent on jowar vide Notification dated 5.4.2000. Import duty on jowar continues to be at 50 per cent. Quantitative ceiling on export of jowar was removed vide Notification dated 5.3.2002. Export of jowar continues to be free. The domestic wholesale prices of jowar in Maharashtra and Karnataka have been generally higher than international prices of sorghum (US), No.2 milo

yellow during 2002-03 (Q3) to 2013-14 (Q1). But freight advantage compared to USA allows India to export jowar to the neighbouring countries like Pakistan, UAE, Yemen, Saudi Arabia and Kenya.

**Chart 3.5: Domestic Wholesale Prices Versus International Prices of Jowar (Sorghum)**



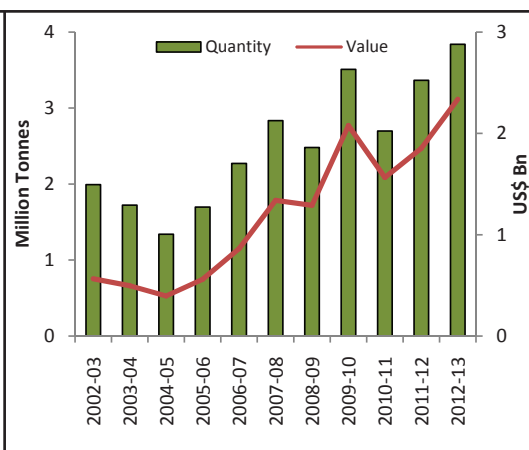
Source: World Bank, DES

Note : 1. Sorghum (US), No.2 milo yellow, f.o.b. US Gulf Ports.

2. Sorghum yellow variety of domestic wholesale price in Maharashtra and Karnataka.

3. Quarters refer to marketing year (Oct-Sep)

**Chart 3.6: India's Imports of Pulses from 2002-03 to 2012-13**



Source: DGCI&S

## PULSES

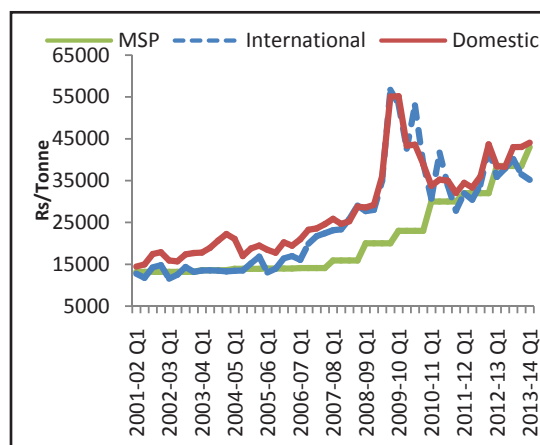
*India is the biggest producer and the biggest importer of pulses in the world*

3.8 India is the biggest producer and the biggest importer of pulses in the world. As per DGCI&S, India's imports of pulses which were 2.0 million tonnes in 2002-03 declined to 1.3 million tonnes in 2004-05. However, the imports of pulses have increased from 2005-06 onwards and increased to 3.8 million tonnes in 2012-13 (chart 3.6). India exports small quantities of pulses as these are banned with certain exemptions. As per DGCI&S, exports of pulses increased from 0.2 million tonnes in 2001-02 to 0.5 million tonnes in 2005-06 to decline to 0.2 million tonnes of pulses in 2012-13.

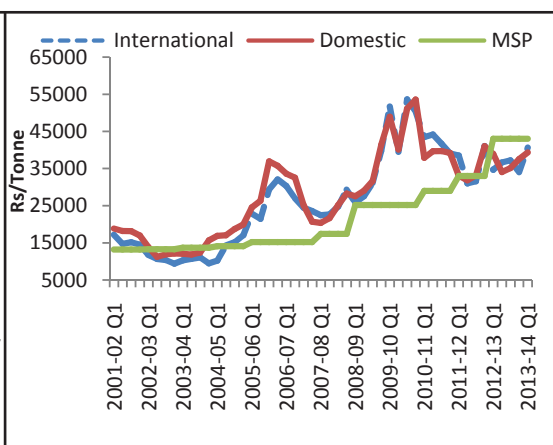
3.9 Import duty of 5 per cent was levied on pulses wef 29.6.2001 which was increased to 10 per cent wef 1.3.2003. It was reduced to zero per cent since 8.6.2006 which continues to be so. Export of pulses was initially prohibited for a period of six months vide notification dated 27.6.2006 which was extended from time to time –latest up to 31.3.2014 vide notification dated 25.3.2013. As per notifications dated 22.2.2007 and 7.3.2007, this prohibition does not apply to Kabuli Channa. As per notification dated 23.3.2011, exports of 10,000 MTs of organic pulses and Lentils per annum were allowed subject to the condition that it should be duly certified by APEDA and the exports shall be allowed only from Customs Electronic Data Interchange (EDI) Ports.

3.10 The domestic wholesale prices of kharif pulses have been compared with international prices (C&F) during the period from 2001-02 (Q1) to 2013-14 (Q1) (chart 3.7 to 3.9). It may be observed that the domestic wholesale prices have closely followed their international prices.

**Chart 3.7: Domestic Wholesale Prices versus International Prices of Tur**



**Chart 3.8: Domestic Wholesale Prices versus International Prices of Urad**



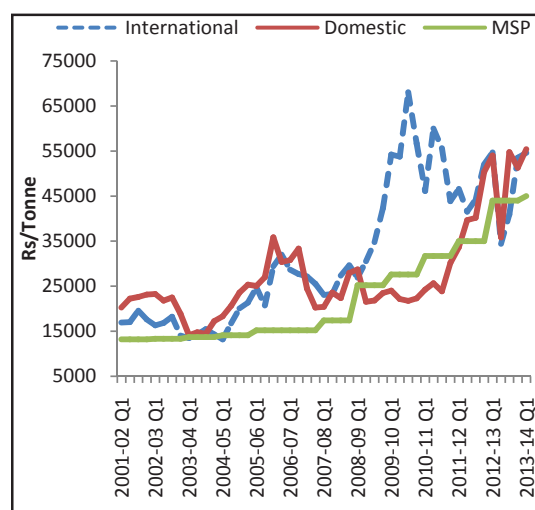
Source: NAFED

Source: NAFED

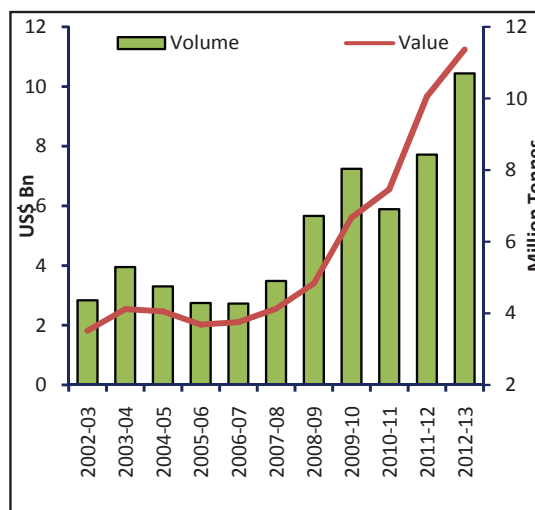
Note: Simple average wholesale prices of domestic and International.

Quarters refer to marketing year (Oct-Sep)

**Chart 3.9: Domestic Wholesale Prices versus International Prices of Moong**



**Chart 3.10: India's Imports of Edible Oils From 2002-03 to 2012-13**



Source: NAFED

Source: DGCI&S, SEAI (for quantity for 2012-13)

Note: Simple average wholesale prices of domestic and International

Quarters refer to marketing year (Oct-Sep)

## OILSEEDS/EDIBLE OILS

3.11 India imports about 55 per cent of its domestic requirement of edible oils. Its imports of edible oils were 4.4 million tonnes valued at US\$ 1.8 billion in 2002-03 which increased to 10.8 million tonnes valued at US\$ 11.2 billion in 2012-13

India imports about 55 per cent of its domestic requirement of edible oils

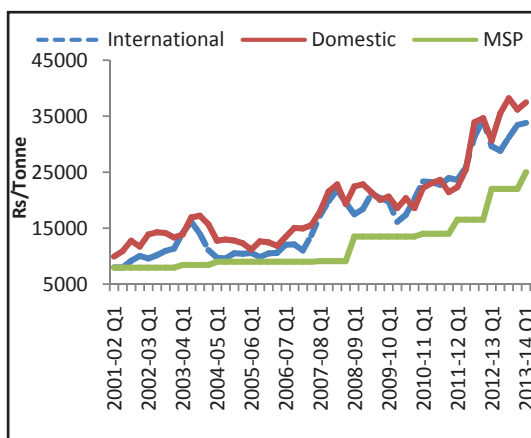
(Chart 3.10). India is the biggest exporter of groundnuts (in shell) in the world and exports small quantities of soyabeans and sunflower seed.

- 3.12 Import duty on oilseeds was reduced from 35 per cent to 30 per cent as on 1.1.2003 and since then it remains at this level. Export of oilseeds is free. Import duty on crude edible oils was reduced to zero per cent and 7.5 per cent on refined edible oils wef April, 2008 from a high level of 75 per cent on crude edible oils and 85 per cent on refined edible oils during the early 2000s. The import duty on crude edible oils has been increased to 2.5 per cent vide notification dated 23.1.2013 and to 10 per cent on refined edible oils wef 9.1.2014.
- 3.13 Export of edible oil was initially prohibited for a period of one year with effect from 17.3.2008 which has been extended from time to time – latest vide notification dated 18.6.2013. However, certain exports of edible oils were granted exemption from this prohibition, namely, (a) Castor oil, (b) Coconut oil from all EDI Ports and through all Land Custom Stations (LCS) on Indo-Nepal, Indo-Bangladesh, Indo-Bhutan and Indo-Pakistan borders, (c) Deemed export of edible oils (as input raw material) from Domestic Tariff Area (DTA) to 100 per cent EOUs for production of non edible goods to be exported, (d) Edible oils from DTA to Special Economic Zones (SEZs) to be consumed by SEZ units for manufacture of processed food products, subject to applicable value addition norms, (e) Edible oils produced out of minor forest produce, and (f) 10,000 MTs of Organic edible oils per annum. In addition, export of edible oils in branded consumer packs up to 5 Kgs was permitted with a MEP of US\$ 1400 per MT.

## Soyabeans

- 3.14 India exports small quantities of soyabeans, but large quantities of soyameal. However, it imports soya oil worth almost US \$ 1.4 billion. Domestic prices of soyabean closely follow the international prices (chart 3.11).

**Chart 3.11: Domestic Wholesale Prices Versus International Prices Of Soyabeans**



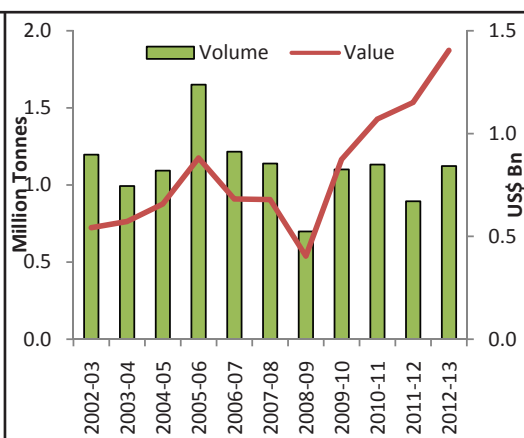
Source: 1. ISTA Meike GMGH, Oil World, USDA, World Bank for International prices.

2. NAFED replies and Agmarknet for domestic prices (Average price of MP)

Note: Soyabeans Argentina FOB; Up River; Reuters.

Quarters refer to marketing year (Nov-Oct)

**Chart 3.12: India's Imports of Soyabean Oil From 2002-03 to 2012-13**



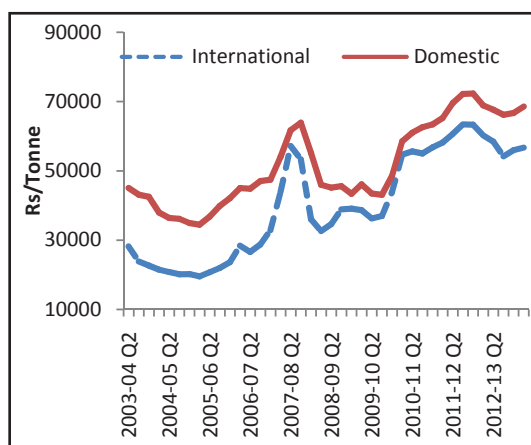
Source: DGCI&S



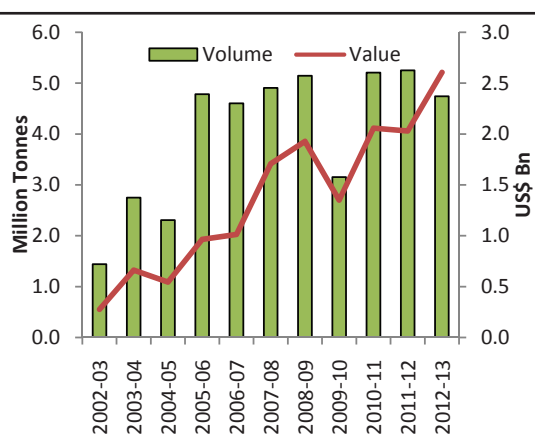
## Soyabean Oil

3.15 As per DGCI&S, India's imports of soyabean oil have fluctuated between 0.7 million tonnes to 1.7 million tonnes during 2002-03 to 2012-13 (chart 3.12). The imports of palm oil are increasing more in comparison to soyabean oil because of comparatively cheaper imports from Indonesia and Malaysia. It may be observed from chart 3.13 that during the period from 2003-04 (Q2) to 2013-14 (Q1), the domestic wholesale prices of soyabean oil are continuously higher than international prices of soyabean oil.

**Chart 3.13: Domestic Wholesale Prices versus International Prices of Soyabean Oil**



**Chart 3.14: India's Exports of Soyabean Meal From 2002-03 to 2012-13**



Source: 1. ISTA Mielke GMBH, Oil World, USDA, World Bank for international prices  
2. SEAI for domestic prices quoted at Mumbai.  
Note: Soyabeans Argentina FOB; Oil world or Reuters.  
Quarters refer to marketing year (Nov-Oct)

Source: DGCI & S

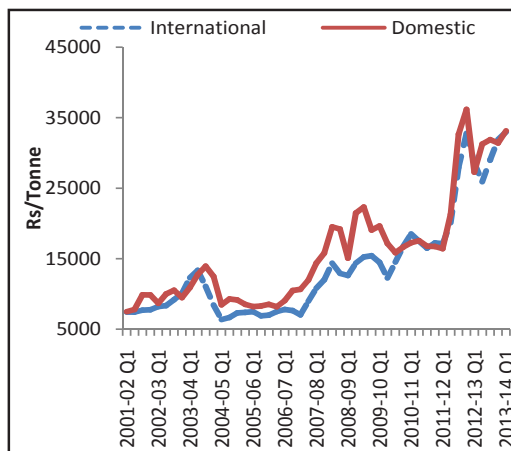
## Soyabean meal

3.16 As per DGCI&S, India's exports of soyabean meal have increased from 1.4 million tonnes in 2002-03 to 5.3 million tonnes 2011-12 and 4.7 million tonnes in 2012-13 (Chart 3.14). Domestic prices of soyabean meal are closely linked to their international prices (chart 3.15). India's exports of soyabean meal are mainly to neighboring Asian countries as it enjoys a freight advantage over the other main exporters of Argentina and Brazil.

## Groundnuts

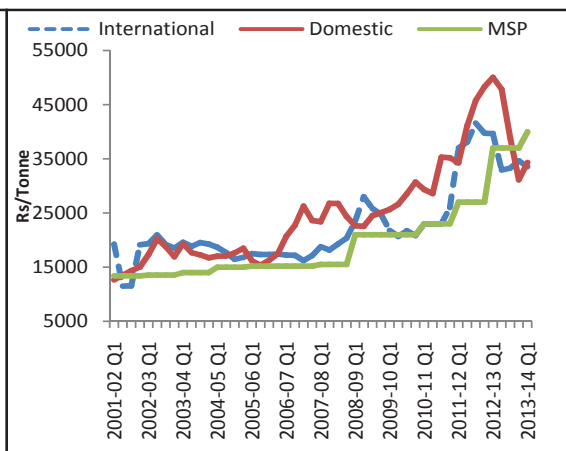
3.17 India's exports of groundnuts increased from 0.1 million tonnes in 2002-03 to 0.8 million tonnes in 2011-12, and then dipped marginally to 0.5 million tonnes in 2012-13. The domestic prices of groundnuts are generally higher than international prices (chart 3.16). India's exports of groundnuts are mainly to south-east Asian countries, namely, Indonesia, Malaysia and Vietnam; and also to neighbouring countries like Pakistan, Sri Lanka and Nepal, where it gets freight advantage vis-à-vis its main competitors, Argentina and USA.

**Chart 3.15: Domestic Wholesale Prices versus International Prices of Soyabean Meal**



Source: 1. USDA; for International prices.  
2. SEAI for domestic prices quoted at Mumbai  
Note: Argentina Pellets, f.o.b. Up River; Reuters  
Quarters refer to marketing year (Nov-Oct)  
Quarters refer to marketing year (Nov-Oct)

**Chart 3.16: Domestic Wholesale Prices versus International Prices of Groundnuts**

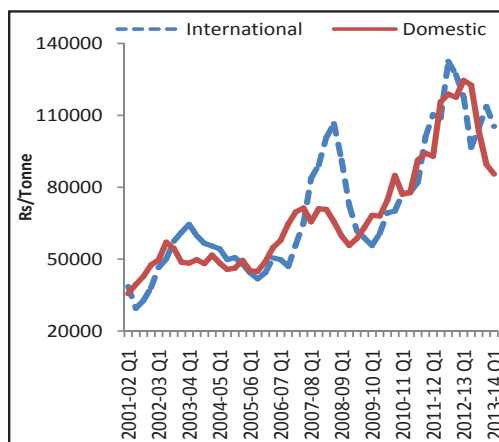


Source: 1. USDA, World Bank for International prices.  
2. NAFED replies and Agmarknet for domestic prices (average prices of Gujarat)  
Note : US, Farm Price, Peanuts, in shell, USDA.

## Groundnut oil

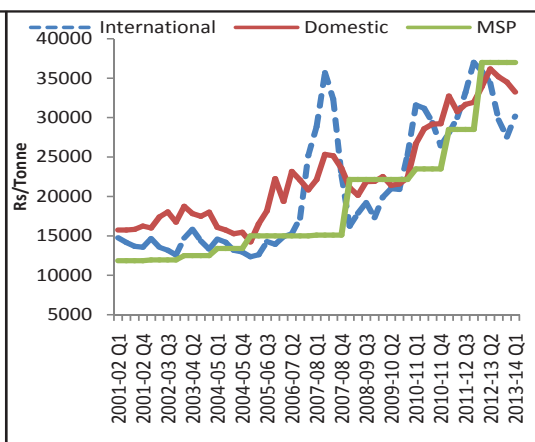
3.19 India's exports of groundnut oil increased from a meager 0.13 thousand tonnes in 2002-03 to 40.6 thousand tonnes in 2004-05, but thereafter declined to only 17.1 thousand tonnes in 2012-13. With record production of groundnut in 2013-14, exports of groundnut oil needs to be fully liberalized so that groundnut prices are supported. India's imports of groundnut oil are nil, and domestic prices of groundnut oil have generally followed the international prices (chart 3.17).

