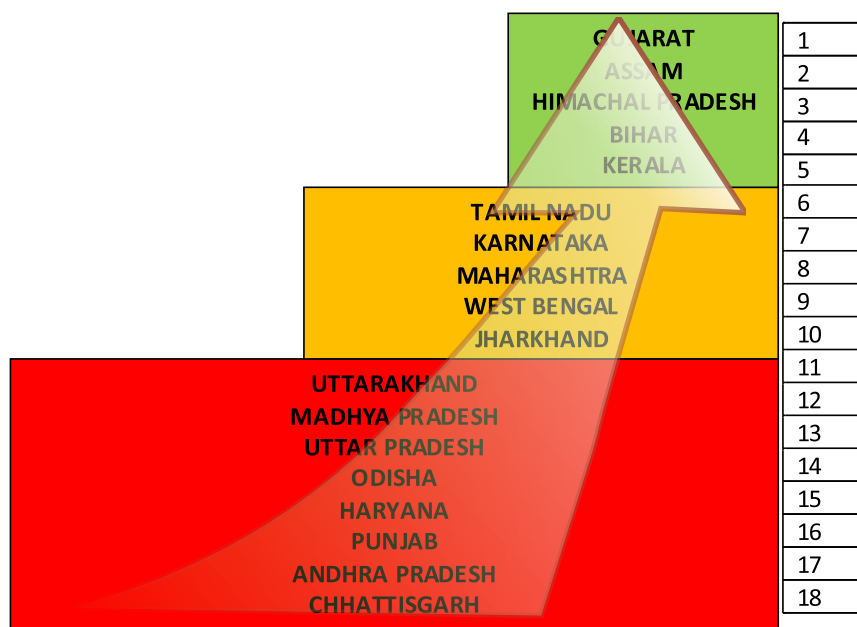


# Price Policy for Kharif Crops

THE MARKETING SEASON 2013-14

Getting the Paddy/Rice Markets Right

Ranking of States by  
'Market Friendliness'



सत्यमेव जयते

COMMISSION FOR AGRICULTURAL COSTS AND PRICES

Department of Agriculture & Cooperation

Ministry of Agriculture

Government of India

New Delhi

March 2013

# **Price** **Policy** *for* **Kharif Crops** **THE MARKETING SEASON 2013-14**



सत्यमेव जयते

**COMMISSION FOR AGRICULTURAL COSTS AND PRICES**

**Department of Agriculture & Cooperation**

**Ministry of Agriculture**

**Government of India**

**New Delhi**

**March 2013**





# CONTENTS

S. No.	Description	Page
	Acronyms	i-ii
	List of Tables	iii
	List of Charts	iv-v
	List of Annex Tables	vi
	Summary of Recommendations	viii-xii
1.	Overview	1-9
2.	Demand-Supply, Procurement, Prices and Market Distortions	10-26
3.	India's Trade Competitiveness	27-38
4.	Costs, Returns and Inter Crop Price Parity	39-50
5.	Productivity: Different Dimensions	51-62
6.	Recommendations for Price Policy	63-68
	Annex Tables	69-95