**Chart 3.17: Domestic Wholesale Prices versus International Prices of Groundnut Oil**



Source: 1. USDA, World Bank for International price  
2. SEAI for domestic prices of groundnut oil quoted at Mumbai;  
Note: Groundnut Oil, South East Mills, f.o.b., USDA  
Quarters refer to marketing year (Nov-Oct)

**Chart 3.18: Domestic Wholesale Prices versus International Prices of Sunflower Seed**

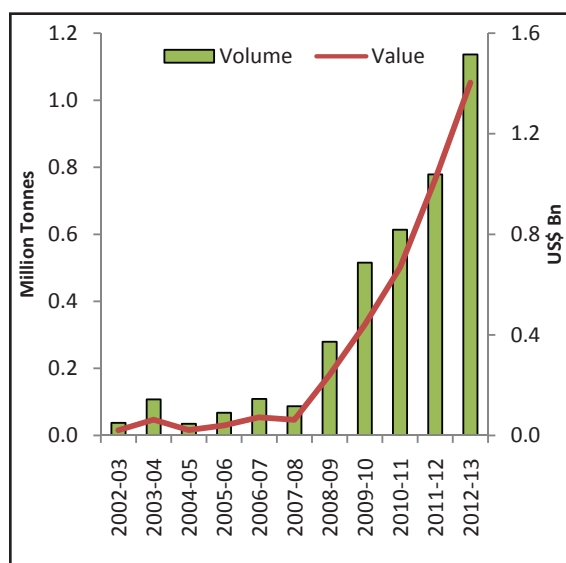


Source: 1. USDA, World Bank for International price  
2. NAFED replies and Agmarknet for domestic prices (average prices of Maharashtra).  
Note: Sunflower seed US Farm Price, USDA.  
Quarters refer to marketing year (Nov-Oct)

## Sunflower Seed/Oil

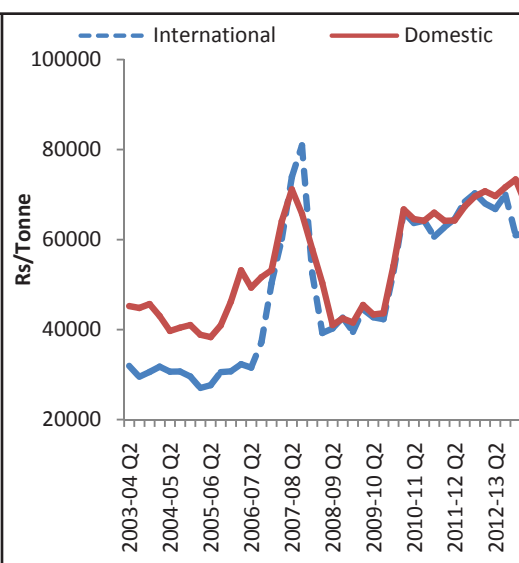
3.19 India exports small quantities of sunflower seed. India's imports of sunflower seed are negligible. Domestic wholesale prices of sunflower seed are generally higher than the international prices of sunflower seed (chart 3.18). India exports small quantities of sunflower oil. As per DGCI&S, India's imports of sunflower oil have increased from 0.04 million tonnes in 2002-03 to 1.2 million tonnes in 2012-13, more sharply from 2008-09 (Chart 3.19). Domestic prices of sunflower oil (Mumbai) have generally followed the international prices of sunflower oil, EU, f.o.b., NW Euro Ports (chart 3.20).

**Chart 3.19: India's Imports of Sunflower Oil from 2002-03 to 2012-13**



Source: DGCI&S

**Chart 3.20: Domestic Wholesale Prices versus International Prices of Sunflower Oil**



Source: USDA; SEAI

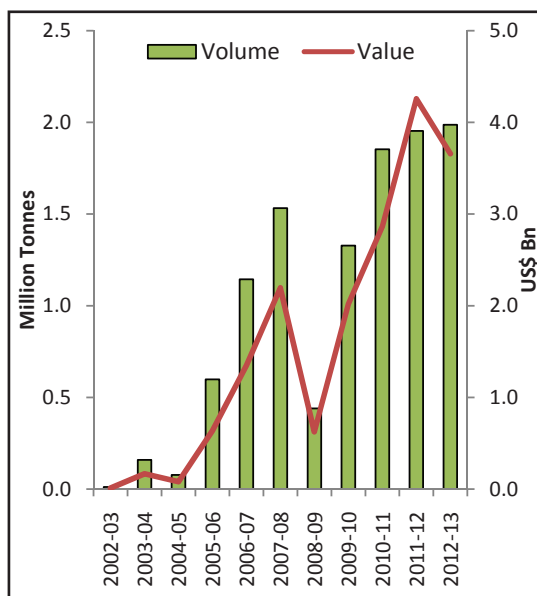
Note: EU, f.o.b., NW Euro Ports, Oil World (Sunflower oil).  
2. Domestic Prices are as quoted in Mumbai. Quarters refer to marketing year (Nov-Oct)

## FIBRE - Cotton

3.20 India is the second biggest exporter of cotton in the world. As per DGCI&S, India's exports have increased from about 0.01 million tonnes in 2002-03 to about 2.0 million tonnes in 2012-13 valued at about US \$ 4 billion (Chart 3.21). Cotton production has increased significantly since 2003-04 mainly due to the extensive spread of Bt Cotton. Bt Cotton was first adopted in India as hybrids in 2002 which now covers about 91 per cent of the total area, making it a competitive exporter. Domestic wholesale prices of cotton (Lint) have generally been lower than international prices of cotton (chart 3.22). Also, MSP of cotton (raw) converted to cotton (lint) has been generally lower than domestic wholesale prices of cotton (lint) during 2001-02 to 2013-14.

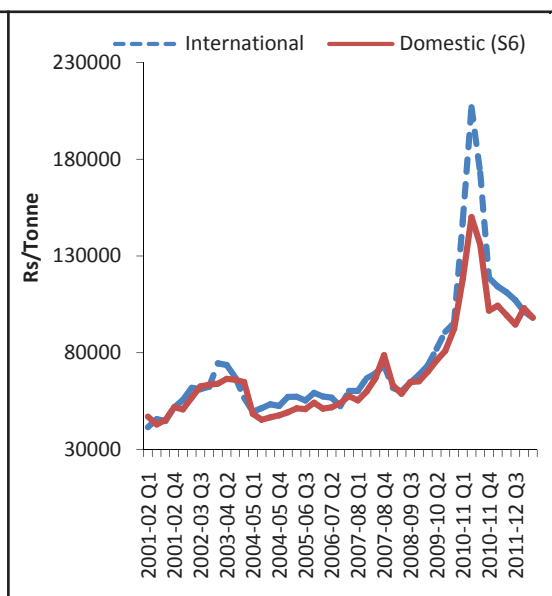
*India is the second biggest exporter of cotton in the world*

**Chart 3.21: India's Exports of Cotton (2002-03 to 2012-13)**



Source: DGCI & S

**Chart 3.22: Domestic Wholesale Price Versus International Prices of Cotton (Lint)**



Source: World Bank for International and CCI for domestic prices.

Note: 1. Cotton (Cotton Outlook "Cotlook A Index"), middling Northern Europe, c.i.f. Cotton Outlook: ICAC; World Bank.

2. Domestic prices of Cotton (Lint) Mumbai.

Quarters refer to marketing year (Oct-Sep)

3.21 The Government removed quantitative restrictions on export of cotton vide notification dated 2.7.2001 and placed the export of cotton under OGL. In order to curb the rising price trend in the domestic market, the Government imposed export duty of Rs 2500 per tonne on raw cotton vide notification dated 9.4.2010 in order to avoid disruption in supply chain of cotton in the country till the end of cotton season 2009-10. Cotton exports were placed in restricted category and permitted under license vide notification dated 21.5.2010. However, vide notification dated 17.8.2010, the export of cotton were allowed at zero export duty with the restriction that the contracts for export of cotton shall be registered with the Director General of Foreign Trade (DGFT) prior to shipment. Cotton exports are currently under OGL subject to a prescribed procedure of registration.

3.22 Import of cotton was placed under OGL in April, 1994. Till 1998-99, there was no import duty. Import duty of 5 per cent was levied on Cotton imports with effect from March 1, 1999. The Government increased the import duty to 10 per cent on cotton imports with effect from January 8, 2002 in order to avoid imports of cheaper cotton. However, the Government vide notification dated 8.7.2008 has removed the import duty of 10 per cent on import of cotton.

## Global Outlook

3.23 According to OECD-FAO Agricultural Outlook 2013-22, global agricultural production is expected to grow 1.5 per cent annually, on average, over the

coming decade, compared with annual growth of 2.1 per cent between 2003 and 2012. Cereal production is expected to increase 1.4 per cent per year and oilseed production is projected to increase faster than cereals, mainly due to yield gains. During the next three years, the international prices of rice and oilseeds are expected to decline, prices of maize would be relatively flat and prices of cotton are expected to increase (table 3.1).

*During the next three years, the international prices of rice and oilseeds are expected to decline*

**Table 3.1: Forecasts of International Prices (US\$ / tonne)**

	2014-15	2015-16	2016-17
Rice	440	423	419
Maize	216	221	227
Oilseeds	514	511	507
Cotton	1796	1915	1954

Source: OECD-FAO Agricultural Outlook 2013-22.

Note: OECD-FAO Agricultural Outlook gives weighted average oilseed price, European Port.

## Recommendations

- 3.24 A long-term consistent, stable and predictable agri-trade policy with only moderate duties of 5-10 percent is the need of the hour to tap the full potential of agriculture sector. And it has to be as much focused on exports as on imports, giving a trade neutral level to producers as well as consumers. As an illustrative example, the country is surplus in rice but there is an import duty as high as 70 per cent on semi-milled or wholly milled rice and 80 per cent on paddy, brown rice and broken rice. Such a high duty is not desirable when the country is in a position to export about 10 million tonnes of rice annually. The import duty on rice needs to be reduced to the level of 5-10 per cent.
- 3.25 India's imports of edible oils are about 55 per cent of the total availability of edible oils in the country. However, import of oilseeds (raw material for edible oils) is not viable because of high import duty of 30 per cent. Ideally, import duty on oilseeds should be lower than crude edible oil so that edible oil crushing mills are able to with-stand the competition from crude edible oil imports at 2.5 per cent import duty. Therefore, import duty on oilseeds should be reduced to zero per cent. Export of edible oils is permitted in branded consumer packs of up to 5 kgs with a limit of 20,000 tonnes. It is recommended that export of edible oils be opened unconditionally especially for groundnut oil. When imports of edible oils are free, then exports of edible oils also need to be free to make the trade policy crop neutral.

*A long-term consistent, stable and predictable agri-trade policy with only moderate duties of 5-10 percent is the need of the hour*





## Chapter-4

### Costs and Returns

4.1 As a part of price policy recommendations, the cost of production is one of the important factors in the determination of MSP of mandated crops. Besides this, the Commission considers other important market related factors such as demand-supply balance, inter-crop price parity, trends in market prices—both domestic and international, terms of trade between agriculture and non-agriculture, effect on cost of living and industrial cost structure etc. Cost represents the supply side of production. The demand side is equally important in the pricing of commodities.

*Actual estimates of cost of production generated under CS are available for the year 2011-12*

4.2 The Commission is mandated to use the cost estimates furnished by the DES, Ministry of Agriculture under Comprehensive Scheme (CS). Since the CS data generally comes with a lag of two-three years, it needs to be projected for the year under consideration for arriving at the relevant cost estimates, state-wise as well as for the country as a whole for price policy recommendations by the Commission. The Commission is the primary user of this cost data collected by DES but due to such a long time lag the data loses its relevance in cost projection exercise. So it is recommended to

establish appropriate software to expedite the process so that the time lag is reduced to a few months.

- 4.3 The Commission has done the projection exercise for cost of production (CoP) estimates for – Kharif crops for the 2014-15 crop season, with latest three years' actual estimates from 2009-10 to 2011-12 as basis. As per conventional practice, three independent projections are made for each state: one on the latest available year cost estimate of 2011-12; second on the basis of 2010-11; and third, of 2009-10. These three projections capture increase in overall input cost separately for the year 2014-15 over each of the years of 2009-10 and 2010-11 and 2011-12. An assessment of overall increase in input cost likely for the year 2014-15 in reference to each of the three consecutive years ending with 2011-12 is made by constructing a composite input index for components of paid-out cost based on latest prices of different inputs like human labour, bullock labour, machine labour, manures, seeds, pesticides, fertilizers, and irrigation charges based on latest data from different source like Labour Bureau, Shimla, replies from State governments, Office of the Economic Adviser (OEA), Ministry of Commerce and Industry, Fertilizers Association of India (FAI), National Seeds Corporation (NSC) etc.
- 4.4 These three projections in per hectare cost in A2+FL and C2 are made for each state. To arrive at per unit cost of production for the ensuing year 2014-15, the yield was projected state-wise based on time-series yield data of CS estimates over a period of 2000-01 to 2011-12. The equation arrived at by fitting linear trend to three year moving average yield has been used to calculate projected yield likely to prevail in 2014-15 season. These projected cost estimates are then presented for various crops and for various states. But before giving its projections, the Commission first examines the actual costs and profitability of various crops, for which latest information is made available by DES.

### **Costs and Profitability of Kharif Crops during 2009-10 to 2011-12**

- 4.5 It is relevant to mention that the gross value of output in the methodology of cost calculation is estimated at the prevailing market prices during harvest season in the village/cluster of villages where crops are grown and harvested. An analysis of the profitability and the rate of return over costs A2+FL and C2, for various crops during 2009-10 to 2011-12 is presented in table 4.1 and state-wise in annex table 4.1.

**Table 4.1: All India Gross and Net Returns Over Actual Cost of Cultivation of Kharif Crops (Average From 2009-10 to 2011-12)**

CROP	Cost A2+FL (Rs./ha.)	Cost C2 (Rs./ha.)	GVO (Rs./ha.)	Gross Returns over A2+FL (Rs./ha)	Rate of Gross Returns over A2+FL (%)	Net Returns over C2 (Rs./ha)	Net Rate of Returns over C2 (%)
				(D-B)	(E/B)*100	(D-C)	(G/C)*100
A	B	C	D	E	F	G	H
<b>CEREALS:</b>							
Paddy	26604	37733	42282	15679	59	4550	12
Maize	19186	26857	30141	10955	57	3284	12
Jowar	16211	22996	24904	8693	54	1908	8
Bajra	12394	17131	17699	5305	43	568	3
Ragi	22274	30020	21566	-708	-3	-8454	-28
<b>PULSES:</b>							
Tur	19585	30327	38845	19260	98	8518	28
Moong	11042	15326	17340	6298	57	2013	13
Urad	12620	18749	22089	9468	75	3340	18
<b>OILSEEDS:</b>							
Groundnut	28412	39754	44073	15660	55	4319	11
Soyabean	16060	23545	28307	12247	76	4763	20
Sunflower	13557	18103	18651	5094	38	548	3
Sesamum	11124	16245	20020	8896	80	3775	23
Nigerseed	7843	11152	10610	2767	35	-541	-5
Cotton	33339	49439	65129	31790	95	15689	32

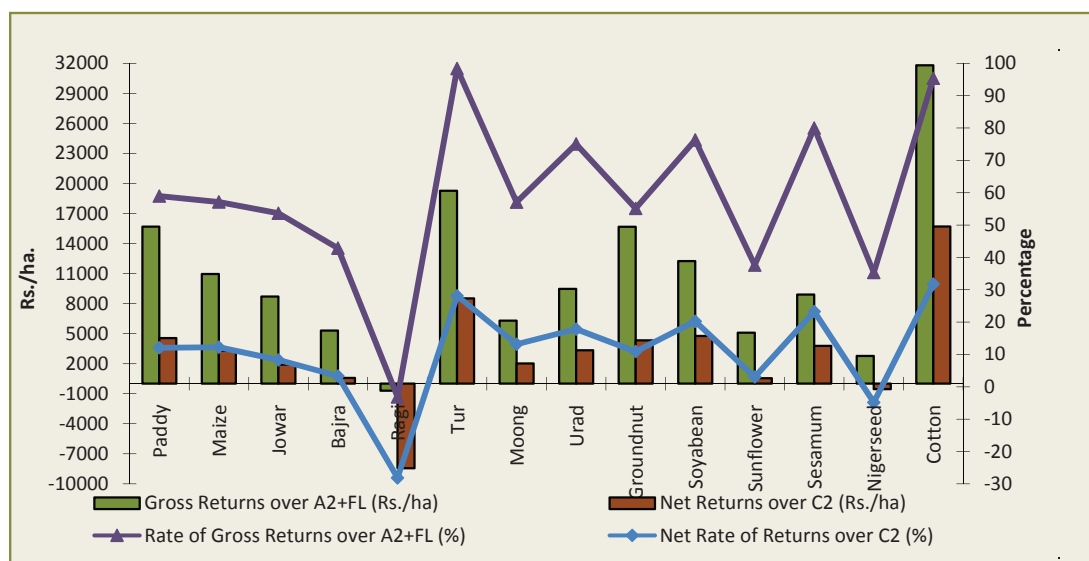
Source: Comprehensive Scheme for studying the Cost of Cultivation of principal Crops, DES

Note: A2+FL cost includes all expenses in cash and kind on account of hired human labour, bullock labour, machine labour, seed, insecticides & pesticides, manure, fertilizers, irrigation charges and miscellaneous expenses including family labour. C2 cost includes A2+FL cost, rental value of owned land, interest on fixed capital etc.

4.6 On taking the broad picture (at all India level) of per hectare gross returns i.e., absolute profit on A2+FL, it is evident from table 4.1 that it is maximum for cotton at Rs. 31790/ha, followed by tur at Rs. 19260/ha; Paddy at Rs. 15679/ha and minimum or even negative for ragi at (-)Rs 708/ha during 2009-10 to 2011-12. Also it can be viewed that net rate of gross return, i.e., profitability over C2 is also maximum for cotton at 32 percent among kharif crops considered in the analysis. Chart 4.1 represents the net returns on C2 cost and gross returns on A2+FL cost both in absolute and percent terms. The analysis of per hectare return for fourteen mandated kharif crops perhaps indicates the need for enhanced productivity and price support for coarse cereals, pulses (except tur) and oilseeds relative to that for cotton, tur and paddy. And, the productivity can be enhanced only by mechanizing the agro-practices, improving the quality of seeds, balanced use of fertilizers and investing in better irrigation facilities.

Rate of gross return and net return is highest for cotton

**Chart 4.1: All India Profitability of Kharif Crops (Average from 2009-10 to 2011-12)**



Source: Computed by the Commission

## Labour and Input Price Movement

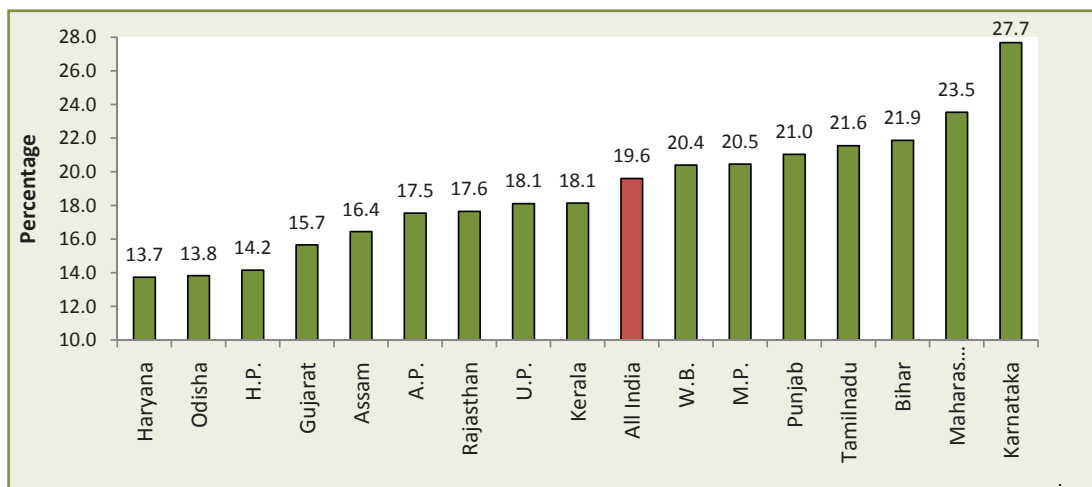
4.7 The considerable increase in agriculture farm wage rate in recent past after the inception of MGNREGA has no doubt resulted in contributing to the input cost of cultivation and hence has put pressure on prices of farm produce. At all-India level, nominal wage rate increase in October, 2013 over the corresponding month of the 2012 year has gone up by 14 percent while this increase was 21 percent in October, 2012 over October, 2011. This indicates that the growth rate in agricultural wages have shown the decelerating trend in the year 2012-13 over 2011-12. On analyzing state-wise over the same month for the last two years, it has been observed that the states of Andhra Pradesh, Gujarat, Karnataka, Kerala, Maharashtra, Punjab and Tamil Nadu are also moving on the same trend as that of All India.

4.8 However, chart 4.2 depicts average annual growth rate of agriculture wage rate by states and at all-India level in nominal terms during Nov 2009-Oct 2010 to Nov 2012-Oct 2013. Preliminary observations of agricultural wage rate as given by Labour Bureau, Shimla are that it has gone up by almost 20 per cent per annum over the last three years i.e., during Nov 2009-Oct 2010 to Nov 2012-Oct 2013. The highest rate of increase during this period is reported for Karnataka at 28 percent and the lowest rate increase for Haryana at 14 percent. To accommodate higher wages and also to intensify and expand agriculture under a favourable economic environment, structural adjustments will have to be made. These include on-farm mechanization and consolidation of farming units to increase efficiency and productivity. Mechanization should not be seen as a threat to manual labour, but as an opportunity to increase the output per worker and stimulate the agro-economic sector. The state-wise details of monthly average daily wage rate of agriculture labour are given in annex table 4.2.

*Agricultural labour wage rate has gone up by 19.6 percent per annum over the last three years*



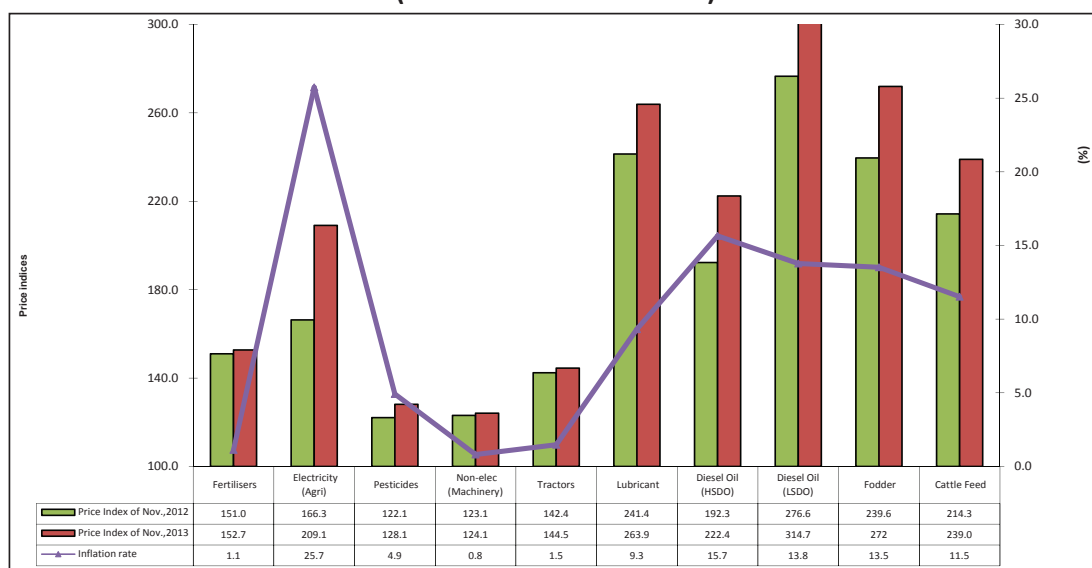
**Chart 4.2: Average Annual Growth Rate of Agriculture Labour Wage Rate (Rs/day) by States and at All-India Level in Nominal Terms (Nov 2009-Oct 2010 to Nov 2012-Oct 2013)**



Source: Labour Bureau

4.9 The Commission has analyzed the price trends of farm inputs to assess how they impinge on cost of production. Wholesale price index (with base year 2004-05=100) for major farm inputs during the period Nov., 2013 over Nov., 2012 has shown an upward trend. Fertilizer prices have escalated by 1.1 per cent; electricity for irrigation by 25.7 per cent; pesticides by 4.9 per cent; non-electrical machinery by 0.8 percent; tractors by 1.5 per cent; lubricants by 9.3 per cent; high speed diesel oil (HSDO) by 15.7 per cent; light speed diesel oil (LSDO) by 13.8 per cent fodder by 13.5 per cent; cattle feed by 11.5 per cent (details available in annex table 4.3).

**Chart 4.3: WPI and Percentage Increase in Prices of Farm Inputs (Nov. 2013 over Nov.2012)**



Source: DIPP



## Widening Gap between International & Domestic Prices of Fertilizers (especially Urea)

- 4.10 MRP of urea is statutorily fixed and announced by the DAC and remained at Rs. 4830 per tonne from 12<sup>th</sup> March 2003 to 1<sup>st</sup> April 2010 when it was increased by 10% to Rs 5310 per tonne. Recently, in October 2012, it has been increased further to Rs 5360 per tonne. MRPs of DAP, MAP, MOP, TSP remained more or less the same during 1st April of 2002 to 31st March, 2010 and were enhanced wef 1st April, 2010, the month in which Nutrient Based Subsidy (NBS) Policy was announced. With the launch of NBS Policy, the subsidy per kg of nutrients NP&K is fixed by the Government and retail prices for P&K fertilizers have been freed and have increased in line with their international prices. But the gap between the cost of production of domestic urea and imported urea has widened as its price has not been increased. This also has had an adverse influence on the usage of different fertilizers in favour of urea and at the cost of P&K fertilizers. This has distorted the NPK ratio and has deteriorated the soil quality in major rice producing states like Punjab, Haryana & AP. The NPK ratio at the all-India level has deteriorated from 4.7:2.3:1 in 2010-11 to 6.7:3.0:1 in 2011-12. Therefore, the most urgent reform required on the fertilizer subsidy front is inclusion of urea in the ambit of NBS regime and free up its prices. A better and efficient alternative is to directly empower the farmer to purchase fertilizers in the form of conditional cash transfers (conditional on getting the soil cards and may be installing fertigation in tubewell irrigated areas).

*The gap between the cost of production of domestic urea and imported urea has widened as its price has not been increased adversely affecting the usage ratio of NPK fertilizers*

## Cost Projections for 2014-15 Crop Season

- 4.11 Following the methodology of cost projection as detailed earlier, the projections for fourteen major Kharif crops are made on the basis of the latest three years data (from 2009-10 to 2011-12) on actual estimates of cost of production made available to the Commission under the CS. The details of actual cost estimates for 2011-12 compared to those of the previous year are available on the website of the Commission.
- 4.12 The projected cost for each crop varies widely across states due to huge variations in their yields. These costs by states are averaged to arrive at all India weighted cost of production with weights being relative shares of the states in the total production (which is the average of latest three years production data available). Table 4.2 gives the projected cost (A2+FL & C2) of Kharif crops at all India level. However, the expenses that the farmers incur on marketing, transportation and crop insurance premium differs from crop to crop as well as from state to state. The information available from state replies to the Commission is very sketchy. No data is available on how many farmers have opted and got benefited through Crop Insurance Scheme for different crops. Nevertheless based on the available information, the Commission has arrived at the estimates which generally range between 2 to 3 percent of crop prices. Therefore, more exhaustive work is required to ascertain the robustness of these estimates. Annex Table 4.4

outlines the projections for 2014-15 crop season state-wise and at all India level for different kharif crops.

**Table 4.2: All India Projected Cost of Production (A2+FL & C2) for Kharif Crops for 2014-15 Crop Season**

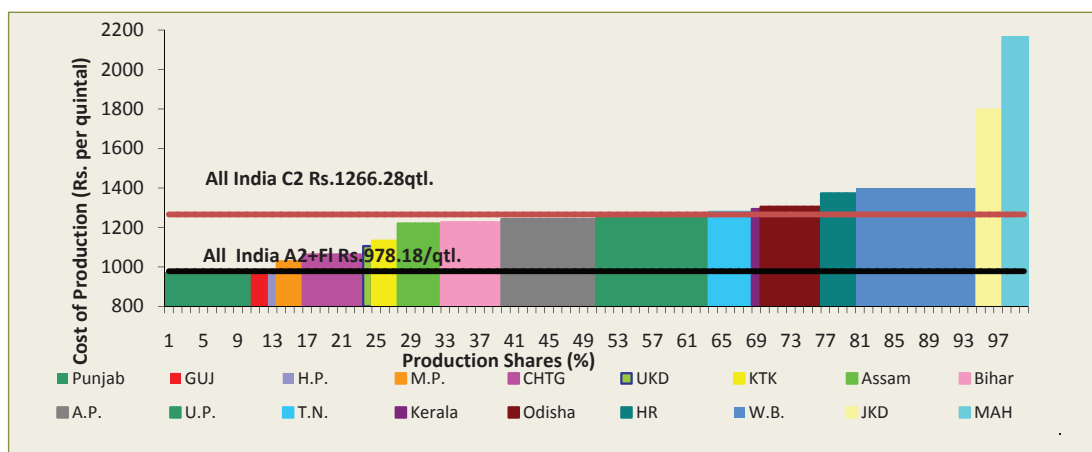
Crops	Cost of Production (Rs./qtl.)	
	A2+FL	C2
Paddy	978.18	1266.28
Jowar	1370.09	1788.20
Bajra	831.64	1075.16
Maize	913.51	1164.70
Ragi	1474.42	1793.87
Tur	3104.62	4214.45
Moong	3889.84	4970.77
Urd	3225.04	4316.98
Groundnut	3231.87	3880.25
Soyabean	1728.95	2225.84
Sunflower	3129.07	3862.61
Seasmum	3765.26	4812.25
Nigerseed	3084.47	4012.91
Cotton	2509.84	3479.84

Note: - This projected cost is excluding the cost of marketing, transportation and crop insurance premium.

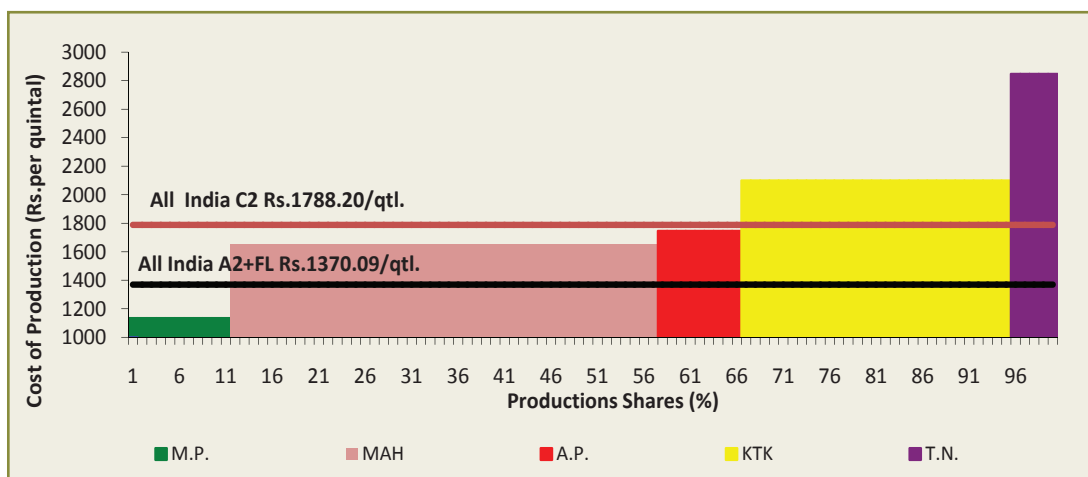
Annex Table 4.4 outlines the projections for 2014-15 crop season state-wise and at all India level for kharif crops.

4.13 Chart 4.4 (a) to (m) represents the overall cost of production (C2) by states as well as all India level in increasing order of cost with their corresponding relative shares in total production for different Kharif crops. These crop-wise charts illustrate the percentage of cost of major producing states that is covered by all India weighted cost of production in terms of relative share of production of those states for different Kharif crops. As is apparent from chart 4.4 (a) all India cost of production (C2) for paddy is Rs 1266.28 per quintal which is covering cost of about 63 percent of production of major producing states.

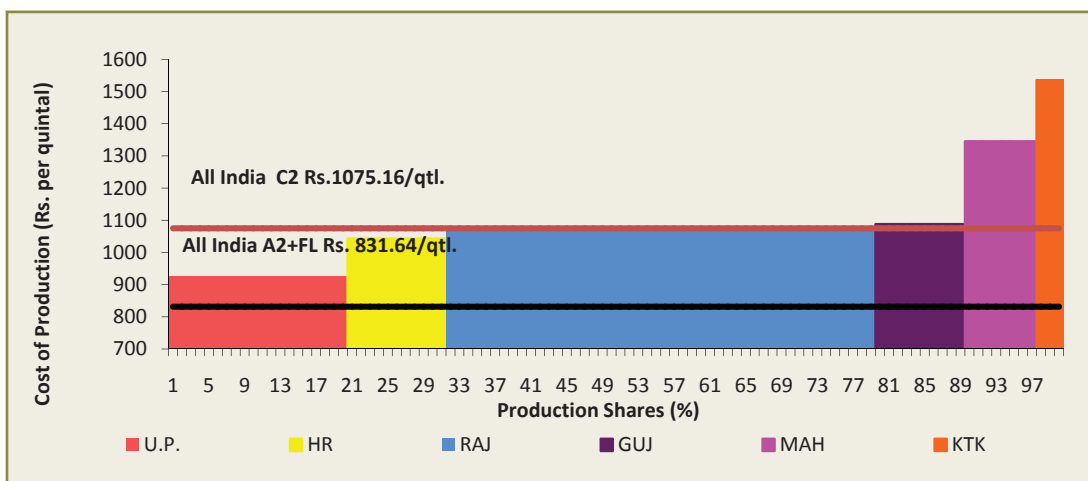
**Chart 4.4: Projected Cost and Supply of Kharif Crops by States for 2014-15 Crop Season**  
**4.4 (a) Paddy**



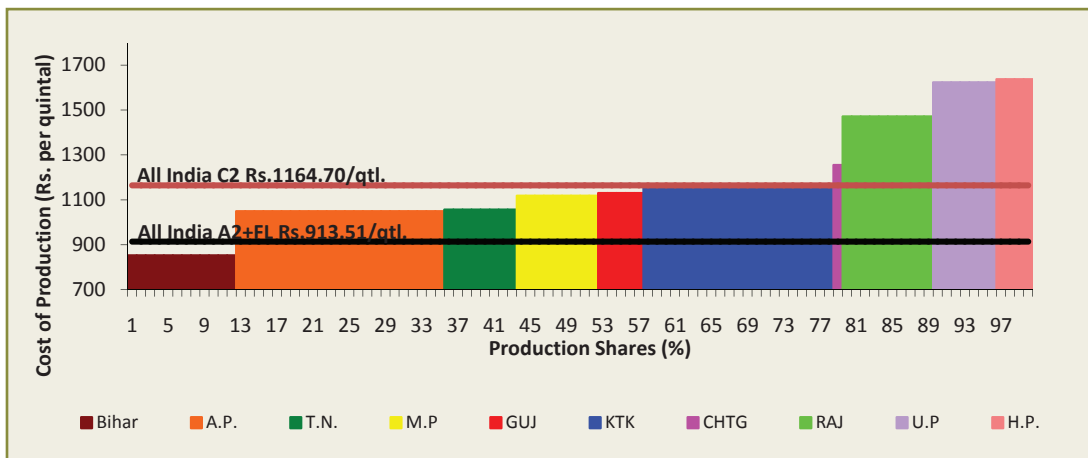
#### 4.4 (b) Jowar



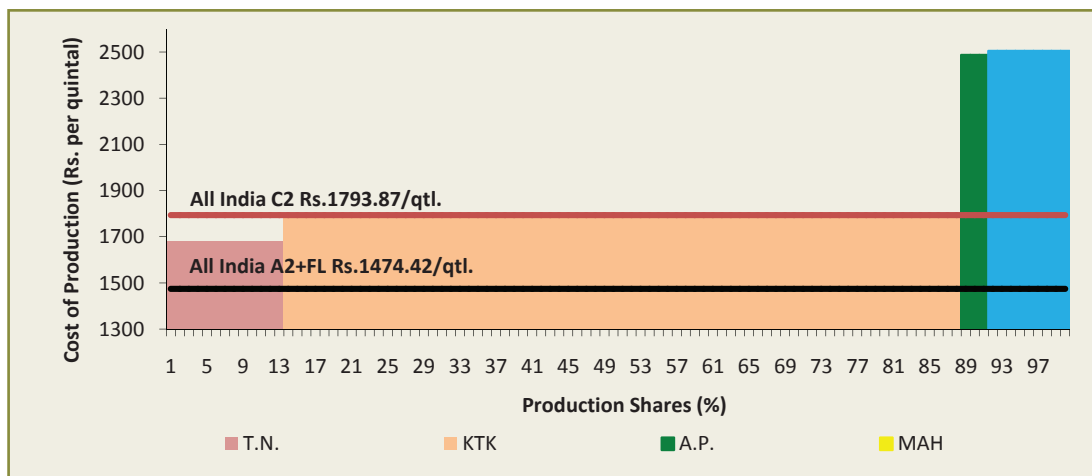
#### 4.4 (c) Bajra



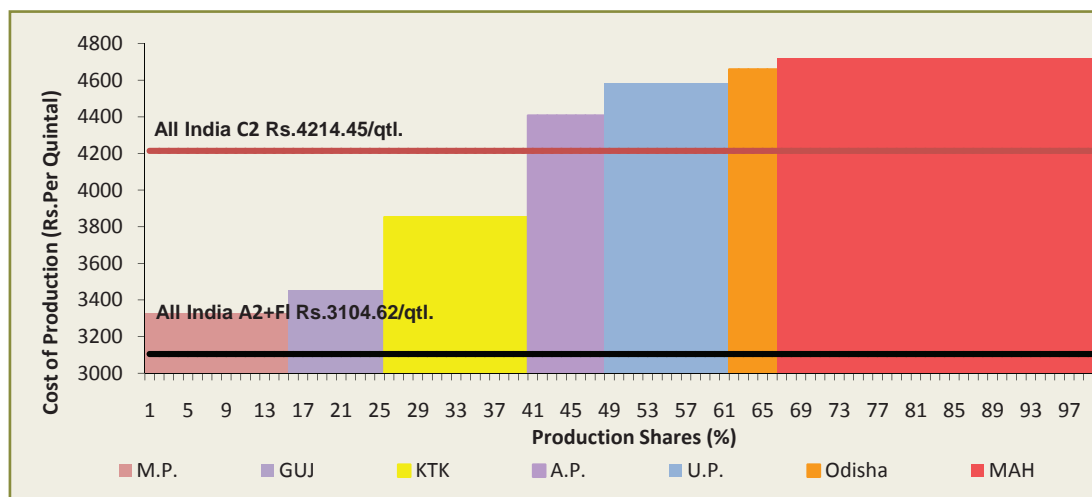
#### 4.4 (d) Maize



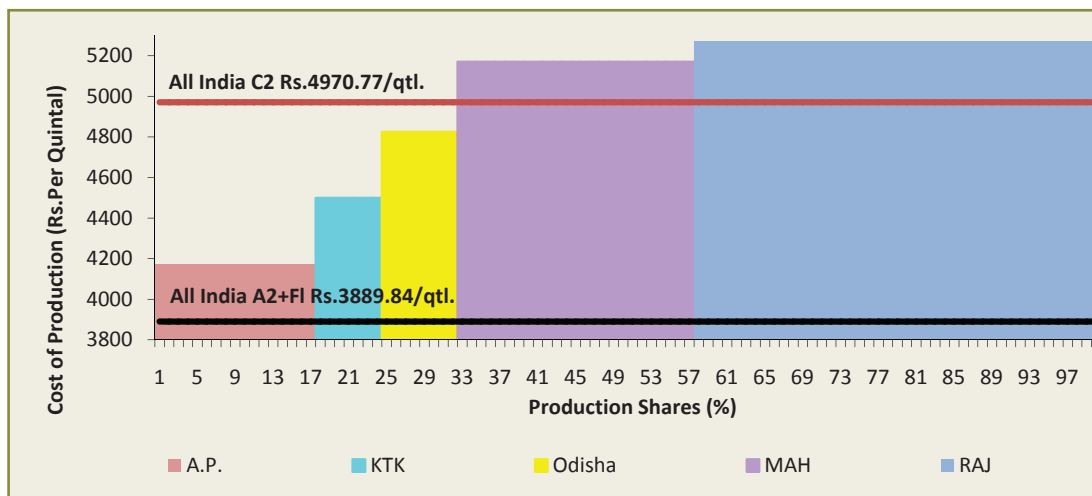
#### 4.4 (e) Ragi



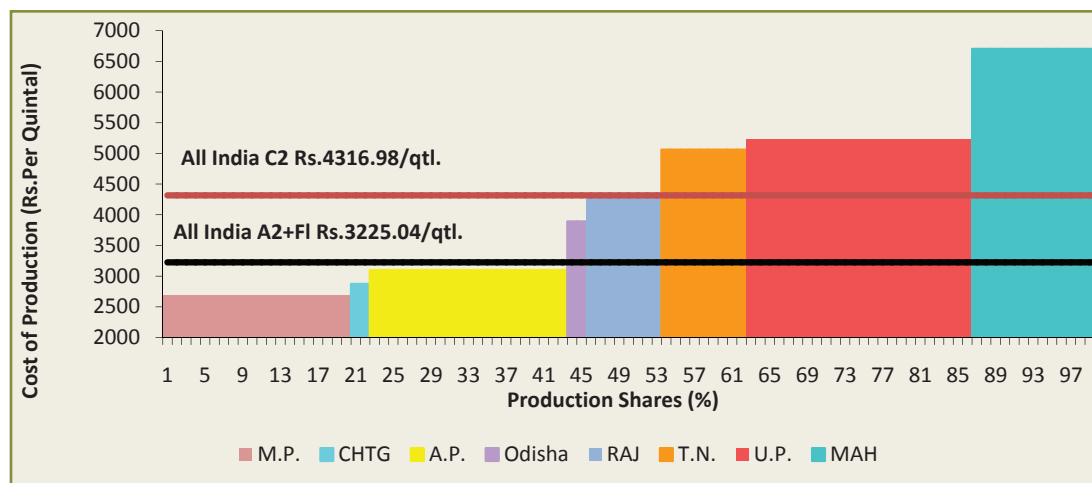
#### 4.4 (f) Tur (Arhar)