## List of Acronyms

A2+FL	Actual paid out cost plus imputed value of family labour
APMC	Agricultural Produce Market Committee
BGREI	Bringing Green Revolution to Eastern India
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
CCTs	Conditional Cash Transfers
CCI	Cotton Corporation of India
CIF	Cost, Insurance & Freight
CF	Correction factor
CoP	Cost of Production
CS	Comprehensive Scheme
CSO	Central Statistics Office
CV	Coefficient of Variation
CWC	Central Warehousing Corporation
DAC	Department of Agriculture & Cooperation
DCT	Direct Cash Transfer
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
ECA	Essential Commodities Act
F&V	Fruits & Vegetables
FAI	Fertilizer Association of India
FAO	Food and Agriculture Organization
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
GVO	Gross Value of Output
ICAC	International Cotton Advisory Committee
IPGA	India Pulses & Grains Association
KMS	Kharif Marketing Season
LPA	Long Period Average
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
NAFED	National Agricultural Cooperative Marketing Federation of India Limited
NBS	Nutrient Based Subsidy
NCAER	National Council of Applied Economic Research
NCCF	National Cooperative Consumers' Federation of India Limited
NFSB	National Food Security Bill
NFSM	National Food Security Mission
NSC	National Seeds Corporation
OEA	Office of Economic Adviser
OGL	Open General License
PDS	Public Distribution System
PPP	Public-Private-Partnership
PSS	Price Support Scheme
Qtl	Quintal
R & M	Rapeseed and Mustard
RMS	Rabi Marketing Season
SEAI	Solvent Extractors' Association of India
SEWA	Self Employed Women's Association
SOPA	Soybean Processors Association of India
SPV	Special Purpose Vehicle
STC	State Trading Corporation
TE	Triennium Ending
TFP	Total Factor Productivity
TRQ	Tariff Rate Quota
UNDP	United Nations Development Programme
USDA	United States Department of Agriculture
VAT	Value added Tax
VGF	Viability Gap Funding
VVOF	Directorate of Vanaspati, Vegetable Oils and Fats
WPI	Wholesale Price Index
WTO	World Trade Organization





## List of Tables

Table No.	Topic	Page No.
Table S.1	Actual and Recommended MSPs of Kharif crops	xii
Table 2.1	Stock- to- Use Ratios of Kharif Crops	11
Table 2.2	Major States Imposing Taxes/Levies (as % of MSP) (KMS 2013-14)	20
Table 2.3	Time line of EC Act 1955 (Amendment Orders) 2002-2012	22
Table 2.4	Ranking of major states according to the distortions created in paddy/rice market	25
Table 4.1	All India Gross and Net Returns on actual estimates of cost of Cultivation of Kharif Crops for the years from 2008-09 to 2010-11	40
Table 4.2	All India Projected Cost of Production (A2+FL & C2) of Kharif Crops for 2013-14 Marketing Season	44
Table 4.3	Relative returns (%) of Kharif crops over A2+FL and C2 (2008-09 to 2010-11)	50
Table 5.1	Growth Rates of Kharif Crops at All India Level during 1980s, 1990 and 2000s	52
Table 5.2	Water Productivity for Production of one kg of Rice in key Paddy Producing States	54
Table 5.3	Impact of Variation in Yield on CoP (%)	55
Table 5.4	Benchmarking of Important Crops, TE 2011-12	58-59
Table 5.5	Drivers of Yield- Kharif Crops	60
Table 5.6	Gap in Irrigation Potential Created and Outlays Required to Attain Full Potential	61
Table 5.7	Public and Private Investment in Agriculture R & D, 2012-13	62
Table 6.1	Recommended MSPs of Kharif Crops (KMS 2013-14) and their Justification	67



## List of Charts

Figure No.	Topic	Page No.
Chart 1.1	Comparative growth in GDP (overall) and GDP (agri) during Plan periods	2
Chart 1.2	India's Exports and Imports of Agri- Commodities	3
Chart 1.3	Central Pool Stocks with FCI	4
Chart 1.4	Contribution of various items to Inflation in Primary Food Articles	5
Chart 1.5	Price Inflation in Rice & Wheat, 2011-12 & 2012-13	5
Chart 1.6	Composition of Public Expenditure on Agriculture	7
Chart 2.1	Rice Procurement as % of Production & Market Surplus	12
Chart 2.2	Rice Procurement as a % of Marketed Surplus, TE 2011-12	13
Chart 2.3	Rice Production & Procurement as a share of production in Chhattisgarh	14
Chart 2.4	Economic Cost of Rice Procurement to FCI	15
Chart 2.5 (a) – (h)	Wholesale price trends of Major Kharif Crops	16-17
Chart 2.6	Levy rates for Rice for KMS 2012-13	21
Chart 3.1	Composition of India's Agri-Exports & Agri-Imports, TE 2011-12	28
Chart 3.2	India's Exports of Rice from 2001-02 to 2011-2012	29
Chart 3.3	International vs Domestic Prices of Rice	29