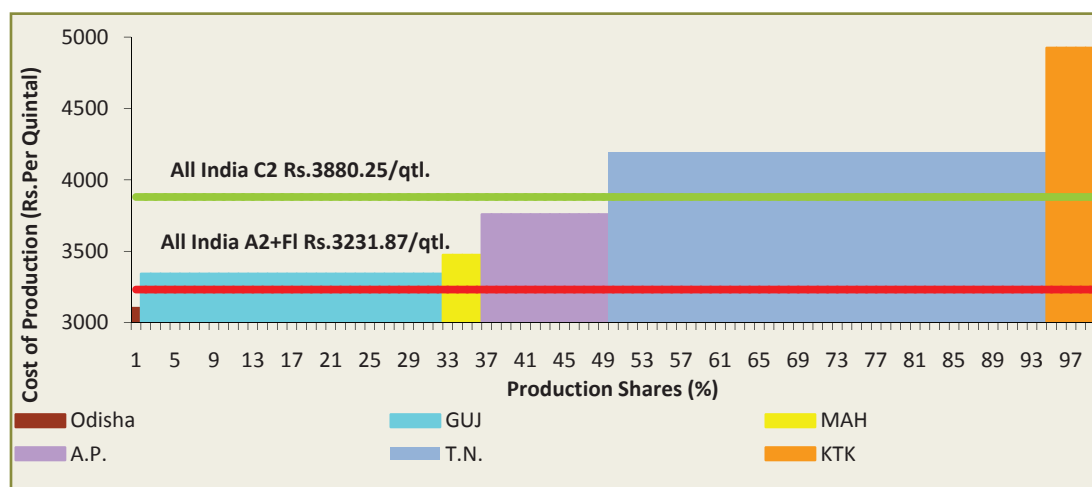
#### 4.4 (g) Moong



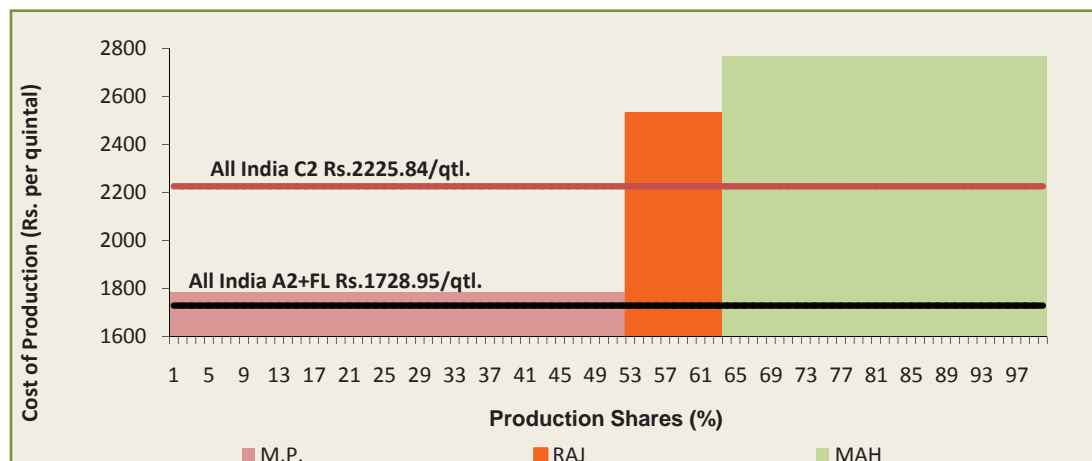
#### 4.4 (h) Urad



#### 4.4 (i) Groundnut

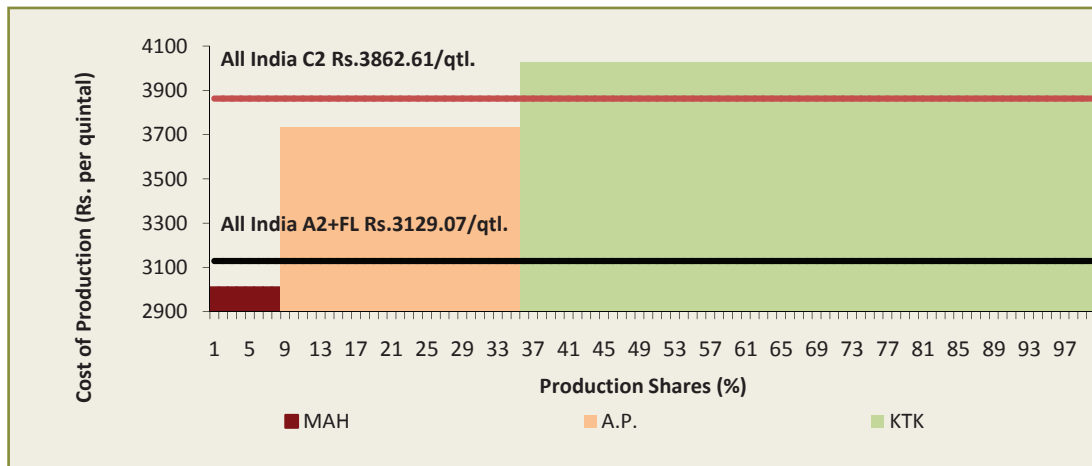


#### 4.4 (j) Soyabean

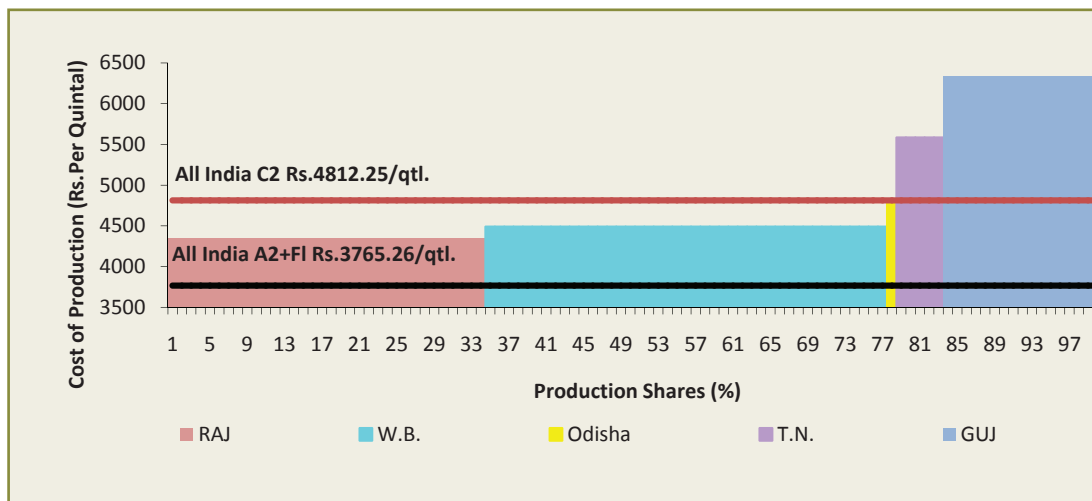




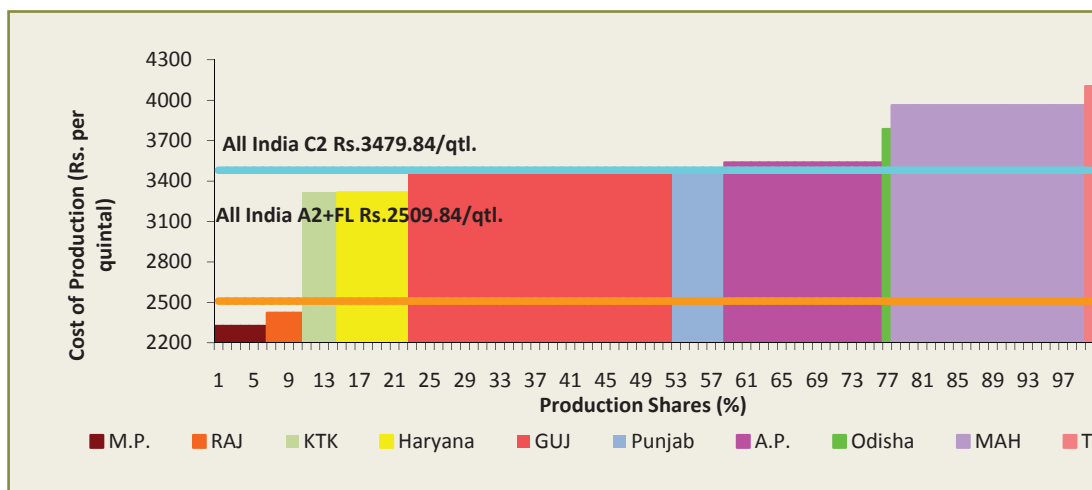
#### 4.4 (k) Sunflower



#### 4.4 (l) Sesamum



#### 4.4 (m) Cotton



## Inter-crop parity

4.14 Inter-crop price parity being a factor for determination of MSPs; the Commission makes an in-depth study of per hectare returns of different crops that are substitutes for each other. The underlying idea is that area allocation amongst different crops be such that their respective per hectare returns are more or less even and balanced. The objective of studying inter-crop price parity of crops competing for area allocation is that the farmers need to grow crops in an environment of their respective returns neutrality. Table 4.3 outlines relative returns over A2+FL and C2 in percentage terms for various kharif crops in reference to that of paddy, as numeraire and it is found that there is some degree of inequality in returns earned. As is apparent from table 4.3, returns ratio over C2 is maximum for cotton followed by tur in terms of relative returns to that of paddy over both C2 and A2+FL but ragi is far below in returns relative to that of paddy. Overall it may be concluded that cotton, pulses, soyabean and sesamum have very good returns relative to paddy so there is need to promote other oilseeds and coarse cereals by either changing their relative incentive structure or by increasing their productivity or both.

*Tur and cotton have highest returns over C2 as well as A2+FL in relation to paddy*

**Table 4.3:Relative Returns (%) of Kharif Crops over A2+FL and C2  
(Average from 2009-10 to 2011-12)**

CROP	Relative returns over A2+FL of crops with paddy as numeraire	Relative returns over C2 of crops with paddy as numeraire
<b>CEREALS:</b>		
Paddy	100	100
Maize	97	101
Jowar	91	69
Bajra	73	28
Ragi	-5	-234
<b>PULSES:</b>		
Tur	167	233
Moong	97	109
Urad	127	148
<b>OILSEEDS:</b>		
Groundnut	94	90
Soyabean	129	168
Sunflower	64	25
Sesamum	136	193
Nigerseed	60	-40
Cotton	162	263

## Terms of Trade Analysis

4.15 The domestic terms of trade between agriculture and non-agriculture were recognized as a terms of reference for CACP in recommending its MSP policy in 1980. It is undeniable that farmer's decisions are influenced not only by prices

he receives for his produce but also by prices he pays for goods and services purchased by him. Moreover, the relative shifts in prices of agricultural and non-agricultural commodities over time have a direct bearing on the welfare of the farm sector. Terms of trade data available up to the year 2009-10 (provisional) reveal that it has remained relatively stable, and in fact, marginally favoured agriculture in recent years. With base year TE 1990-91=100 the index has been oscillating between 101 and 107 since 1990-91 and has gone up to 102.6 in 2009-10. This methodology, which is more precise, is in contrast to the ratio of agricultural prices to non-agricultural prices, which is often taken as an indicator of terms of trade and has improved substantially from 100.8 in 2005-06 to 142.2 in 2012-13 (with base year 2004-05=100). Government has already set up a new committee, under the aegis of DAC, to come up with fresh estimates of terms of trade.



## Chapter-5

# Productivity: Different Dimensions

### Land Productivity

- 5.1 Agricultural productivity levels impinge a great deal upon global competitiveness on a sustainable basis, which in turn, is greatly influenced by prices. Given the scarcity of land and water, these resources are increasingly coming under pressure. It is, therefore, imperative to rationally utilize these resources. Thus, enhancing productivity is critical not only from the point of view of responding to demand expansion but also to make Indian agriculture globally competitive. Land productivity, though a partial component of total factor productivity (TFP), plays a vital role in influencing the real prices of products and higher productivity levels enhance the likelihood, *ceteris paribus*, of higher levels of profits and thereby may alleviate rural poverty in ultimate analysis. We would, therefore, first appraise productivity levels of important kharif crops temporally and also across crops. With this end in view, the long term annual growth rates in area, production and yield levels of major kharif crops during the decades of 1980s, 1990s and 2000s are collated. The periods from 1980-81 to 1989-90, 1990-1991 to 1999-2000; and 2000-01 to 2013-14 will connote decades of 1980s, 1990s & 2000s respectively. The crop-wise annual decadal growth rates

*Enhancing productivity is critical for competitive-ness*

alongwith the corresponding volatility, as measured by coefficient of variation (CV), are presented in table 5.1.

**Table 5.1: Growth Rates of Kharif Crops at All India Level during 1980s, 1990s and 2000s**  
(Percent)

S. No	Crop		1980s			1990s			2000s		
			A	P	Y	A	P	Y	A	P	Y
1	Foodgrains*	Growth	0.5	5.5	4.0	-0.6	1.1	1.1	-1.4	1.1	2.2
		C V	2.5	11.5	8.8	2.0	5.3	6.3	5.7	10.2	11.1
2	Cereals*	Growth	0.2	5.5	4.2	-0.5	1.2	1.3	-1.6	1.1	2.4
		C V	2.6	11.5	9.9	1.6	5.4	6.7	5.9	10.2	11.5
3	Paddy	Growth	0.8	6.6	5.4	0.7	2.1	1.4	-1.0	0.8	1.6
		C V	3.1	13.4	11.0	2.4	6.8	4.7	4.1	9.3	9.0
4	Coarse Cereals*	Growth	-0.4	3.7	4.0	-2.1	0.3	1.5	-2.5	2.2	2.9
		C V	3.7	11.6	10.6	6.2	10.1	8.3	10.3	14.1	12.7
5	Jowar	Growth	-1.1	2.3	3.2	-3.4	-0.9	1.9	-8.1	-6.8	3.3
		C V	4.1	10.4	11.4	11.7	18.2	12.4	25.7	20.4	14.5
6	Bajra	Growth	1.4	13.9	8.8	-1.8	5.4	5.6	-0.4	10.6	7.9
		C V	8.7	27.5	22.5	5.7	20.7	18.3	10.8	21.5	20.6
7	Maize	Growth	0.4	7.5	6.6	0.8	2.2	1.4	1.3	4.3	2.7
		C V	2.2	15.3	14.3	3.1	11.3	8.8	9.7	22.0	13.6
8	Ragi	Growth	-1.0	1.4	2.0	-3.4	-1.2	2.1	-2.7	1.0	2.3
		C V	4.6	9.3	7.6	9.8	7.0	8.7	16.0	20.6	14.3
9	Pulses*	Growth	2.7	6.4	3.4	-1.4	0.0	0.8	-0.1	1.7	1.4
		C V	6.9	12.7	6.5	5.8	9.3	8.1	7.6	14.0	10.7
10	Tur	Growth	2.9	5.3	2.1	-0.4	1.9	2.0	1.2	2.0	1.0
		C V	7.4	11.8	6.7	2.9	12.3	12.1	7.9	13.0	9.5
11	Moong	Growth	2.8	7.9	4.6	-2.2	-0.6	0.7	-0.1	8.5	6.7
		C V	6.4	12.4	8.6	8.7	13.4	11.0	12.2	29.5	22.2
12	Urad	Growth	2.4	8.3	5.6	-1.4	-1.4	0.1	-1.3	1.4	2.4
		C V	7.5	18.7	11.7	7.6	10.2	6.1	11.0	16.1	14.5
13	Oilseeds <sup>\$</sup>	Growth	3.6	8.2	3.2	1.0	2.4	0.9	0.9	6.5	3.8
		C V	11.5	23.4	9.3	4.2	12.5	6.2	7.5	21.2	13.9
14	Groundnut	Growth	2.3	7.2	3.6	-2.3	-2.4	-0.3	-3.1	8.1	10.1
		C V	9.0	22.6	14.7	7.5	13.6	13.9	12.3	22.7	19.6
15	Sunflower	Growth	42.9	46.2	2.5	3.1	3.2	0.8	-6.4	-5.0	1.3
		C V	56.3	52.7	18.1	18.7	20.0	8.4	44.1	43.5	13.5
16	Soyabean	Growth	18.5	24.0	5.4	11.0	16.4	4.7	5.0	8.2	3.2
		C V	45.4	52.5	13.5	27.9	35.7	11.0	21.8	35.6	17.2
17	Sesamum	Growth	0.3	9.0	8.7	-3.7	-3.4	1.3	0.2	5.6	4.5
		C V	7.1	16.9	15.3	18.3	18.3	10.4	9.6	18.9	14.1
18	Nigerseed	Growth	1.1	9.5	6.9	-2.0	-1.8	0.1	-3.6	-1.3	2.2
		C V	6.6	15.5	10.8	7.5	12.9	7.8	14.0	9.9	13.1
20	Cotton	Growth	-0.4	7.0	7.4	1.4	2.1	0.5	2.3	7.3	4.8
		C V	6.4	18.2	19.1	9.6	15.3	7.3	15.7	32.0	21.4

Source: Collated from DES data for all crops, except cotton in which case it is sourced from CAB.

Note: All groups/sub-groups/individual crops pertain to kharif season only.

\* Excluding OKP and Small Millets, \$ Excluding Castorseed



5.2 The following observations are made from the table 5.1:

- i. Productivity levels of kharif cereals, led by paddy, maize, jowar & bajra, posted a growth of 2.4 percent p.a. in 2000s compared to 1.3 percent p.a. in 1990s;
- ii. Higher growth in cereals' productivity during the decade of 2000s was accompanied by higher volatility; CV increased to 11.5 percent during 2000s from 6.7 percent during the preceding decade;
- iii. Growth in the yield levels of kharif pulses at 1.4 percent p.a. during 2000s, though not phenomenal, is higher than 0.8 percent p.a. achieved during the preceding decade. The pulses group owes its growth to moong and urad.
- iv. Growth in productivity levels of kharif oilseeds at 3.8 percent p.a. in 2000s compared to 0.9 percent p.a. in the preceding decade is led by groundnuts.
- v. While groundnuts posted a remarkable growth of over 10 percent p.a. in its productivity, area decelerated at 3.1 percent p.a. during 2000s;
- vi. Cotton commanded higher priority of farmers' *vis-à-vis* groundnuts as implied by expansion of its area at 2.3 percent p.a. during 2000s compared to 1.4 percent during the preceding decade. The yield levels of the crop accelerated to 4.8 percent p.a. from 0.5 percent during the corresponding periods. Cotton reaps much higher gross returns on per hectare basis than groundnuts (table 4.3). This explains, at least in part, diversion of area to cotton from groundnut.
- vii. The high growth in yield levels of cotton seems to be the result of unprecedented spread of Bt technology (more than 90 percent of cotton area now is under Bt), which is resistant to the main pest, and thereby has saved the crop damages, enhancing the yield levels.

### **Benchmarking Productivity: India *vis-à-vis* other Major Producing Countries**

5.3 In the globalized economy, India (for that matter, other countries too) has to compete with the leading agricultural countries. It is, therefore, imperative to envision India's position *vis-à-vis* other major producing countries on productivity scale. These 'Benchmark' countries would aid to gauge the gaps in our efficiency levels and also help setting productivity standards. India's productivity levels *vis-à-vis* major producing countries and also major producing states along with their respective efficiency gaps and production shares are given in table 5.2.

**Table 5.2: Benchmarking of Important Crops, TE 2012-13**

(Tonnes/Ha, %)

S. N	Crop	Yield (All India TE 2012-13)	Benchmarking States TE 2012-13	Benchmarking Countries TE 2012	Efficiency Gap in India's Yield level w.r.t benchmark Country (%)	Efficiency Gap in India's Yield level w.r.t. benchmark state (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	Paddy	3.54	Punjab (5.78, 10.7%), A.P (4.65, 12.5%), Tamil Nadu (4.62, 5.6%)	China (6.66, 28.1%), Vietnam (5.50, 5.9%), Indonesia (5.04, 9.4%), Bangladesh (3.83, 6.3%), India (3.51, 21.2%), Thailand (2.97, 5.0%)	46.9	38.8
2	Jowar	0.92	Madhya Pradesh (1.57, 9.4%), A.P (1.36, 6.1%), Gujarat (1.21, 2.2%)	Argentina (4.59, 7.6%), Mexico (3.82, 11.6%), USA (3.69, 11.7%), Ethiopia (1.99, 6.2%), India (0.92, 11.2%)	79.9	41.3
3	Maize	2.52	AP (4.87, 19.1%), Tamil Nadu (4.43, 5.8%), West Bengal (3.92, 1.7%)	USA (8.86, 34.6%), China (5.72, 22.2%), Brazil (4.53, 7.0%), India (2.52, 2.5%)	71.5	48.2
4	Tur	0.71	Bihar (1.78, 1.6%), Gujarat (1.08, 9.3%), U.P (1.00, 11.3%)	Myanmar(1.32, 20.0 %), Malawi (1.10, 5.1%), Tanzania (0.96, 5.9%), India (0.68, 63.1%)	46.5	60.3
5	Groundnut	1.24	Tamil Nadu (2.37, 14.2%), Rajasthan (1.81, 10.5%), MP (1.57, 4.9%)	USA (4.07, 5.4%), China (3.51, 39.3%), India (1.30, 17.0%), Nigeria (1.30, 8.0%)	69.6	47.8
6	Sunflower	0.70	UP (2.00, 2.5%) Haryana (1.78, 3.6%) Punjab (1.73, 4.1%)	China (2.43, 6.4%), Argentina (1.81, 8.5%), Ukraine (1.66, 21.8%), Russia (1.20, 21.1%), India (0.70, 1.6%)	71.2	65.0

S. N	Crop	Yield (All India TE 2012-13)	Benchmarking States TE 2012-13	Benchmarking Countries TE 2012	Efficiency Gap in India's Yield level w.r.t benchmark Country (%)	Efficiency Gap in India's Yield level w.r.t. benchmark state (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
7	Soyabean	1.30	Rajasthan (1.47, 10.0%), Maharashtra (1.45, 32.8%), MP (1.20, 52.3%)	Brazil (2.90, 26.8%), USA (2.80, 32.9%), Argentina (2.72, 19.6%), China (1.83, 5.4%), India (1.20, 4.7%)	55.3	11.9
8	Cotton	0.50	Tamil Nadu (0.80, 1.9%), Gujarat (0.65, 30.1%), Punjab (0.63, 5.6%)	China (1.33, 26.2%), Brazil (1.20, 5.8%), Pakistan (0.75, 8.5%), USA (0.74, 12.0%), India (0.51, 24.1%)	62.6	44.1

**Notes:**

- Paired figures in parentheses in column (4) indicate yield and share of state in total production of India in that order and corresponding figures in column (5) represent yield and share of a country in total world production.
- Countries with a minimum of 5% share in world production and states with around 1% share of all-India production have been considered for benchmarking analysis.
- Yield levels for India as given in col. (3) are slightly different from those in col. (5), due to difference in reference period.
- Efficiency gap =  $(1-e)*100$ , where  $e$  = yield of India/yield of benchmark country or state, as the case may be.

Sources: The data for countries is from FAO for TE 2012 & for states it is from CAB for TE 2012-13; In case of cotton in TN, it is average of 2009-10, 2011-12 & 2012-13 which is incidentally equal to av. of 2011-12 & 2012-13. As 2010-11 for this state is an outlier, it has been excluded for the purpose

#### 5.4 Based on the table 5.2, the following points emerge:

- In India, considerable proportions of various crops are produced at yield levels lower than those of all-India average yield level.
- Efficiency gaps<sup>14</sup> in India's yield levels wrt to respective benchmark countries are quite significant, ranging from 47% in case of paddy and tur to a high of 80% in case of jowar. For other crops, it is 55% (Soyabean), 63% (cotton), 70% (groundnut), 71% (sunflower), and 72% (maize).
- Likewise, efficiency gaps in all-India's average yield levels w.r.t. to respective benchmark states are 39% (paddy), 41% (jowar), 48% (maize), 60% (tur), 48% (groundnut), 65% (sunflower), 12% (Soyabean), and 44% (cotton). It may be noted that the yield of tur in Bihar is the highest in the world.
- Given high amounts of net outgo on account of imports of edible oils and pulses coupled with the existence of significant efficiency gaps in these crops, it calls

<sup>14</sup> Efficiency gap =  $(1-e)*100$ , where  $e$  = yield of India/yield of benchmark country or state as the case may be.

for an urgent need to enhance productivity levels by adapting suitable best practices prevalent in benchmarking countries/States, with *mutatis mutandis*.

## Cost of Production and Yield Rates

*An inverse relationship between real cost of production and yield exists*

- 5.5 On *a priori* basis, one would expect an inverse relationship between real cost of production and yield levels. With a view to statistically test this hypothesis, panel data (across states and over the years) on real costs and yield levels of various crops for 2000-01 to 2011-12 are analyzed by fitting the following regression model:

$$\ln(\text{CoP}_i) = a + e_i \cdot \ln(y_i)$$

where  $\text{CoP}_i$  = real Cost of Production of  $i^{\text{th}}$  crop,  $i=1,2,\dots,14$

$y_i$  = Yield rate of  $i^{\text{th}}$  crop;

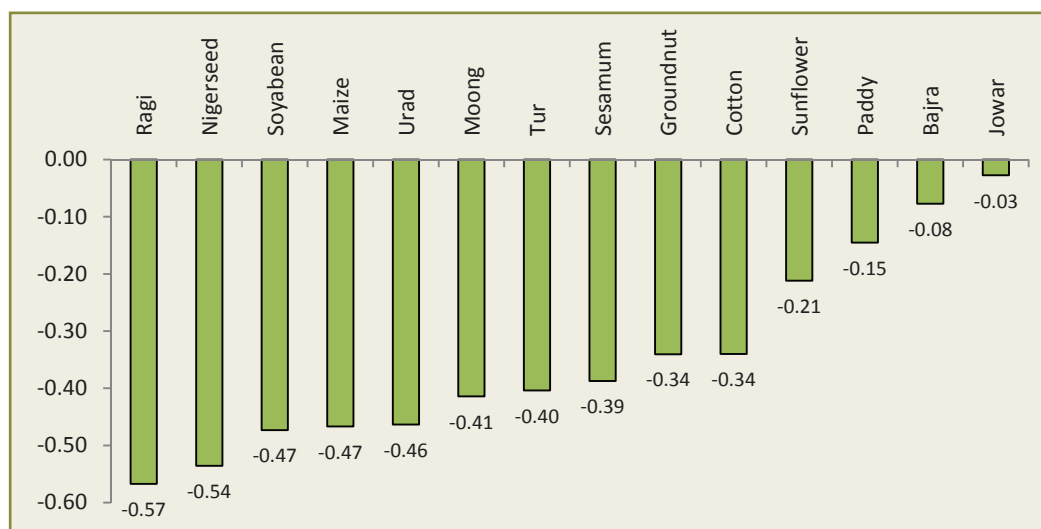
$e_i$  = elasticity of  $i^{\text{th}}$  crop;

$a$  = constant; and

$\ln$  denotes logarithmic function

- 5.6 Based on above regression model, elasticities of various crops have been determined which are presented in chart 5.1.

**Chart 5.1: Elasticity Impact of Yield on Real Costs, 2000-01 to 2011-12**



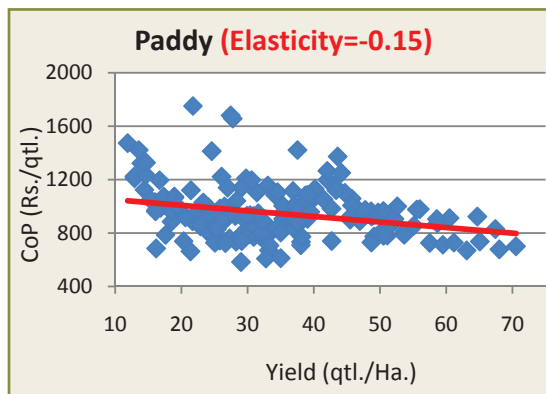
Note: Crops are arranged in ascending order of elasticities

Source: Computed by the Commission

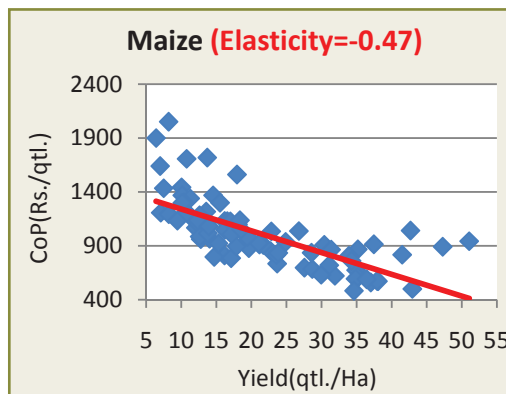
- 5.7 It is inferred that inverse relationship between real cost and yield levels holds good for 12 out of 14 crops analyzed (bajra, and jowar being aberrations). Real costs (CoP) could be reduced by 1 to 6 percent if their respective yield levels increase by 10 percent. The relationships between yield levels and real cost of production of various crops are depicted in scatter diagrams {Charts 5.2(i) to 5.2(xiv)}.

Charts 5.2 (i) to (xiv): Relationship between Cost of Production and Yield levels  
(Constant Prices 2011-12=100)

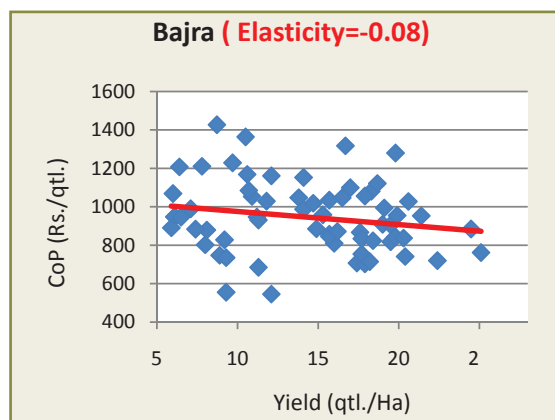
(i) Paddy



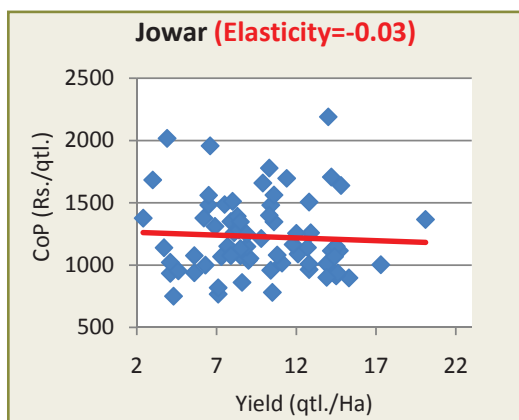
(ii) Maize



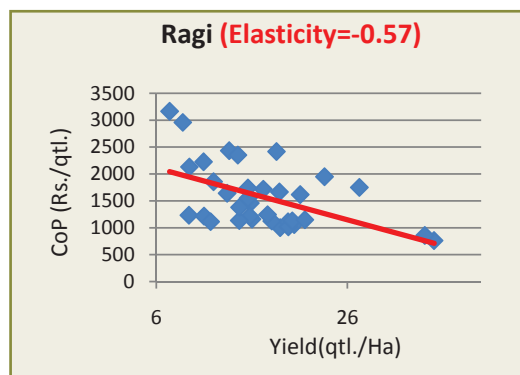
(iii) Bajra



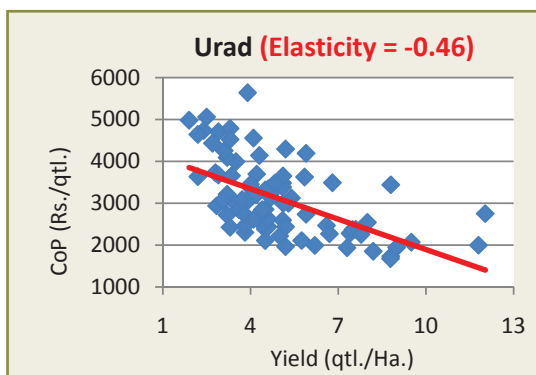
(iv) Jowar



(v) Ragi

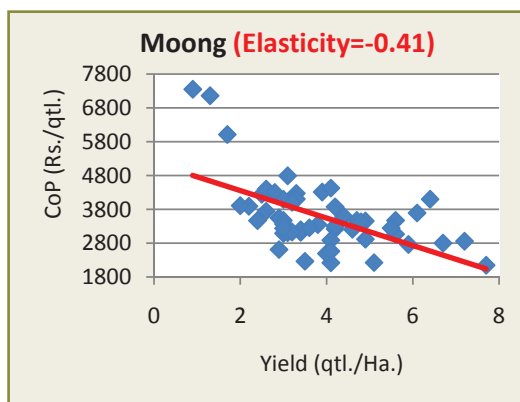


(vi) Urad

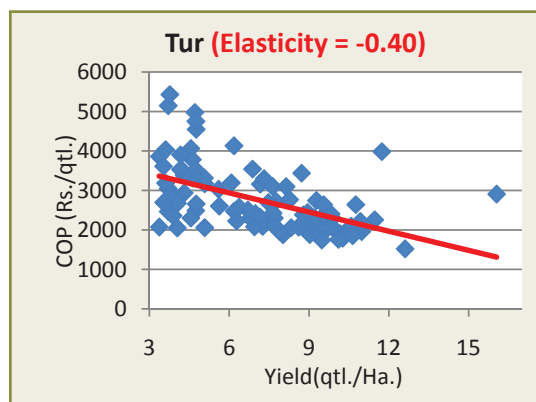




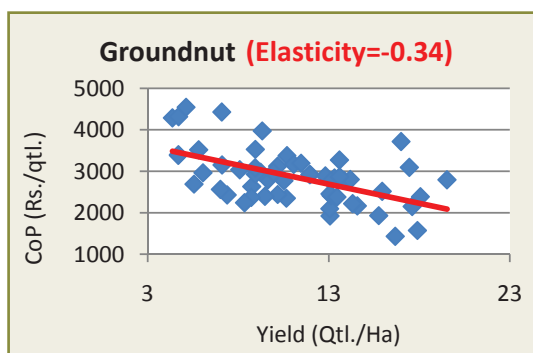
(vii) Moong



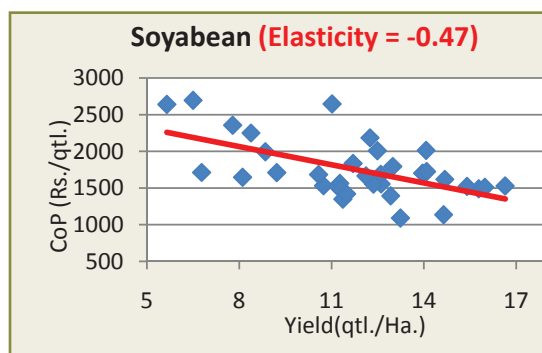
(viii) Tur



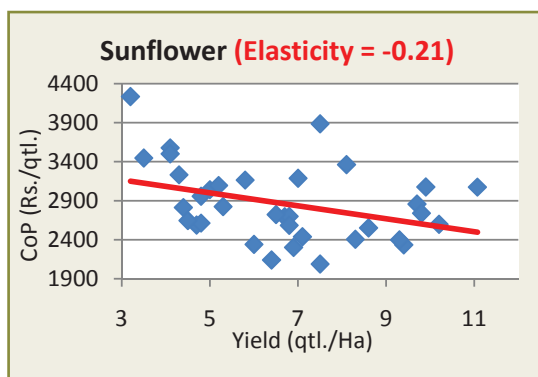
(ix) Groundnut



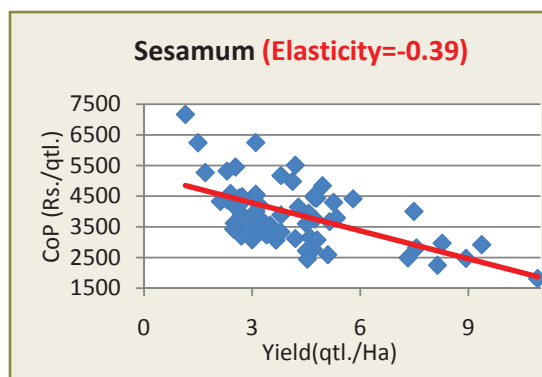
(x) Soyabean



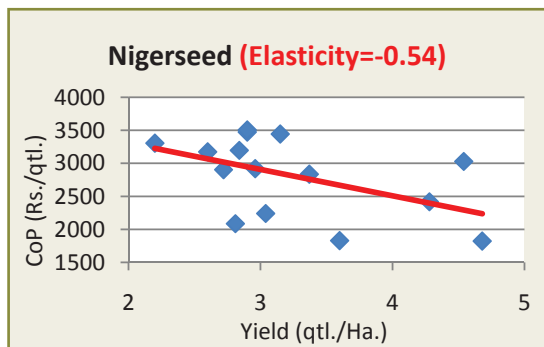
(xi) Sunflower



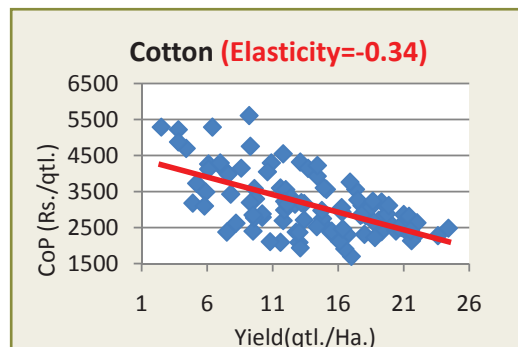
(xii) Sesamum



(xiii) Nigerseed



(xiv) Cotton



## Drivers of Productivity

- 5.8 Having established an inverse relationship between the cost of production and land productivity levels, a next cogent question arises as to what drives the productivity levels. To identify the drivers, it is hypothesized that yield levels are affected by technology (fertilizers, irrigation and seeds), nature (rainfall) and expected returns, which are approximated by gross returns in the preceding year. To test this, simple linear regression analyses have been undertaken on panel data for 2000-01 to 2011-12 across various states and the relevant elasticities are presented in annex table 5.1. The summary of interpretation of these results is given in para 5.9.
- 5-9 Farmers are economically rational and respond to price signals. For instance, yield level of paddy can be increased by 1 percent with an increase of 10 percent in its gross returns (GR) in the preceding year. Further, its yield level can also be augmented by 2 percent, just as an example, with an increase in fertilizer application or enhancing percent area irrigated by 10 percent. It may be noted that these are preliminary results which may change depending upon formulation of regression models.
- 5.10 Given that technology drives productivity which has considerable bearing on prices and global competitiveness, *ceteris paribus*, the need for substantially augmenting investment in R&D can hardly be over emphasized. However, India's public investment in agri-R&D is quite low compared to private investment (table 5.3):

*Drivers of productivity are gross returns, technology and rainfall*

**Table 5.3: Public & Private Investment in Agriculture R&D, 2013-14**  
(Rs crore)

Organization	Investment/Expenditure
DARE (Govt. of India)@	5729
DuPont	9229

@BE 2013-14, includes both plan and non-plan

- 5.11 It is seen that public expenditure on agri-R & D is way below that of a private player, just as an example. There is an urgent need to discover new varieties of seed and take them from laboratories to land so as to augment yield levels in a big way.
- 5.12 To recapitulate, following points are highlighted:
- Since productivity enhancement contains the cost of production which improves global competitiveness, investment in technology (irrigation) and agri-R&D will be cost effective as it improves profitability and thus may help alleviating rural poverty.

*Investment in technology (irrigation) and agri-R&D improves profitability*

- ii. Irrigated tracts give rise to higher levels of profitability and fertilizers usage on per hectare basis is also significantly higher in these areas. Thus, farmers who do not have access to irrigation are also the ones who get lesser subsidy on fertilizers on per hectare basis. This is a double whammy for farmers whose land is less endowed with technology (irrigation). From equity perspective, it is better to invest in irrigation infrastructure than on fertilizer subsidy when there is a competing demand on resources.
- iii. Efficiency gaps in productivity levels of various crops in India are quite substantial, which remain significant even when our best performing states are compared against benchmark countries. There is a need to meticulously study the best global farming practices and replicate the same, after having due regard to its global agro-climatic conditions, in India.



## Chapter-6

# Recommendations for Price Policy

- 6.1 As per the mandate of the Commission, the first and foremost need is to make Indian agriculture remunerative enough so that farmers feel incentivized to adopt new technologies, and raise productivity in a sustainable manner. The Commission has, in its recent reports, made a concerted effort to 'getting both the prices and markets right'. If agro-markets are allowed to function effectively with active participation of private players, farmers would also get better returns for their produce. In doing so, the Commission has taken into account its broad terms of reference namely, the cost of production of the commodity, overall demand-supply, domestic and international prices, inter-crop parity in returns, a balance in terms of trade between agriculture and non-agriculture sectors and their likely impact on the overall prices in the economy.

*Groundnut has shown a 95 percent increase in production compared to last year but prices have crashed*

### Overall Demand and Supply

- 6.2 The year 2013-14 has been a good year in terms of record productions in almost all major crop groups. But the stock-to-use ratios seem under pressure in the case of most of the major kharif crops except rice. The market prices of soyabean, urad, moong and cotton have been ruling above MSP but in case of



paddy (Eastern Belt), tur, maize and groundnut, the market price have fallen to levels lower than MSP in 2013-14. The worst sufferer has been groundnut which has shown a 95 percent increase in production as compared to last year but the prices have crashed. The visits of the Commission to the states of Gujarat, Andhra Pradesh and Rajasthan revealed that inadequate procurement by Government agencies, due to lack of storage and warehousing facilities, have further aggravated the problem. This acts as a disincentive to the crop diversification strategy from cereals to maize, pulses and oilseeds. The need of the hour is an effective procurement mechanism for these crops and linkages with processing and retail sector.

- 6.3 As discussed in chapter 2 in detail, agricultural markets in India are stifled by various controls on stocking (via ECA), on marketing (via APMC Act) and various distortions caused by the pricing and procurement policies followed by Centre and State Governments. Efficient and well-functioning markets are an urgent need to enhance agricultural growth, efficient use of resources and bringing prosperity to farmers. The open-ended procurement policy for cereals has distorted their markets and needs an urgent review. In addition, bonuses given by some State Governments also distort the inter crop parity. The Commission recommends rationalization of bonuses/levies/taxes etc and reiterates that any support to be given to the farmers should be in the form of investment support per hectare of cultivated area, which is crop neutral, rather than bonus (price support) for a particular crop. Some states have restriction in the inter-state movement of agricultural produce. For instance Andhra Pradesh does not allow superfine variety rice to move outside the state. This is not only against the EC Act but also deprives farmers from the chance of selling their produce in other states where there could be a better chance of earning more. Free movement of goods can facilitate availability of better and cheaper goods to the consumers across the country and also help farmers get better price for their produce.