Chart 3.4	India's Exports of Maize from 2001-02 to 2011-12	30
Chart 3.5	International vs Domestic Prices of maize	30
Chart 3.6	International vs Domestic Prices of Jowar	31
Chart 3.7	India's Exports and Imports of Pulses (Volume)	32
Chart 3.8	International vs Domestic Prices of Arhar	32
Chart 3.9	International vs Domestic Prices of Urad	32
Chart 3.10	International prices vs Domestic prices of Moong	33
Chart 3.11	International vs Domestic prices of Soyabean and Soyabean Oil	35
Chart 3.12	India's exports of soyabean meal from 2001-02 to 2011-12	35
Chart 3.13	International vs Domestic Prices of soyabean meal	35
Chart 3.14	International vs Domestic Prices of Groundnut and Groundnut Oil	36
Chart 3.15	International vs Domestic Prices of Sunflower Seed and Sunflower Oil	36
Chart 3.16	India's Exports of Cotton from 2001-02 to 2011-12	37
Chart 3.17	International vs Domestic Prices of cotton (Lint)	37
Chart 4.1	Average Annual growth rate of agriculture labour wage rate (Rs/day) by states and at All-India level in Nominal terms (Jan-Dec 2009 to Jan-Dec 2012)	41
Chart 4.2	WPI and Percentage Increase in Prices of Farm Inputs (Dec 2012 over Dec 2011)	42
Chart 4.3	Relative Prices of Urea, DAP & MOP	43
Chart 4.4 (a to m)	Projected Cost and Supply of Kharif Crops by States for 2013-14	45-49
Chart 5.1 (i) to (xiv)	Relationship Between Cost of Production and Yield levels of kharif Crops, Based on panel data of various States for 2000-01 to 2010-11	56-57
Box 2.1	Chhattisgarh: State policy triggering distortions in rice market	14

**Rising India's agri-exports**

## List of Annex Tables

Table No.	Title	Page No.
Table No. 2.1	All India Estimates of Area, Production and Yield of All Crops	71-73
Table No. 2.2	Availability of Kharif Crops	74-76
Table No. 2.3	Methodology of Ranking of States by the Nature and Degree of Distortions in Paddy/Rice Market	77-79
Table No. 2.4	States/Centres where prices of kharif crops dipped below MSP during 2011-12 marketing season	80-83
Table No. 4.1	State-wise Gross and Net returns on actual estimates of cost of cultivation of Kharif crops (Average of 2008-09 to 2010-11)	84-87
Table No. 4.2	Month-wise average daily wage rates for Agricultural Labour (Man)	88-89
Table No. 4.3	Farm Inputs: Index Numbers of Wholesale Prices	90
Table No. 4.4	State-wise Projected Cost of Production (C2 & A2+FL) for Kharif 2013-14 and their shares in Production in increasing order of Cost	91-92
Table No. 4.5	Index of Terms of Trade Between Agriculture and Non-Agriculture Sectors	93
Table No. 6.1	MSP Recommended by State Governments for the Kharif Crops of 2012-13	94





## Summary of Recommendations

S.1 In the last report on price policy for kharif crops, 2012-13 season, the Commission had recommended a major re-alignment of MSPs of various crops with a view to 'get the prices right'. The Government accepted all those recommendations taking a major step in that direction. This report for kharif crops of 2013-14 season recommends only marginal changes in MSPs, but major changes in the functioning of markets to 'get the markets right'. This will set the basis for efficient functioning of agri-markets, remunerative prices for farmers and taking Indian agriculture forward to at least a 4 percent growth trajectory. The non-price policy recommendations to 'get the markets right' as well as with respect to the NFSB, will also serve the poor consumers much better than has been the case so far.

### Non-price Policy Recommendations

#### Paradox of overflowing granaries and rising food prices

S.2 The major challenge faced by the Indian food sector today is to manage the 'problem of plenty of rice/wheat stocks' prudently. The credit of abundance of grains goes to the Indian farmer but if this surplus is not managed judiciously, it inflicts huge economic losses on the food economy. The current situation of overflowing granaries (80.5 million tonnes of grain stocks on 1<sup>st</sup> July, 2012 and likely to cross 90 million tonnes in July 2013) co-existing with a sharp rise in prices of rice & wheat (in January 2013, wheat and rice prices were higher by 21 percent and 17 percent respectively over January, 2012) speaks about gross sub-optimal management of food economy.

S.3 Another anomaly is that paddy farmers in the entire eastern belt are selling much of their paddy at 10 to 20 percent below the MSP, while FCI is accepting procured

paddy/rice from states (like Punjab, Haryana, Andhra Pradesh, Chhattisgarh, etc) at 10 to 15 percent above MSP due to high taxes and other statutory levies imposed by these states. Some states, notably Chhattisgarh, is also giving a bonus of Rs 270/ql on paddy, which works out to more than 20 percent of current MSP. As a result, not only private trade is crowded out, but also rakes of paddy from these regions (especially eastern Uttar Pradesh, Bihar, Odisha, etc) are sent to Punjab/Haryana/Chhattisgarh, and after milling, in many cases, the same paddy comes back as rice through the Public Distribution System (PDS) at huge costs. These two illustrations are indicative of existence of gross distortions in paddy/rice markets, calling for urgent reform with a view to 'get the markets right'. Accordingly, the Commission makes the following non-price policy recommendations:

### **Liquidation of Stocks**

S.4 At least 15 million tonnes of stocks need to be urgently liquidated and the sales need to be at the last year's MSP plus a maximum of 5 percent towards taxes/cesses etc. At these rates wheat price will be Rs 1350/ql and rice price will be Rs 1900/ql, say ex-Punjab. Further, by permitting private sector to lift from government godowns to sell in the domestic market or export, the government will make huge savings in terms of reduced cost of carrying these stocks, for even up to three years. The Centre also needs to review its open ended procurement policy and take a policy decision to not accept more than say, 75 percent of last year's procurement from states that impose taxes and levies beyond 5% of MSP, or give special bonus on top of MSP. This is a necessary step to bring about rationality in pricing, contain the food subsidy bill and 'getting the markets right'. Else, the Commission fears that a major crisis in food management will unfold, leading to large economic losses that the country can ill afford.

### **Resolving the Imbalance between Subsidies & Investments in Agriculture**

S.5 It is commendable to see that the public expenditure on agriculture as a percentage of agri-GDP has almost doubled between 2000-01 and 2011-12. But almost 80 percent of this is going as input subsidies and only 20 percent as investments in agriculture. As input subsidies have much lower marginal rates of return than investments, the Commission recommends that at least fertilizer subsidy, which has increased by more than 5 times during the last 10 years, must be restructured and rationalized. This calls for direct transfer of fertilizer subsidy to farmers on per hectare basis, and decontrolling the fertilizer sector with free imports. This will go a long way to correct the unbalanced use of N, P and K, as also encourage investments in fertilizer industry, which have remained dormant for more than a decade.

### **Stable and Open Agri-Trade Policy**

S.6 Agri-trade continues to be strictly regulated and any adverse price movement makes the Government adopt knee-jerk trade, tariff and administrative means to restrain prices. Despite this, Indian agriculture sector has been a net exporter earning a large trade surplus. In 2011-12 alone, agri-exports were to the tune of US\$ 37 billion vis-a-vis an import of only US\$ 17 billion, earning a net surplus of \$20 billion. In 2012-13, the performance of agriculture on this account is expected to be even better than

this, with exports likely to cross US\$ 40 billion. Therefore, time has come to institute an open, stable, neutral and rational agri-trade policy with moderate duties of 5-10 percent in most of the years. From this angle, the Commission recommends fully opening up the exports, even for pulses and oilseeds/edible oils, as their imports are already open at zero or low import duties to make the trade policy neutral to producers and consumers. This will promote resource use efficiency, generate surpluses and promote agri-growth.

### **Integrating MGNREGA with Agriculture**

S.7 Labour costs have risen rapidly, by almost 20 percent per annum, during the last 3 years, which has pushed the costs of production in agriculture. Farmers also complain about serious shortage of labour during peak seasons largely perceived due to MGNREGA. To make sure that MGNREGA operations are in line with labour productivity, and to contain the rising costs of production in agriculture, there is need to do an innovative fusion between MGNREGA and agricultural operations, wherein say half is paid by the farmer and the other half by the scheme. This would help agriculture labour to earn more and also help the farmer save on labour costs, and keep the labour productive. It can be coordinated through *panchayats*.