*Any support to be given to the farmers should be in the form of investment support per hectare of cultivated area*

### **Commission's visit to the states of Gujarat, Andhra Pradesh and Rajasthan**

- 6.4 In order to take a first-hand stock of procurement operation in the field and movement of prices of different kharif crops vis-a-vis MSP, the Commission formed three teams and visited the states of Gujarat, Andhra Pradesh and Rajasthan. During field visits the teams observed the MSP operations with respect to groundnut, cotton, maize, jowar, urad and moong. The Commission noticed that groundnut and maize were selling below MSP in the market centers visited (APMCs). In most cases farmers were neither aware of MSP nor MSP operation and government procurement agencies were missing from most of the markets. Infrastructure for procurement under MSP continues to be either inadequate or missing. The dispute regarding a FAQ also still remains unaddressed as there is no effective mechanism at present to determine the FAQ.

*Infrastructure for procurement needs to be enhanced*



- 6.5 The Commission in this regard suggests upgradation of infrastructure in APMC yards with prominent display boards, mechanized and transparent grading facilities and proper storage and warehousing structures. If the market price of produce is less than the MSP, the concerned state should immediately bring out advertisement in the local newspapers indicating details of MSP, procurement agency/centre, name of contact person, helpline number etc.

## Global Scenario

- 6.6 As discussed in Chapter 3, a comparison of international prices and domestic prices for major crops shows that these have increasingly aligned over the last decade indicating that Indian agriculture is very much in tune with global markets for major agri-products. India is internationally competitive in the production of rice, cotton and maize which is corroborated by the increasing share of India in their global trade. India is also the largest importer of pulses and edible oils. Imports of pulses are permitted under OGL at zero duty while imports of crude edible oils and refined edible oils are freely allowed with 2.5 percent and 10.0 percent duties respectively but exports are banned. This restrictive export policy along with free imports clearly shows a pro-consumer bias and needs to change in order to take into account producer interest as well. This becomes all the more important in the case of groundnut which has a bumper crop this year. But exports of groundnut oil are restricted in packs of 5 kg with a MEP. The situation demands a complete liberalization of exports of edible oils in bulk especially for groundnut oil. Exports need to be fully opened as also imports to have a neutral trade policy for producers as well as consumers. The need of the hour is a stable, liberal and neutral (for producers as well as consumers) trade policy with only moderate duties of 5-10% in most of the years aiming at the alignment of the domestic and international prices and guard against sharp spikes and troughs through constant monitoring and application of tariffs.

*The need of the hour is a stable, liberal and neutral (for producers as well as consumers) trade policy with only moderate duties of 5-10%*

## Rising Food and Fertilizer Subsidies

- 6.7 Together, food and fertilizer subsidies, as a ratio of GDP (agri), accounted for 9.2 percent in 2012-13, up from 6.0 percent in 2000-01. In comparison, public investment in agriculture is only around one-fourth of this which is reflective of the imbalance between use of subsidies and investments as policy instruments for agricultural growth. This needs to be urgently corrected as marginal returns on investments are around 3 to 10 times higher than on subsidies in terms of agricultural growth and rural poverty alleviation<sup>12</sup>. Further, if the design of these subsidies is restructured in favour of conditional cash transfers, it could save 30-40% of the expenditure with efficiency gains. This would also be in line with international best practices.

## Costs of Production and Profitability

- 6.8 Actual C2 and A2+FL costs for the kharif crops are now available for the year 2011-12. At all India level gross rate of returns, i.e., relative profit over A2+FL

<sup>12</sup> "Investment, subsidies, and pro-poor growth in rural India" by Shenggen Fan, Ashok Gulati and Sukhadeo Thorat, *Agricultural Economics* 39 (2008) Pgs 163-170

and net rate of returns, i.e., relative profit over C2 are maximum for cotton followed by tur. At the other extreme with negative gross and net returns is ragi. Analyzing inter-crop parity reveals that paddy and maize are close to each other on profitability over C2 cost; cotton, pulses (except moong), soyabean & sesamum are much more profitable than paddy while groundnut, sunflower, nigerseed and ragi are losing out in relation to paddy. The projected costs (A2+FL and C2) of major kharif crops for the 2014-15 season are estimated to be: Rs 978.18/ql & Rs 1266.28/ql for paddy; Rs 1370.09/ql & Rs 1788.20/ql for jowar, Rs 831.64/ql & Rs 1075.16 for bajra, Rs 913.51/ql & Rs 1164.70/ql for maize, Rs 1474.42/ql & Rs 1793.87/ql for ragi; Rs 3104.62/ql & Rs 4214.45/ql for tur; Rs 3889.84/ql & Rs 4970.77/ql for moong; Rs 3225.04/ql & Rs 4316.98/ql for urad; Rs 3231.87/ql & Rs 3880.25/ql for groundnut; Rs 1728.95/ql & Rs 2225.84/ql for soyabean; Rs 3129.07/ql & Rs 3862.61/ql for sunflower; Rs 3765.26/ql & Rs 4812.25/ql for sesamum; Rs 3084.47/ql & Rs 4012.91/ql for nigerseed and Rs 2509.84/ql & Rs 3479.84/ql for cotton.

## Drivers of Productivity

*Productivity enhancement is the solution to increasing costs of production*

- 6.9 Since productivity enhancement is the solution to increasing costs of production, investment in technology (irrigation) and agri-R&D is the most productive. Gross returns over A2+FL, fertilizer consumption, irrigation ratio, monsoon rainfall are found to drive yield levels and their impact of these factors varies from crop to crop. Efficiency gaps in productivity levels of various crops in India are quite substantial, which remain significant even when our best performing states are compared against benchmark countries. There is a need to meticulously study the best global farming practices and replicate the same, after having due regard to its global agro-climatic conditions, in India.

## Terms of Trade

- 6.10 The terms of trade between agriculture and non-agriculture, measured as the ratio of prices received by the farming community for their produce, and prices paid for products that are bought by peasantry, have remained somewhat stable during the last five years. The ratio of agricultural prices to non-agricultural prices, using the wholesale price indices, has improved substantially from 100.8 in 2005-06 to 142.2 in 2012-13 (with base year 2004-05=100).

## Commission's recommendation for MSP for Kharif Crops to be Marketed in 2014-15:

- 6.11 Keeping all these factors in mind, the Commission recommends the following MSPs of different kharif crops:

Table 6.1: Recommended MSPs of Kharif Crops (KMS 2014-15) (Rs/qttl)

Crops	MSP (Marketing season)			Projected Costs		Domestic Average wholesale price (Oct-Dec)	International Price (Oct-Dec)	Demand- Supply Ratio	MSP Recommended by CACP
	2013-14	2012-13	2011-12	A2 +FL	C2				
				2014-15					
Paddy	1310 (4.8)	1250 (15.7)	1080 (8.0)	978.18	1266.28	1330	1575	Excessive stocks	1360 (3.8)
Paddy Grade A	1345 (5.1)	1280 (15.3)	1110 (7.8)						1400 (4.1)
Jowar-Hybrid	1500 (0.0)	1500 (53.1)	980 (11.4)	1370.09	1788.20	2000	1270		1530 (2.0)
Jowar-Maldandi	1520 (0.0)	1520 (52.0)	1000 (11.1)						1550 (2.0)
Bajra	1250 (6.4)	1175 (19.9)	980 (11.4)	831.64	1075.16	1300			1250 (0.0)
Ragi	1500 (0.0)	1500 (42.9)	1050 (8.8)	1474.42	1793.87	2150			1550 (3.3)
Maize	1310 (11.5)	1175 (19.9)	980 (11.4)	913.51	1164.70	1200	1250	Low	1310 (0.0)
Tur (Arhar)	4300 (11.7)	3850 (4.1)	3700* (5.7)	3104.62	4214.45	4230			4350 (1.2)
Moong	4500 (2.3)	4400 (10.0)	4000* (9.0)	3889.84	4970.77	5250		Low	4600 (2.2)
Urad	4300 (0.0)	4300 (13.2)	3800* (11.8)	3225.04	4316.98	4800		Low	4350 (1.2)
Groundnut	4000 (8.1)	3700 (37.0)	2700 (17.4)	3231.87	3880.25	3150	5600	Low	4000 (0.0)
Sunflower	3700 (0.0)	3700 (32.1)	2800 (19.1)	3129.07	3862.61	3100			3750 (1.4)
Soyabean (Black)	2500 (13.6)	2200 (33.3)	1650 (17.9)	1728.95	2225.84				2500 (0.0)

Crops	MSP (Marketing season)			Projected Costs		Domestic Average wholesale price	International Price	Demand- Supply	MSP Recommended by CACP
				A2 +FL	C2				
	2013-14	2012-13	2011-12	2014-15					
Soyabean (Yellow)	2560 (14.3)	2240 (32.5)	1690 (17.4)			3600	3500		2560 (0.0)
Sesamum	4500 (7.1)	4200 (23.5)	3400 (17.2)	3765.26	4812.25	11000			4600 (2.2)
Nigerseed	3500 (0.0)	3500 (20.7)	2900 (18.4)	3084.47	4012.91	5000			3600 (2.9)
Cotton (MS)	3700 (2.8)	3600 (28.6)	2800 (12.0)	2509.84	3479.84	4700	4000	Low	3750 (1.4)
Cotton (LS)	4000 (2.6)	3900 (18.2)	3300 (10.0)						4050 (1.3)
Note: 1. Figures in parentheses indicate increase over last year									
2. Wholesale price for paddy is averaged over States of UP, WB & Punjab; for jowar, tur & urad in Maharashtra; for bajra in Rajasthan; for ragi, maize & sunflower in Karnataka; moong in Rajasthan; groundnut in Gujarat; soyabean & nigerseed in MP; for sesamum in UP; for cotton in Guj& Maharashtra.									
3. International prices are taken from USDA for Viet 25% rice and converted to paddy using conversion factor of 0.67; from World Bank for Sorghum (US), yellow, f.o.b. Gulf; Maize (US), no. 2, yellow, f.o.b. Gulf; Groundnuts (US), shelled basis, c.i.f. Rotterdam converted to nut (with shell) using conversion factor 0.66; Soybeans (US), c.i.f. Rotterdam; Cotlook A index, middling 1-3/32 inch, c.i.f. converted to kapas using a conversion factor of 0.33; from NAFED for tur, moong&urad, c&f. International prices have been converted assuming the exchange rate at 1US\$ =Rs 62.7									

6.12 The Commission feels that these recommendations would lead to better incentive structures and diversification of the cropping patterns in line with emerging demand patterns in the economy. Effectively functioning agro-markets also would go a long way to help farmers realize better returns and promoting efficiency and growth within a unified all India market.

(Ashok Gulati)  
**CHAIRMAN**

(Ashok Vishandass)  
**MEMBER**

(D.S. Raghu)  
**MEMBER**

(Kaibalya Pradhan)  
**MEMBER**

(Shailja Sharma)  
**MEMBER SECRETARY**

**26th February, 2014.**



# Annexe Tables

Table - 1.1  
All India Estimates of Area, Production and Yield of Agricultural Commodities

Area : Million hectares  
Prod : Million tonnes  
Yield : Kgs per hectare

Crops		2008-09			2009-10			2010-11			2011-12			2012-13			2013-14*		
		Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Rice																			
	Kharif	40.79	84.91	2081	37.60	75.92	2019	38.03	80.65	2121	40.12	92.78	2312	38.91	92.37	2374	39.57	92.00	2325
	Rabi	4.74	14.27	3011	4.32	13.18	3053	4.83	15.33	3174	3.88	12.52	3224	3.84	12.87	3352	4.38	14.19	3239
	Total	45.53	99.18	2178	41.92	89.09	2125	42.86	95.98	2239	44.01	105.30	2393	42.75	105.24	2462	43.95	106.19	2416
	Wheat	27.75	80.68	2907	28.46	80.80	2839	29.07	86.87	2989	29.86	94.88	3177	30.00	93.51	3117	30.61	95.60	3123
Barley		0.71	1.69	2394	0.62	1.35	2172	0.71	1.66	2357	0.64	1.62	2517	0.70	1.75	2518	0.76	1.92	2538
Jowar																			
	Kharif	2.89	3.05	1055	3.24	2.76	853	3.07	3.44	1119	2.62	3.29	1256	2.43	2.84	1171	2.17	2.32	1071
	Rabi	4.64	4.19	904	4.55	3.94	865	4.31	3.56	827	3.63	2.69	741	3.79	2.44	644	3.55	3.21	904
	Total	7.53	7.25	962	7.79	6.70	860	7.38	7.00	949	6.25	5.98	957	6.21	5.28	850	5.71	5.53	968
	Bajra	8.75	8.89	1015	8.90	6.51	731	9.61	10.37	1079	8.78	10.28	1171	7.30	8.74	1197	7.95	8.80	1107
Maize																			
	Kharif	6.89	14.12	2048	7.06	12.29	1740	7.28	16.64	2285	7.38	16.49	2234	7.21	16.19	2244	7.59	16.88	2223
	Rabi	1.28	5.61	4387	1.20	4.43	3694	1.27	5.09	4003	1.40	5.27	3765	1.46	6.06	4156	1.49	6.40	4288
	Total	8.17	19.73	2414	8.26	16.72	2024	8.55	21.73	2540	8.78	21.76	2478	8.67	22.25	2566	9.09	23.29	2562
Ragi		1.38	2.04	1477	1.27	1.89	1489	1.29	2.19	1705	1.18	1.93	1641	1.13	1.57	1392	1.14	1.69	1483
Coarse Cereals																			
	Kharif	20.83	28.54	1371	21.31	23.83	1119	22.15	33.08	1494	20.75	32.44	1563	18.82	29.79	1583	19.55	30.11	1540
	Rabi	6.62	11.49	1735	6.37	9.72	1525	6.29	10.32	1641	5.67	9.58	1689	5.94	10.25	1725	5.80	11.53	1989
	Total	27.45	40.04	1459	27.68	33.55	1212	28.43	43.40	1526	26.42	42.01	1590	24.76	40.04	1617	25.35	41.64	1643
Cereals																			
	Kharif	61.62	113.45	1841	58.91	99.75	1693	60.18	113.73	1890	60.88	125.22	2057	57.73	122.16	2116	59.12	122.11	2065
	Rabi	39.12	106.45	2721	39.14	103.70	2649	40.18	112.52	2800	39.42	116.98	2968	39.78	116.63	2932	40.79	121.32	2974
	Total	100.74	219.90	2183	98.05	203.45	2075	100.36	226.25	2254	100.29	242.20	2415	97.52	238.79	2449	99.91	243.43	2436
Tur (Arhar)		3.38	2.27	671	3.47	2.46	710	4.37	2.86	655	4.01	2.65	662	3.89	3.02	776	3.89	3.34	859
Moong		2.84	1.03	364	3.07	0.69	225	3.51	1.80	513	3.43	1.63	477	2.75	1.19	433	2.94	1.28	436
Urad		2.67	1.17	440	2.96	1.24	420	3.26	1.76	540	3.30	1.77	535	3.19	1.90	595	2.99	1.59	532
Gram		7.89	7.06	895	8.17	7.48	915	9.19	8.22	895	8.30	7.70	928	8.42	8.83	1048	9.66	9.79	1013
Pulses																			
	Kharif	9.81	4.69	478	10.58	4.20	397	12.32	7.12	578	11.19	6.06	541	9.95	5.91	594	10.13	6.25	617
	Rabi	12.29	9.88	804	12.70	10.46	823	14.08	11.12	790	13.27	11.03	831	13.30	12.43	934	14.66	13.52	922
	Total	22.09	14.57	659	23.28	14.66	630	26.40	18.24	691	24.46	17.09	699	23.26	18.34	789	24.79	19.77	798

(Contd..)

**Table - 1.1 (Concluded)**  
**All India Estimates of Area, Production and Yield of Agricultural Commodities**

Area : Million hectares  
Prod : Million tonnes  
Yield : Kgs per hectare

Crops		2008-09			2009-10			2010-11			2011-12			2012-13*			2013-14*		
		Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield	Area	Prod.	Yield
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
<b>Foodgrains</b>																			
	Kharif	71.43	118.14	1654	69.49	103.95	1496	72.50	120.85	1667	72.07	131.27	1822	67.69	128.07	1892	69.25	128.36	1854
	Rabi	51.40	116.33	2263	51.84	114.16	2202	54.27	123.64	2278	52.69	128.01	2430	53.09	129.06	2431	55.45	134.84	2432
	Total	122.83	234.47	1909	121.33	218.11	1798	126.76	244.49	1929	124.75	259.29	2078	120.78	257.13	2129	124.70	263.20	2111
<b>Groundnut</b>																			
	Kharif	5.29	5.62	1063	4.62	3.85	835	4.98	6.64	1335	4.32	5.13	1188	3.93	3.19	811	4.49	7.02	1564
	Rabi	0.88	1.55	1764	0.86	1.58	1830	0.88	1.62	1846	0.95	1.84	1938	0.79	1.51	1909	1.08	2.12	1965
	Total	6.16	7.17	1163	5.48	5.43	991	5.86	8.26	1411	5.26	6.96	1323	4.72	4.70	994	5.57	9.14	1642
<b>Soyabean</b>		9.51	9.91	1041	9.73	9.96	1024	9.60	12.74	1327	10.11	12.21	1208	10.84	14.67	1353	12.03	12.45	1034
<b>Sunflower</b>																			
	Kharif	0.66	0.36	540	0.57	0.21	378	0.32	0.19	608	0.26	0.15	566	0.30	0.19	621	0.25	0.13	544
	Rabi	1.15	0.80	696	0.91	0.64	700	0.61	0.46	748	0.47	0.37	783	0.53	0.36	674	0.46	0.34	731
	Total	1.81	1.16	639	1.48	0.85	576	0.93	0.65	701	0.73	0.52	706	0.83	0.54	655	0.71	0.47	666
<b>Sesamum</b>		1.81	0.64	354	1.94	0.59	303	2.08	0.89	429	1.90	0.81	426	1.71	0.69	402	1.60	0.67	420
<b>Nigerseed</b>		0.39	0.12	297	0.38	0.10	266	0.37	0.11	290	0.36	0.10	269	0.31	0.10	329	0.27	0.10	361
<b>Rapeseed/</b>		6.30	7.20	1143	5.59	6.61	1183	6.90	8.18	1185	5.89	6.60	1121	6.36	8.03	1262	6.63	8.25	1245
<b>Mustard</b>																			
<b>Safflower</b>		0.29	0.19	642	0.29	0.18	621	0.24	0.15	617	0.25	0.15	580	0.18	0.11	591	0.17	0.12	707
<b>Nine Oilseeds</b>																			
	Kharif	18.53	17.81	961	17.97	15.73	875	18.23	21.92	1203	18.42	20.69	1123	18.32	20.79	1135	19.65	22.02	1121
	Rabi	9.03	9.91	1097	7.99	9.15	1146	9.00	10.56	1174	7.89	9.11	1155	8.16	10.15	1244	8.63	10.96	1270
	Total	27.56	27.72	1006	25.96	24.88	958	27.22	32.48	1193	26.31	29.80	1133	26.48	30.94	1168	28.28	32.98	1166
<b>Cotton\$</b>		9.41	29.00	524	10.13	30.50	512	11.24	33.91	513	12.18	36.70	512	11.98	36.50	518	11.62	37.50	549
<b>Cotton\$\$</b>		9.41	22.28	403	10.13	24.02	403	11.24	33.00	499	12.18	35.20	491	11.98	34.22	486	11.62	35.60	521
<b>Jute#</b>		0.79	9.63	2207	0.81	11.23	2492	0.77	10.01	2329	0.81	10.74	2389	0.78	10.34	2396	0.77	10.72	2521
<b>Mesta#</b>		0.12	0.73	1141	0.09	0.59	1122	0.10	0.61	1115	0.10	0.66	1248	0.09	0.59	1237	0.08	0.58	1294
<b>Jute &amp; Mesta#</b>		0.90	10.37	2071	0.91	11.82	2349	0.87	10.62	2192	0.90	11.40	2268	0.86	10.93	2281	0.85	11.31	2404
<b>Sugarcane</b>		4.42	285.03	64553	4.17	292.30	70021	4.88	342.38	70091	4.04	361.04	89416	5.00	341.20	68254	5.03	345.92	68745

\* : Second Advance Estimates

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

\$\$ : E&S Prod. estimates of million bales of 170 kgs each.