### **Push towards Pulses and Oilseeds**

S.8 An imbalance is emerging in the production basket of agricultural crops with a large surplus of cereals and a large deficit of pulses & oilseeds (edible oils). A prime reason for this is that the incentive environment is biased in favour of rice and wheat, which get not only marketing support through large procurement operations, but also through large subsidies on power, fertilizers and irrigation. The Commission recommends that this incentive environment should be made crop neutral and less irrigated (rainfed) crops, e.g., coarse cereals, oilseeds, and pulses be given additional incentives either through attractive prices and supportive marketing/procurement infrastructure, or through viability gap funding (VGF) on per hectare basis, which could be equal to the savings in subsidies say on power, water, and fertilizers on rice (and wheat), keeping in mind the import competitiveness of coarse cereals, oilseeds and pulses.

S.9 Developing oil palm on a million hectares that is identified as suitable for its cultivation is the main answer to bridging the gap between demand and supply of edible oils. The Commission has already submitted a separate report in January 2012, wherein it is analyzed and recommended that investing Rs 10,080 crore over the next six years can save the government an import bill of more than Rs 600,000 crore over the next 27 years. The Commission therefore recommends that oil palm development in the country should be taken up on a high priority, as it will benefit large numbers of farmers and consumers alike, and also save on the import bill.

S.10 The Commission recommends de-reservation for groundnut processing units (also mustard) from the small scale sector, along with emphasis on their technology up-gradation and modernization to make them cost effective. This will promote value addition and add to the domestic edible oil supply.



S.11 There is a need to impose an import tariff of 10 percent on oilseeds and pulses to promote their production at home. The extant duty structure on oilseeds, raw and refined oils needs a review and revised as per economic rationality; say at 10, 12.5 and 15 percent respectively on oil seeds, crude edible oils and refined edible oils.

### **Removing domestic market distortions**

S.12 It is time for some of the restrictive laws dealing with agriculture (e.g., Essential Commodities Act (ECA), 1955; APMC Act, tenancy laws, etc) to be reviewed and made much more liberal to let the markets function openly and competitively. There is need to phase out all levies on rice procurement, stocking limits on private trade, allow seamless movement of agri-commodities all over the country, direct buying by processors and retailers from farmers, freeing up the land lease market to let an economically viable size of the operational holdings emerge. It is vital that these archaic laws are modified/rescinded to facilitate the development of a barrier-free national market.

### **Making NFSB More Effective**

S.13 The National Food Security Bill (NFSB) envisages subsidized physical grain distribution to almost two-thirds of the country's population of 1.2 billion. It implies a massive procurement of food grains and entails huge financial expenditure given the existing inefficient food security complex of procurement, stocking and distribution (leakages amount to about 40 percent as per the Commission's calculations). It would crowd out private sector operations further with an adverse effect on overall efficiency of procurement and storage operations as well as on magnitude of food subsidies and open market prices. Literature, international experience and pilot studies in India itself have shown that cash transfers are more efficient and cost effective in promoting food and nutritional security. Thus, NFSB could be integrated with the 'Direct Cash Transfer' (DCT) scheme especially in 33 cities of more than one million population and cereal surplus states. This approach, i.e., using the right policy instrument (income policy rather than price policy) and right technology (IT) to reach the poor, will not only empower the poor but also allow the foodgrain markets to function effectively with an active private sector, allow natural process of diversification/growth in agriculture and plug leakages in distribution.

### **Price Policy Recommendations**

S.14 After carefully considering the overall demand and supply situation of various crops, especially the excessive stocks of rice and wheat with government agencies, their costs of production, their domestic and international price situation along with export/import possibilities, the overall terms of trade between agriculture and industry, and the issue of food inflation in the country, 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 2013-14	Justification	KMS 2012-13	KMS 2011-12	KMS 2010-11
Paddy	1310 (4.8)	Excessive stocks of rice (and wheat). MSP is touching fob price. Eastern belt needs a special package to improve marketing network as market prices are 10-20% below MSP. Recommended MSP fully covers C2 costs.	1250 (15.7)	1080 (8.0)	1000 (0.0)
Paddy Grade A	1345 (5.1)		1280 (15.3)	1110 (7.8)	1030 (0.0)
Jowar-Hybrid	1500 (0.0)	Last year, MSP was increased by 53%.	1500 (53.1)	980 (11.4)	880 (4.8)
Jowar-Maldandi	1520 (0.0)		1520 (52.0)	1000 (11.1)	900 (4.7)
Bajra	1175 (0.0)	Last year, MSP was increased by 20%. MSP already covers C2 costs.	1175 (19.9)	980 (11.4)	880 (4.8)
Ragi	1500 (0.0)	Last year, MSP was increased by 43%	1500 (42.9)	1050 (8.8)	965 (5.5)
Maize	1310 (11.5)	Low Stock to use ratio; MSP below domestic & international prices. Would encourage diversification in erstwhile states of Green Revolution from paddy to maize	1175 (19.9)	980 (11.4)	880 (4.8)
Tur (Arhar)	3850 (0.0)	MSP higher than domestic & international prices	3850 (4.1)	3700* (5.7)	3500* (52.2)
Moong	4500 (2.3)	Expected Low Stocks	4400 (10.0)	4000* (9.0)	3670* (33.0)
Urad	4300 (0.0)	MSP higher than domestic & international prices	4300 (13.2)	3800* (11.8)	3400* (34.9)
Groundnut	4000 (8.1)	To encourage oilseeds. MSP way below domestic & international prices	3700 (37.0)	2700 (17.4)	2300 (9.5)
Sunflower	3700 (0.0)	MSP higher than domestic & international prices	3700 (32.1)	2800 (19.1)	2350 (6.1)
Soyabean (Black)	2500 (13.6)	To encourage oil and protein. MSP below domestic & international prices	2200 (33.3)	1650 (17.9)	1400 (3.7)
Soyabean (Yellow)	2560 (14.3)		2240 (32.5)	1690 (17.4)	1440 (3.6)
Sesamum	4500 (7.1)	To encourage oilseeds. MSP below domestic & international prices	4200 (23.5)	3400 (17.2)	2900 (1.8)
Nigerseed	3500 (0.0)	MSP higher than current domestic prices	3500 (20.7)	2900 (18.4)	2450 (1.9)
Cotton (Medium-Staple)	3700 (2.8)	In alignment with prevailing international prices	3600 (28.6)	2800 (12.0)	2500 (0.0)
Cotton (Long-Staple)	4000 (2.6)		3900 (18.2)	3300 (10.0)	3000 (0.0)

\*includes bonus of Rs 500

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





# Chapter-1

## An Overview

### Performance by the Agricultural Sector: Production & Trade

1.1 The year 2011-12 witnessed a remarkable performance by Indian agricultural sector with a record production of 259.3 million tonnes of food grains (5.9 percent increase compared to 2010-11). By virtue of this vibrant growth in the terminal year of the Eleventh Plan (2007-2012), the agricultural sector grew at an annual average rate of 3.6 percent as compared to earlier estimated 3.3 percent<sup>1</sup> and 2.4 percent in the tenth plan (2002- 2007) and 2.5 percent in the ninth plan (1997-2002) (Chart 1.1). This is closer to the 4.0 percent growth targeted for the Plan. The credit for this performance may be attributed to benevolent weather conditions, effective Government interventions like National Food Security Mission (NFSM), Second Green Revolution in Eastern India (BGREI) etc, push given to agri-investment and the Minimum Support Price (MSP) Policy. A slowdown in agricultural growth is expected in 2012-13 largely due to a deficient monsoon which was lower by 7.6 percent as compared to the long-period average (LPA). It is expected that foodgrain production would fall by 3.5 percent to 250.1 million tonnes in 2012-13<sup>2</sup>. Rice and wheat production is expected to fall by 3.3 percent and 2.7 percent respectively from record outputs last year. However, the fall is steeper for coarse cereals as a whole at 8.5