# : Prod. estimates of Million bales of 180 kgs each.

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

Table - 2.1  
Availability of Kharif Crops

(in million tonnes)

S.No.	Rice			Rice*			Maize		
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14
1	Opening Stocks ^	20.36	26.59	26.91	25.10	25.10	0.60	1.35	1.34
2	Production #	105.30	105.24	106.19	104.40	103.00	21.76	22.26	23.29
3	Imports	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.01
4	Total Supply (1+2+3)	125.66	131.83	133.10	129.50	128.10	22.36	23.62	24.63
5	Exports	7.18	10.15	10.00	10.38	10.00	3.86	4.79	4.00
6	Consumption	91.89	94.77	99.00	93.33	95.00	17.16	17.49	20.96
7	Total Use (5+6)	99.07	104.92	109.00	103.71	105.00	21.02	22.28	24.96
8	Ending Stock (4-7)	26.59	26.91	24.10	25.10	23.10	1.35	1.34	-0.32
9	Stock to Use Ratio (%) (8/7)	26.84	25.65	22.11	24.20	22.00	6.40	6.00	-1.29

Note: # : Production figures for Rice and Maize are from DES; (for 2013-14 as per IInd Adv. Est.)

^ : Opening stock of Rice (1st Oct.) is as per Deptt. of Food & PD

(Export & import are projected for 2013-14 based on figures available upto Sept.,2013)

\* : as per USDA

Sources : NCAER, DES, DFPD, DGCIS-Kolkata and USDA

S.No.	Tur/Arhar			Urad			Moong		
	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14
1	Opening Stocks	0.05	0.05	0.05	0.15	0.09	0.07	0.15	0.18
2	Production #	2.65	3.02	3.34	1.90	1.59	1.63	1.19	1.28
3	Imports	0.37	0.38	0.28	0.46	0.4	0.43	0.64	0.40
4	Total Supply (1+2+3)	3.07	3.45	3.67	2.51	2.08	2.13	1.98	1.86
5	Exports	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Consumption	3.02	3.40	3.41	2.42	2.22	1.98	1.81	1.73
7	Total Use (5+6)	3.02	3.40	3.41	2.42	2.22	1.98	1.81	1.73
8	Ending Stock (4-7)	0.05	0.05	0.25	0.09	-0.14	0.15	0.18	0.13
9	Stock to Use Ratio (%) (8/7)	1.65	1.47	7.44	3.93	-6.09	7.58	9.71	7.25

Note: # : Production figures are from DES; (for 2013-14 as per IInd Adv. Est.)

Sources : India Pulses & Grains Association (IPGA) & DES

(contd..)

**Table - 2.1(concluded)**  
**Availability of Kharif Crops**

(in million tonnes)

S.No.	Particulars	Soyabean Oil			Edible Oils			Cotton*		
		2011-12	2012-13	2013-14	2011-12	2012-13	2013-14	2011-12	2012-13	2013-14
1	Opening Stocks	0.24	0.36	0.23	1.19	1.61	1.62	4.58	4.00	3.50
2	Production	1.71	1.73	1.70	8.12	8.30	9.00	36.70	36.50	37.50
3	Imports	1.17	1.09	1.23	9.00	9.20	10	0.75	1.46	1.70
4	Total Supply (1+2+3)	3.12	3.18	3.16	18.31	19.11	20.62	42.03	41.96	42.70
5	Exports	0.01	0.00	0.00	0.00	0.00	0.1	12.96	10.14	9.00
6	Consumption	2.75	2.95	3.00	16.70	17.49	18.88	25.07	28.32	29.70
7	Total Use (5+6)	2.76	2.95	3.00	16.70	17.49	18.98	38.03	38.46	38.70
8	Ending Stock (4-7)	0.36	0.23	0.16	1.61	1.62	1.64	4.00	3.50	4.00
9	Stock to Use Ratio (%) (8/7)	13.04	7.80	5.33	9.66	9.26	8.65	10.52	9.10	10.34

Source : USDA

Source : NCAER

\* : Million bales of 170 Kg each

Source : O/o The Textile Commissioner



Table - 2.2  
State-wise Data on Eight Parameters of Market Distortion-Paddy/Rice

Sl No	State	Taxes/Levies/ Interest Charges/ Incidentals etc. (%)	Bonus on Paddy (2013-14)	Proc of Rice as % share in Prod (2012-13)	Stock Limits (Avg. of Rice & Paddy in tonnes)	Inverse of Stock Limit(1/ col.6)	Levy Rice	No. of Vital Market Reforms not done out of 7	Regulated Market Gap (in %)	Road Density (per'000 sq. km.)	Inverse of Road Density (1/ col.11)
1	2	3	4	5	6	7	8	9	10	11	12
1	ANDHRA PD	19.5*	0	59.35	39	0.03	75	1	74.15	865.32	0.0012
2	ASSAM	0	0	0.44	0	0	50	3	77.36	3082.55	0.0003
3	BIHAR	6.5	0	17.76	0	0	50	0	100	1387.4	0.0007
4	CHHATTISGARH	9.7*	300	72.69	0	0	25	4	89.6	695.05	0.0014
5	GUJARAT	3.5	0	0.01	0	0	50	0	83.97	796.78	0.0013
6	HARYANA	11.5	0	65.62	0	0	25	4	50.06	943.84	0.0011
7	HIMACHAL PD	0	0	0.54	0	0	50	0	92.52	861.51	0.0012
8	JHARKHAND	3.5	0	7.11	50	0.02	50	0	80.19	299.86	0.0033
9	KARNATAKA	4	290	1.79	0	0	33	0	78.98	1469.17	0.0007
10	KERALA	0	490	45.23	0	0	0	0	100	5177.68	0.0002
11	MADHYA PD.	4.7	150 (Com); 150 (Gr A)	32.36	0	0	30	2	86.59	640.05	0.0016
12	MAHARASHTRA	3.55	0	6.3	145	0.01	30	1	77.5	1334.1	0.0007
13	ODISHA	15.5*	0	47.31	0	0	25	5	78	1662.33	0.0006
14	PUNJAB	14.5	0	75.24	138	0.01	0	3	33.85	1671.76	0.0006
15	TAMIL NADU	0	50 (Com); 70 (Gr A)	10.94	60	0.02	30	0	82.36	1478.87	0.0007
16	UTTAR PD.	9	0	15.86	39	0.03	60	7	80.01	1619.8	0.0006
17	UTTARAKHAND	9	0	85.62	0	0	75	1	91.48	921.36	0.0011
18	WEST BENGAL	3	0	11.8	0	0	50	7	39.45	3371.29	0.0003

Notes: i. Calculation of inverse of stock limit may be referred in the Price Policy for Kharif Crops: KMS 2013-14 (Chapter-2) and calculation of other values viz, bonus, regulated market gap, inverse of road density etc. alongwith Methodology of Ranking of states based on State wise data reflecting market distortion in paddy/rice market in India may be referred in the Rabi Report 2014-15 (Chapter-2 & Annexure 2.3).

ii. \*Data regarding taxes/levies etc. are sourced from states and excluding mandi labour charges and milling charges.

Sources: DAC, FCI, DFPD, Deptt. Of Consumer Affairs, Directorate of Agricultural Marketing; Faridabad, MoRTH and State replies.

**Table - 2.3**  
**States/Centres with Prices of Kharif Crops below MSP**  
**During 2013-2014 Marketing Season**

(Rs per quintal)					
State	Centre	MSP	Oct	Nov	Dec
1	2	3	4	5	6
<b>Paddy</b>		<b>1310</b>			
Andhra Pd.	Suryapeta		1236		
	Nizamabad		1190		
Assam	Jorhat		1200	950	920
	Dibrugarh		1000	1100	1100
Chhattisgarh	Raipur		1259	1270	1300
	Bilaspur		1300	1300	
	Jagdalpur		1110	1050	1050
Haryana	Thanesar		1300		
Karnataka	Bellary		1290		1215
	Raichur		1266		1275
	Mysore			1295	
Madhya Pd.	Waraseoni		1250	1250	1250
Punjab	Amritsar		1100	1100	1050
Uttar Pd.	Attara		1080	1250	1250
	Pilibhit		1090		1080
	Shahjahanpur		1000	1285	1100
West Bengal	Contai				1250
	Indas			1300	
	Jhantipari			1275	1270
<b>Jowar</b>		<b>1500</b>			
Gujarat	Patan		1210		
	Ahmedabad			1175	1450
	Bhuj		1450		
Karnataka	Dharwad		1250	1175	1280
	Bellary		1245	1368	
	Haveri			1200	1100
Madhya Pd.	Khargaon		1165	1100	1189
	Bhopal			1430	1435
Maharashtra	Akola		1250	1300	1350
Rajasthan	Jaipur			1400	
	Nimbahera		1125	1125	
Uttar Pd.	Bahraich		1250	1270	1263
	Kanpur			1315	1450
	Varanasi				
<b>Maize</b>		<b>1310</b>			
Andhra Pd.	Hyderabad		1300	1280	1275
	Karimnagar		1207	1229	1178
	Nizamabad		1160	1213	1150
	Warangal		1200	1183	1154
Gujarat	Ahmedabad			1275	1275
	Dohad		1130		
Karnataka	Gokak		1300	1090	1110
	Davangere		1170	1150	1210
	Bijapur		1225	1150	1065
	Jamkandi		1200	1150	1100
Maharashtra	Jalgaon		1200		
Madhya Pd.	Mandla		1240		1270
Punjab	Patiala		1200	1200	1200
Uttar Pd.	Bulandshahar		1260		1300
	Kanpur			1275	
	Aligarh		1270	1260	1290
	Farukhabad		1265	1230	1280
<b>Ragi</b>		<b>1500</b>			
Karnataka	Arsikere				1485
Odisha	Ganjam		1400	1400	
	Berhampur		1400		

(Contd..)

**Table - 2.3 (Concluded)**  
**States/Centres with Prices of Kharif Crops below MSP**  
**During 2013-2014 Marketing Season**

(Rs per quintal)

State 1	Centre 2	MSP 3	Oct 4	Nov 5	Dec 6
<b>Bajra</b>		<b>1250</b>			
Gujarat	Patan		1212		
Haryana	Hissar		1125		1200
Karnataka	Bijapur		1075	1125	1100
	Raichur		1103	959	
	Bagalkot		1210	1108	1030
Rajasthan	Alwar		1145	1190	1215
	Jaipur		1100	1215	1225
	Tonk		1110	1122	1225
<b>Tur</b>		<b>4300</b>			
Andhra Pd.	Vijayawada			4100	4000
Bihar	Naugachhia		3750	3775	3700
Karnataka	Gulbarga		4163	3851	3680
	Raichur		2686	4075	
Madhya Pd.	Bhopal		3500	3570	3275
NCT of Delhi	Delhi		4075	4150	4160
	Najafgarh		3000	3472	3929
Maharashtra	Akola				4050
Tamil Nadu	Virudhunagar		4200		
Uttar Pd.	Agra				4020
	Hapur		3800	3650	3650
	Kanpur			4240	4150
West Bengal	Kolkata		4200		
<b>Moong</b>		<b>4500</b>			
Madhya Pd.	Bhopal		3990	3600	3700
<b>Urad</b>		<b>4300</b>			
Andhra Pd.	Suryapeta		2809	2899	
Assam	Howly				4150
Gujarat	Patan		2740	3030	3090
Karnataka	Gulbarga		3728	3966	3181
Madhya Pd.	Bhopal		3000	3000	3190
NCT of Delhi	Delhi		3950	3900	3915
Tamil Nadu	Virudhunagar		4200		
Uttar Pd.	Hapur		3450	3450	3525
West Bengal	Kolkata		4200		
<b>Sunflower Seed</b>		<b>3700</b>			
Andhra Pd.	Adoni		3092	3011	3200
	Hyderabad		3600	3500	3350
	Kurnool		3009	3039	3316
Karnataka	Gulbarga		2656	3055	3156
	Raichur		3425	3149	3193
Maharashtra	Latur		3350	3250	3400
Tamil Nadu	Virudhunagar		3500	3500	3600
<b>Groundnut</b>		<b>4000</b>			
Andhra Pd.	Hyderabad		3375	3375	3500
	Suryapeta		2729	2319	2500
Gujarat	Rajkot		3375	2980	3315
	Bhuj		3438		3750
	Jamnagar			3657	3446
Karnataka	Raichur		3422	3520	2506
	Davangere		3921	3670	2720
	Chitradurga		3460	3800	3850
Rajasthan	Jaipur				3800
Tamil Nadu	Coimbatore		3800	3800	
<b>Nigerseed</b>		<b>3500</b>			
<b>Jharkhand</b>	Ranchi		3300	3300	3350

Source : Directorate of Economics & Statistics  
Ministry of Agriculture

**Table - 4.1**  
**State-wise Gross and Net Returns on Actual Estimates of Cost of Cultivation of Kharif Crops (Average of 2009-10 to 2011-12)**

<b>PADDY</b>							
State	Cost A2+FL (Rs./ha.)	Cost C2 (Rs./ha.)	GVO (Rs./ha.)	Gross Returns over A2+FL (Rs./ha)	Rate of Gross Returns over A2+FL (%)	Net Returns over C2 (Rs./ha)	Net Rate of Returns over C2 (%)
Andhra Pradesh	36047	54578	61062	25014	69	6483	12
Assam	19241	25854	22493	3253	17	-3361	-13
Bihar	16792	22853	22587	5794	35	-266	-1
Chhatisgarh	16604	24829	28194	11590	70	3364	14
Gujarat	24896	34790	52983	28087	113	18192	52
Haryana	31013	52277	70237	39224	126	17960	34
Himachal Pradesh	12754	18911	28390	15635	123	9478	50
Jharkhand	15797	21045	15083	-714	-5	-5962	-28
Kerala	33547	45643	59817	26271	78	14175	31
Karnataka	33864	47388	58223	24359	72	10835	23
Madhya Pradesh	16105	25135	30996	14891	92	5862	23
Maharashtra	36053	45668	38733	2680	7	-6935	-15
Odisha	25849	31478	41651	15801	61	10172	32
Punjab	30358	51914	69566	39208	129	17651	34
Tamilnadu	39770	52453	56089	16319	41	3635	7
Uttar Pradesh	23588	34925	39835	16247	69	4911	14
Uttarakhand	23223	37018	40094	16871	73	3076	8
West Bengal	32978	43425	41138	8160	25	-2287	-5
<b>ALL-INDIA wt.ave</b>	26604	37733	42282	15679	59	4550	12
<b>MAIZE</b>							
Andhra Pradesh	28597	42944	48096	19499	68	5152	12
Bihar	17914	24207	44716	26802	150	20509	85
Chhatisgarh	7686	10346	9284	1598	21	-1062	-10
Gujarat	17514	21930	20250	2736	16	-1680	-8
Himachal Pradesh	12562	18113	17324	4763	38	-789	-4
Karnataka	19063	27666	34658	15595	82	6992	25
Madhya Pradesh	12717	17718	16720	4003	31	-998	-6
Rajasthan	20260	26018	24348	4088	20	-1670	-6
Tamilnadu	33039	45371	56980	23941	72	11609	26
Uttar Pradesh	16791	24808	20139	3348	20	-4670	-19
<b>ALL-INDIA wt.ave</b>	19186	26857	30141	10955	57	3284	12
<b>JOWAR</b>							
Andhra Pradesh	18805	26967	27950	9146	49	983	4
Karnataka	10882	15873	17477	6595	61	1604	10
Maharashtra	19106	27170	29935	10829	57	2765	10
Rajasthan	8794	11247	10555	1761	20	-692	-6
Tamilnadu	12238	16059	15768	3531	29	-291	-2
Madhya Pradesh	11466	15865	14374	2909	25	-1490	-9
<b>ALL-INDIA wt.ave</b>	16211	22996	24904	8693	54	1908	8

(Contd.)

**Table - 4.1 (Contd.)**  
**State-wise Gross and Net Returns on Actual Estimates**  
**of Cost of Cultivation of Kharif Crops (Average of 2009-10 to 2011-12)**

State	Cost A2+FL (Rs./ha.)	Cost C2 (Rs./ha.)	GVO (Rs./ha.)	Gross Returns over A2+FL (Rs./ha)	Rate of Gross Returns over A2+FL (%)	Net Returns over C2 (Rs./ha)	Net Rate of Returns over C2 (%)
<b>BAJRA</b>							
Gujarat	17892	24297	31974	14082	79	7676	32
Haryana	14997	22839	19040	4042	27	-3799	-17
Tamilnadu	16631	22396	21934	5303	32	-462	-2
Karnataka	9142	11732	9063	-79	-1	-2669	-23
Maharashtra	19623	26450	25213	5590	28	-1237	-5
Rajasthan	9846	13374	14296	4450	45	921	7
Uttar Pradesh	13791	20421	18959	5168	37	-1461	-7
<b>ALL-INDIA wt.ave</b>	<b>12394</b>	<b>17131</b>	<b>17699</b>	<b>5305</b>	<b>43</b>	<b>568</b>	<b>3</b>
<b>RAGI</b>							
Andhra Pradesh	29656	39788	32610	2954	10	-7177	-18
Karnataka	20882	28746	19729	-1153	-6	-9017	-31
Tamilnadu	22014	24686	27247	5233	24	2561	10
Maharashtra	23411	34217	23338	-73	0	-10879	-32
Uttarakhand	38804	45009	26611	-12193	-31	-18398	-41
<b>ALL-INDIA wt.ave</b>	<b>22274</b>	<b>30020</b>	<b>21566</b>	<b>-708</b>	<b>-3</b>	<b>-8454</b>	<b>-28</b>
<b>TUR</b>							
Andhra Pradesh	17760	29731	34900	17140	97	5169	17
Bihar	7250	15424	32246	24996	345	16822	109
Gujarat	17610	24786	37156	19545	111	12370	50
Karnataka	14515	22706	31849	17334	119	9142	40
Madhya Pradesh	11291	19753	27029	15738	139	7276	37
Maharashtra	30408	43801	54042	23634	78	10240	23
Odisha	8971	14542	18831	9860	110	4288	29
Tamilnadu	15154	20127	25706	10552	70	5579	28
Uttar Pradesh	12842	26227	31894	19051	148	5667	22
<b>ALL-INDIA wt.ave</b>	<b>19585</b>	<b>30327</b>	<b>38845</b>	<b>19260</b>	<b>98</b>	<b>8518</b>	<b>28</b>
<b>MOONG</b>							
Andhra Pradesh	8650	15361	21340	12690	147	5980	39
Karnataka	8508	11847	12669	4161	49	822	7
Maharashtra	17920	23248	22255	4335	24	-993	-4
Odisha	7916	12081	14167	6250	79	2086	17
Rajasthan	10317	13730	16240	5923	57	2510	18
Tamilnadu	12476	16465	18255	5779	46	1790	11
<b>ALL-INDIA wt.ave</b>	<b>11042</b>	<b>15326</b>	<b>17340</b>	<b>6298</b>	<b>57</b>	<b>2013</b>	<b>13</b>
<b>URAD</b>							
Andhra Pradesh	15774	26507	35980	20205	128	9473	36
Chhatisgarh	9252	13883	17150	7898	85	3267	24
Madhya Pradesh	11567	17550	22244	10677	92	4694	27
Maharashtra	17603	22904	20723	3120	18	-2181	-9.5
Odisha	8003	12466	15410	7407	93	2944	24
Rajasthan	11303	15477	18246	6942	61	2769	18
Tamilnadu	12196	17445	22056	9860	81	4611	26
Uttar Pradesh	9643	14388	14836	5193	54	448	3
<b>ALL-INDIA wt.ave</b>	<b>12620</b>	<b>18749</b>	<b>22089</b>	<b>9468</b>	<b>75</b>	<b>3340</b>	<b>18</b>

(Contd.)