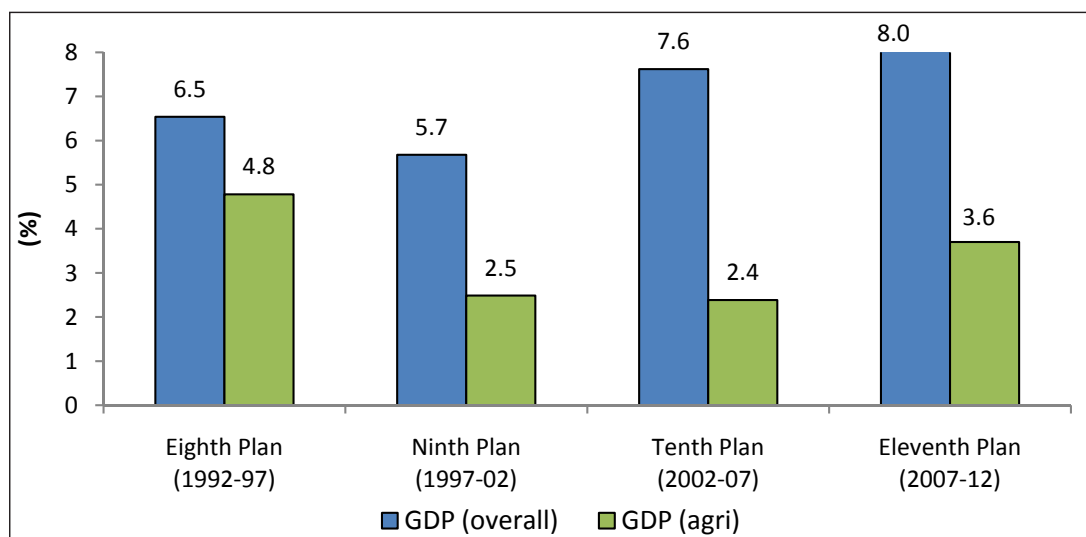
*Agriculture grew at an annual average rate of 3.6 percent during the Eleventh Five Year Plan*

<sup>1</sup>Twelfth Plan Document, Panning Commission

<sup>2</sup> Second Advance Estimates of Production of Foodgrains, 2012-13, DAC

percent. There has been an increase of 2.9 percent in total pulses production in 2012-13 at 17.6 million tonnes as compared to last year. The production of total nine oilseeds in 2012-13 is marginally lower than last year by 1.1 percent at 29.5 million tonnes. Cotton has registered a fall of 4.0 percent in 2012-13 as compared to last year. The agricultural sector as a whole is expected to grow at 1.8 percent in 2012-13 as compared to 3.6 percent last year<sup>3</sup>.

**Chart 1.1: Comparative growth in GDP (overall) and GDP (agri) during Plan periods**



Source: Central Statistics Office (CSO)

- 1.2 During 2011-12, India emerged as the world's largest exporter of rice, replacing Thailand and Vietnam and also the biggest exporter of buffalo meat beating traditionally strong countries such as Brazil, Australia and the US. Agri-exports by India during the FY 2011-12 were more than US\$ 37 billion against an import of agri-commodities worth around US\$ 17 billion with the agricultural sector emerging as a large trade surplus sector (Chart 1.2). As per WTO, India's share in total global exports of agri products has increased from 0.8 percent in 1990 to 2.1 percent in 2011. This share is more than the share that India has in global merchandise exports, i.e., 1.7 percent in 2011 (0.6 percent in 1990). This is indicative of the inherent comparative advantage in agri-products. An analysis<sup>4</sup> of the composition of agricultural trade over the last decade shows that traditional agri-exports of India, such as tea, coffee, cashew, spices, etc have been over taken by new and more dynamic sectors like rice and maize, cotton, meat, guar gum, and the like, with the biggest change being registered in cotton. However, India's agri-trade policy has been relatively restrictive and unstable with frequent export bans and irrational import duties. To enable the sector to realize its full potential, an open, stable, neutral and rational agri-trade policy