**Table - 4.1 (Contd.)**  
**State-wise Gross and Net Returns on Actual Estimates of Cost of Cultivation of Kharif Crops (Average of 2009-10 to 2011-12)**

State	Cost A2+FL (Rs./ha.)	Cost C2 (Rs./ha.)	GVO (Rs./ha.)	Gross Returns over A2+FL (Rs./ha)	Rate of Gross Returns over A2+FL (%)	Net Returns over C2 (Rs./ha)	Net Rate of Returns over C2 (%)
<b>GROUNDNUT</b>							
Andhra Pradesh	33423	51318	53930	20507	61	2612	5
Gujarat	27157	35932	44829	17672	65	8897	25
Karnataka	19376	25999	25156	5780	30	-843	-3
Maharashtra	32397	43266	48858	16461	51	5592	13
Odisha	22916	34097	41243	18327	80	7146	21
Tamilnadu	31079	39759	39499	8420	27	-261	-0.7
<b>ALL-INDIA wt.ave</b>	<b>28412</b>	<b>39754</b>	<b>44073</b>	<b>15660</b>	<b>55</b>	<b>4319</b>	<b>11</b>
<b>SOYABEAN</b>							
Chhatisgarh	10691	16713	17570	6879	64	857	5
Madhya Pradesh	14073	22238	29092	15019	107	6854	31
Maharashtra	20830	27493	28474	7644	37	981	4
Rajasthan	12651	18616	23091	10440	83	4474	24
<b>ALL-INDIA wt.ave</b>	<b>16060</b>	<b>23545</b>	<b>28307</b>	<b>12247</b>	<b>76</b>	<b>4763</b>	<b>20</b>
<b>SUNFLOWER</b>							
Andhra Pradesh	19197	25521	26115	6918	36	594	2
Karnataka	10129	13440	12811	2682	26	-629	-5
Maharashtra	16514	22446	26788	10274	62	4342	19
<b>ALL-INDIA wt.ave</b>	<b>13557</b>	<b>18103</b>	<b>18651</b>	<b>5094</b>	<b>38</b>	<b>548</b>	<b>3</b>
<b>SESAMUM</b>							
Andhra Pradesh	11395	16804	17177	5782	51	373	2
Gujarat	14293	20197	24991	10698	75	4795	24
Madhya Pradesh	13354	20203	25021	11667	87	4818	24
Odisha	8523	12516	12682	4159	49	167	1
Rajasthan	7675	11505	15922	8248	107	4418	38
Tamilnadu	15506	23205	25932	10426	67	2727	12
West Bengal	16833	23310	24342	7509	45	1032	4
<b>ALL-INDIA wt.ave</b>	<b>11124</b>	<b>16245</b>	<b>20020</b>	<b>8896</b>	<b>80</b>	<b>3775</b>	<b>23</b>
<b>NIGERSEED</b>							
Odisha	7843	11152	10610	2767	35	-541	-5
<b>ALL-INDIA wt.ave</b>	<b>7843</b>	<b>11152</b>	<b>10610</b>	<b>2767</b>	<b>35</b>	<b>-541</b>	<b>-5</b>
<b>COTTON</b>							
Andhra Pradesh	31613	51318	60008	28396	90	8690	17
Gujarat	35193	51353	81223	46030	131	29870	58
Haryana	33348	52688	70182	36834	110	17493	33
Karnataka	22630	34445	49145	26515	117	14700	43
Madhya Pradesh	18994	34483	55737	36743	193	21254	62
Maharashtra	36837	50104	55322	18485	50	5217	10
Odisha	25447	37301	46561	21114	83	9260	25
Punjab	34205	59684	74916	40711	119	15232	26
Rajasthan	28019	44906	84802	56783	203	39896	89
Tamilnadu	42374	55342	61515	19141	45	6173	11
<b>ALL-INDIA wt.ave</b>	<b>33339</b>	<b>49439</b>	<b>65129</b>	<b>31790</b>	<b>95</b>	<b>15689</b>	<b>32</b>

Table - 4.2  
Month-wise Average Daily Wage Rates for Agricultural Labour (Man)

(Rupees)																
	A. P.	Assam	Bihar	Gujarat	Haryana	H. P.	Karna- taka	Kerala	M. P.	Maha- rashtra	Odisha	Punjab	Rajasthan	T. N.	U. P.	W. B.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Labour Bureau (Daily Wage Rates)																
January, 2011	171.15	117.46	101.07	92.19	196.93	195.22	116.44	334.76	85.68	124.18	125.88	172.49	139.58	175.37	115.37	122.45
February	171.26	118.36	99.78	93.67	201.61	206.78	118.42	334.76	86.89	127.40	132.63	165.15	141.13	180.82	118.11	125.85
March	174.29	123.28	101.36	93.40	201.94	206.78	119.09	341.13	89.25	131.12	127.52	168.57	148.92	183.94	115.67	126.06
April	173.70	122.48	100.95	94.33	203.06	217.44	120.22	341.13	89.08	131.32	133.01	170.24	163.06	185.84	116.08	125.53
May	170.79	122.44	101.89	95.06	202.98	211.39	124.99	341.13	89.59	134.93	134.85	211.35	179.20	177.58	116.98	128.77
June	174.12	122.63	103.22	96.20	202.95	218.33	126.57	350.22	89.90	139.62	132.64	188.77	171.87	199.02	119.25	129.93
July	173.87	127.21	107.86	111.84	205.36	219.22	127.62	359.95	94.20	155.95	132.98	215.13	207.55	199.57	123.03	133.11
August	171.33	127.90	110.16	111.87	205.50	231.67	132.62	372.33	97.84	155.04	134.07	211.42	190.91	207.55	121.88	139.39
September	176.03	115.45	112.83	113.48	205.75	232.22	136.36	375.84	97.88	151.86	137.24	188.57	154.33	205.94	122.51	140.94
October	176.55	127.45	112.82	113.30	205.46	230.40	136.67	391.65	98.96	153.35	135.05	219.14	162.22	208.53	125.97	141.60
November	190.57	131.04	119.19	113.30	214.29	232.22	137.72	453.74	98.61	154.71	138.34	222.81	203.06	212.64	129.79	143.33
December	176.03	127.04	112.83	113.48	205.75	232.22	135.76	375.84	97.88	151.86	137.08	188.57	154.33	205.94	122.51	140.94
January, 2012	176.55	127.45	112.82	113.30	205.46	236.74	136.66	391.65	98.96	153.35	135.05	219.14	162.22	208.73	125.97	141.60
February	202.74	131.27	123.76	114.99	211.76	240.56	145.43	419.56	100.29	153.34	139.90	235.42	171.87	231.27	136.24	151.41
March	194.67	132.19	126.25	115.86	213.01	240.56	146.57	412.89	105.61	155.66	140.46	233.24	197.96	226.33	135.02	151.75
April	206.72	132.23	126.85	117.12	209.97	240.56	146.32	417.33	109.85	156.01	144.75	256.36	194.16	230.87	136.06	159.38
May	197.71	134.12	128.69	118.44	210.38	241.43	147.73	417.33	108.45	154.18	148.45	243.35	201.89	232.34	138.23	161.18
June	184.60	134.26	133.95	118.44	214.71	246.11	156.42	419.56	112.60	164.96	136.59	223.04	203.74	237.82	137.97	159.83
July	190.66	137.86	138.41	125.21	219.48	270.08	162.92	453.22	116.34	171.15	139.82	246.34	222.61	244.17	146.09	168.72
August	193.09	137.58	142.71	125.52	228.61	246.11	167.98	453.22	118.78	170.45	152.29	241.22	213.30	252.75	149.14	167.43
September	205.01	140.22	144.02	125.80	229.31	246.11	169.99	454.89	120.57	172.50	143.50	240.37	213.59	252.36	152.82	164.92
October	198.55	145.43	146.81	126.22	237.84	246.11	173.17	461.29	119.46	173.81	134.70	278.22	215.86	250.58	156.24	165.46
November	209.65	147.74	147.89	126.24	233.39	251.11	178.39	461.29	119.51	173.05	136.89	273.83	217.11	246.07	158.14	170.51
December	224.43	144.62	150.74	126.75	227.57	260.32	177.23	461.29	120.37	181.56	138.11	272.50	221.45	247.21	159.65	172.92
January, 2013	224.26	146.42	161.97	129.99	245.55	272.62	183.94	464.62	125.98	186.26	136.32	257.00	218.59	253.30	162.62	178.46
February	227.65	156.95	164.48	129.99	245.40	259.44	188.46	464.62	125.96	192.02	133.65	260.00	204.32	259.05	164.78	180.34
March	221.04	153.73	166.36	133.29	245.40	259.44	189.41	461.29	129.92	194.17	136.46	260.00	207.64	264.83	165.99	181.05
April	229.93	153.47	166.82	130.44	247.27	263.89	191.98	478.49	135.17	195.08	136.90	283.75	216.93	264.88	168.32	182.33
May	222.85	150.01	167.22	130.93	244.86	266.25	192.39	489.16	137.83	197.24	141.25	272.78	243.76	265.94	169.44	184.85
June	222.49	161.60	168.20	132.37	244.08	262.08	195.90	483.38	133.58	188.88	142.89	289.67	235.19	271.17	173.03	185.29
July	220.65	178.20	174.73	136.24	258.41	263.29	203.31	485.38	132.06	201.20	150.42	290.71	220.31	272.10	173.80	197.76
August	210.11	182.83	176.74	136.95	316.60	283.89	209.85	486.98	133.33	200.22	156.81	279.00	214.75	274.73	180.69	199.55
September	212.88	177.53	175.73	138.19	312.05	289.72	211.94	490.15	137.61	196.04	149.82		219.08	284.48	180.58	200.43
October	211.95	174.84	175.32	138.80	311.78	297.50	212.64	487.42	143.97	199.04	155.72	282.50	228.83	293.65	179.78	199.43
% change of Oct., 2013 over Oct., 2012	6.75	20.22	19.42	9.96	31.09	20.88	22.79	5.67	20.52	14.51	15.61	1.54	6.01	17.19	15.07	20.54

Source: Labour Bureau, Ministry of Labour, Govt. Of India

Note: Daily Wage rate - average of five operations i.e. ploughing, Sowing, Weeding, Transplanting and harvesting has been considered.

**Table - 4.3**  
**Farm Inputs: Index Numbers of Wholesale Prices ( Base 2004-05=100)**

Month/Year	Fertilisers	Electricity (Irrigation)	Pesticides	Non-electrical Machinery	Tractors	Lubricants	High Speed Diesel (HSD)	Light Diesel Oil (LDO)	Fodder	Cattle Feed
1	2	3	4	5	6	7	8	9	10	11
<b>2011</b>										
January	117.8	128.1	112.9	121.0	128.0	194.2	153.6	217.1	193.9	181.3
February	120.3	128.1	113.1	122.9	128.3	194.2	153.6	218.6	198.5	181.4
March	120.7	128.1	113.9	123.2	128.9	194.2	153.6	228.3	205.8	180.5
April	122.9	128.1	114.1	123.6	131.4	214.0	153.6	246.3	200.6	183.8
May	125.2	128.1	113.9	123.1	134.8	220.8	153.6	256.8	176.8	181.2
June	125.7	128.1	113.8	123.5	134.8	220.8	157.1	240.2	179.5	180.0
July	127.0	128.1	114.5	123.5	136.0	221.8	167.8	232.6	182.7	184.9
August	127.9	128.1	114.6	123.5	136.4	231.2	167.8	240.4	188.2	186.3
September	130.4	133.8	114.8	123.8	137.2	236.6	167.8	241.4	189.8	186.4
October	134.9	135.7	114.6	124.2	137.5	236.6	167.8	245.8	191.2	186.4
November	137.6	135.7	114.6	125.9	137.8	236.6	167.8	243.1	196.9	186.2
December,2011	138.7	135.7	115.3	125.8	137.8	236.6	167.8	253.0	198.9	186.2
<b>2012</b>										
January	139.5	135.7	115.9	123.6	137.9	236.6	167.8	267.9	198.5	187.3
February	140.1	135.7	115.9	124.0	138.0	236.6	167.8	267.5	197.4	191.8
March	141.1	135.7	116.2	122.8	138.4	236.6	167.8	289.3	202.2	197.3
April	142.3	135.7	118.9	122.1	138.3	236.6	167.8	296.1	205.7	195.4
May	142.4	135.7	118.7	122.6	138.3	236.6	167.8	284.4	203.4	195.6
June	144.3	166.3	117.9	122.6	140.7	241.4	167.8	249.4	196.0	199.7
July	148.3	166.3	120.4	122.7	140.7	241.4	167.8	236.5	208.4	199.7
August	149.1	166.3	121.0	122.9	140.9	241.4	168.6	257.9	217.8	199.7
September	150.5	166.3	122.1	122.9	141.2	241.4	182.8	287.7	228.1	201.8
October	150.7	166.3	122.1	123.0	141.5	241.4	192.3	282.6	236.1	209.3
November	151.0	166.3	122.1	123.1	142.4	241.4	192.3	276.6	239.6	214.3
December,2012	152.1	166.3	122.3	123.0	143.7	253.3	192.3	278.4	237.5	225.2
<b>2013</b>										
January	152.6	166.3	123	123	143.7	253.3	198.8	283.3	241.9	225.2
February	152.5	166.3	122.9	123.5	143.7	253.3	202.7	286.3	246.2	231.1
March	152.3	166.3	122.5	123.1	143.7	253.3	201.7	289.6	250.4	232.2
April	152.4	184.8	122	123	143.7	253.3	202.3	271.5	246	233.8
May	151.5	184.8	123	122.9	143.7	253.3	203.4	253.7	244.2	233.3
June	150.5	184.8	123.5	122.9	143.7	253.3	207	268.7	257.1	234.1
July	151.5	184.8	123.6	123.1	143.7	253.3	212	286.3	265.3	238.2
August	152	203	124.5	123.8	143.8	253.3	215.4	299.2	267.6	237.7
September	152.4	206.9	125.7	123.9	144.3	263.9	219.8	330.9	270.1	238.8
October	152.2	209.1	127.3	123.9	144.1	263.9	220.5	312.3	269.8	239.3
November	152.7	209.1	128.1	124.1	144.5	263.9	222.4	314.7	272	239
<b>% change of Nov.,13 over Nov.,12</b>	<b>1.1</b>	<b>25.7</b>	<b>4.9</b>	<b>0.8</b>	<b>1.5</b>	<b>9.3</b>	<b>15.7</b>	<b>13.8</b>	<b>13.5</b>	<b>11.5</b>

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

**Table 4.4**  
**Statewise Projected Cost of Production (C2 & A2+FL) for Kharif 2014-15 and Their**  
**Shares in Production in Increasing Order of Cost**

(Rs./Qtl)

Paddy				Maize			
States	A2+FL	C2	Relative Shares in Production(%)	States	A2+FL	C2	Relative Shares in Production(%)
Punjab	624.26	971.98	10	Bihar	715.83	852.44	12
Gujarat	737.79	981.16	2	Andhra Pd.	760.58	1049.03	23
Himachal Pd.	749.86	981.69	1	Tamil Nadu	827.07	1056.41	8
Madhya Pd.	689.34	1028.91	3	Madhya Pd.	850.73	1117.71	9
Chhattisgarh	776.99	1062.86	7	Gujarat	902.95	1129.73	5
Uttarakhand	779.97	1105.32	1	Karnataka	918.27	1153.05	21
Karnataka	876.38	1132.61	3	Chhattisgarh	1004.04	1255.10	1
Assam	993.88	1219.98	5	Rajasthan	1239.77	1470.97	10
Bihar	989.61	1226.15	7	Uttar Pd.	1241.31	1623.23	7
Andhra Pd.	923.18	1242.73	11	Himachal Pd.	1328.64	1637.14	4
Uttar Pd.	986.28	1265.62	13	All India	913.51	1164.70	
Tamil Nadu	1040.65	1279.43	5	<b>Ragi</b>			
Kerala	1025.37	1293.71	1	Tamil Nadu	1401.35	1680.37	13
Orissa	1032.97	1304.56	7	Karnataka	1456.46	1790.03	75
Haryana	868.41	1372.56	4	Andhra Pd.	2021.32	2487.04	3
West Bengal	1163.95	1402.09	14	Maharashtra	2155.85	2504.71	9
Jharkhand	1475.32	1797.28	3	All India	1474.42	1793.87	
Maharashtra	1876.69	2164.60	3				
All India	978.18	1266.28					
<b>Jowar</b>				<b>Bajra</b>			
Madhya Pd.	864.74	1134.83	11	Uttar Pd.	640.51	925.36	20
Maharashtra	1259.37	1650.38	46	Haryana	699.76	1043.29	11
Andhra Pd.	1176.23	1745.99	9	Rajasthan	861.06	1066.74	48
Karnataka	1594.13	2099.53	29	Gujarat	876.81	1087.97	10
Tamil Nadu	2641.60	2846.69	5	Maharashtra	1050.01	1326.12	8
All India	1370.09	1788.20		Karnataka	1285.94	1535.51	3
				All India	831.64	1075.16	
<b>Tur</b>				<b>Urad</b>			
Madhya Pd.	2250.59	3329.35	15	Madhya Pd.	1855.35	2684.92	20
Gujarat	2686.92	3450.48	10	Chhattisgarh	2053.29	2871.61	2
Karnataka	2856.45	3852.01	15	Andhra Pd.	1816.76	3098.27	21
Andhra Pd.	3023.16	4406.61	8	Orissa	2770.37	3890.47	2
Uttar Pd.	2830.03	4585.29	13	Rajasthan	3370.46	4352.50	8
Orissa	3367.36	4658.75	5	Tamil Nadu	4045.67	5060.17	9
Maharashtra	3778.69	4720.34	34	Uttar Pd.	3994.14	5226.25	24
All India	3104.62	4214.45		Maharashtra	5624.28	6700.71	14
				All India	3225.04	4316.98	

(contd..)

**Table 4.4 (Concluded)**  
**Statewise Projected Cost of Production (C2 & A2+FL) for Kharif 2014-15 and**  
**Their Shares in Production in Increasing Order of Cost**

(Rs./Qtl)

<b>Moong</b>				<b>Seasmum</b>			
<b>States</b>	<b>A2+FL</b>	<b>C2</b>	<b>Relative Shares in Production (%)</b>	<b>States</b>	<b>A2+FL</b>	<b>C2</b>	<b>Relative Shares in Production (%)</b>
Andhra Pd.	2769.21	4173.76	17	Rajasthan	2947.71	4346.01	34
Karnataka	3396.08	4499.33	7	West Bengal	3742.14	4489.51	43
Orissa	3541.50	4824.68	8	Orissa	3511.72	4802.26	1
Maharashtra	4267.58	5170.45	25	Tamil Nadu	4670.61	5583.96	5
Rajasthan	4260.92	5273.96	43	Gujarat	5225.83	6335.03	17
All India	3889.84	4970.77		All India	3765.26	4812.25	
<b>Soyabean</b>				<b>Sunflower</b>			
Madhya Pd.	1234.35	1786.72	52	Maharashtra	2403.55	3009.01	8
Rajasthan	1977.34	2530.52	11	Andhra Pd.	2871.57	3732.15	27
Maharashtra	2368.64	2769.39	37	Karnataka	3329.76	4027.05	65
All India	1728.95	2225.84		All India	3129.07	3862.61	
<b>Groundnut</b>				<b>Cotton</b>			
Orissa	2559.88	3102.08	1	Madhya Pd.	1420.05	2324.47	6
Gujarat	2886.42	3341.73	31	Rajasthan	1641.72	2421.91	4
Maharashtra	2814.10	3473.11	4	Karnataka	2374.50	3314.11	4
Andhra Pd.	2738.50	3757.40	13	Haryana	2282.06	3315.25	8
Tamil Nadu	3563.82	4192.87	45	Gujarat	2616.11	3452.65	30
Karnataka	3958.89	4923.84	6	Punjab	2188.25	3468.93	6
All India	3231.87	3880.25		Andhra Pd.	2312.78	3537.44	18
				Orissa	2920.55	3785.31	1
				Maharashtra	3057.18	3962.03	22
				Tamil Nadu	3355.79	4103.17	1
				All India	2509.84	3479.84	

Note: All India here represents a weighted average of the selected states given under each crop.

Table 5.1  
Drivers of Yield- Kharif Crops

Crop	Elasticities					
	Gross Returns in preceding year at constant prices (2011-12=100)	Fertilizer (Quantity)	Seed (Quantity)	% Area Irrigated	Monsoon Rainfall	Manure
Paddy	0.11 *	0.23 *		0.19 *		0.1 *
Maize	0.09 *	0.69 *				
Bajra	0.2 *				0.25 *	
Jowar		0.38 *			0.17 *	0.11 *
Ragi	0.02 *					
Tur	0.18 *					
Moong	0.1 *	0.18 *				
Urad	0.2 *	0.09 *	0.32 *			
Groundnut	0.1 *	0.33 *				0.18 *
Sesamum		0.11 *		0.27 *		0.06 **
Soyabean		0.23 *		0.07 *		0.13 *
Sunflower			0.52 *			
Cotton	0.15 *	0.43 *		0.18 *		
Note:						

Asterik (\*) and (\*\*) denote that elasticity is statistically significant at 95% and 90% level of confidence respectively. Blank cells either indicate that the corresponding variable was not found appropriate to explain variability in yield levels. Nigerseed is not included due to non-availability of requisite data on various parameters.



Table - 6.1  
MSP Suggested by State Governments for the Kharif Crops of 2014-2015

State	Paddy (Common)	Paddy (Fine)	Paddy (Gr-A)/ (Basmati)	Jowar (Hybrid)	Bajra	Maize	Ragi	Moong	Urad	Tur	Groundnut- in-shell	Sesa- mum	Soya- bean (Yellow)	Soya- bean (Black)	Sunflower- seed	Niger- seed	(Rs./Qtl.)			
																	Cotton	Cotton (Long Staple)	Cotton (Medium Staple)	Cotton (American)
Assam	1415		1450					5130	4975	5000		5120								
Chhattisgarh	2100		2150			1400		6000	5200	6500	5000	6000	3200	3100	4600	5000				
Gujarat				1800	1600	1500		5000	5000	5000	5000	6000					5000	4800		
Haryana	2000	2025	2100		1500	1900														4500
Himachal Pd.	1310			1500	1250	1310	1500	4500	4300	4300	4000	4500	3700			3500	4000	3700		
Jharkhand	1578					1566			5259	4563										
Karnataka	1800			2900	2150	1650	2000	5800	5550	5950	5950			4550	4850			5450		
Kerala	2000		2050																	
Madhya Pd.	2050		2550	1900		2000				5700	4250	4900	3200			4500				
Odisha	1700					1430		5200	5100	3950	4200	4900				3700	5000	4500		
Punjab	1800		1890			1815		6100	5900	5800	5200						5300			
Rajasthan					1500	1550		4700	4500			4700	2800					4200		
Uttar Pd.	1875		2110	1705	1585	1525		4910	4710	4705	4135		3045							

Source : State Replies