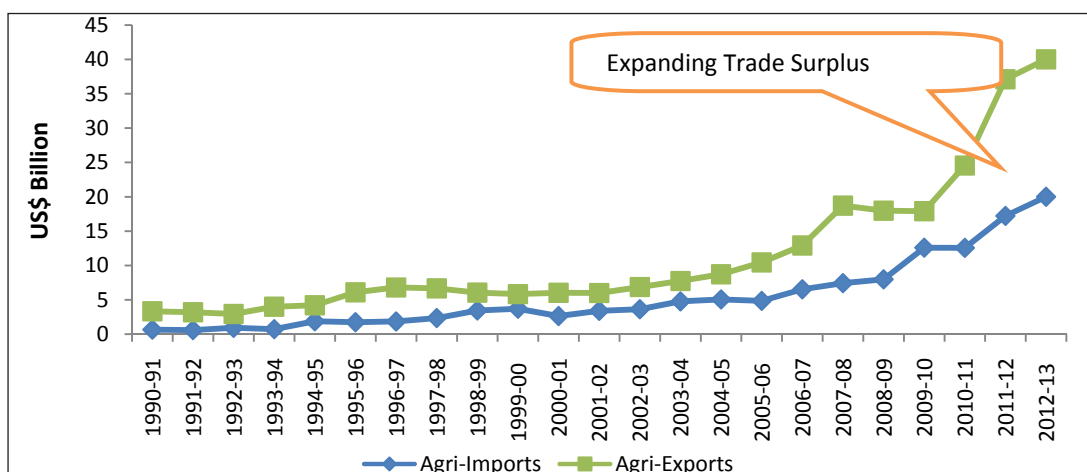
*As per WTO, India's share in total global exports of agri products has increased from 0.8 percent in 1990 to 2.1 percent in 2011*

<sup>3</sup> Advance Estimates for National Income, 2012-13, CSO

<sup>4</sup> 'Farm Trade: tapping the Hidden Potential', Discussion Paper No. 3, CACP available at <http://cacp.dacnet.nic.in>

with moderate duties is the need of the hour. The guiding principles of such a policy should be the alignment of domestic and international prices along long-term trends, while guarding against sharp spikes and troughs through provision of special safeguards.

**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 2012-13 are expected estimates. Agri-Exports & Agri-Imports were US\$ 34.1 billion and US\$ 17 billion respectively for the period Apr-Jan, 2012-13

## Comfortable Stocks with the Central Pool

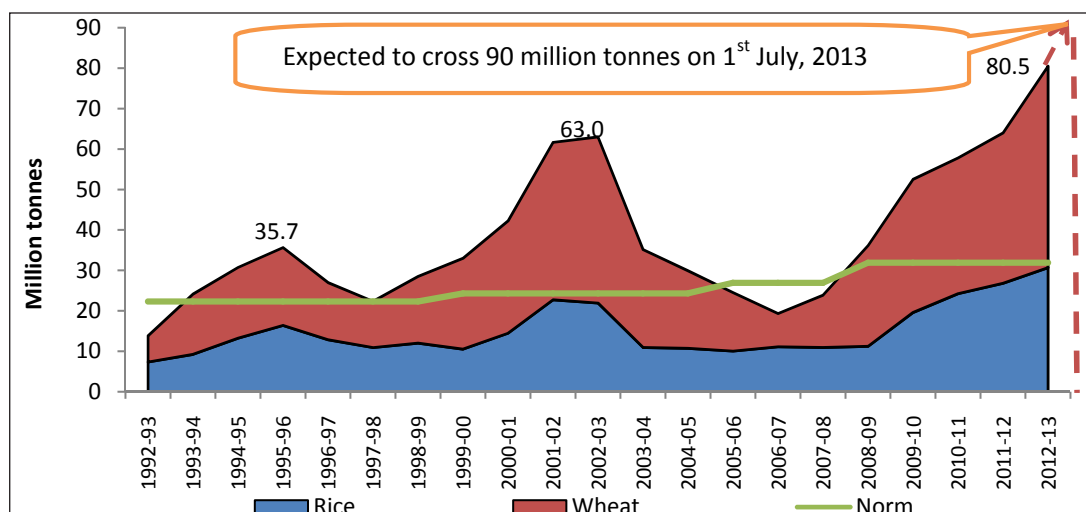
- 1.3 Despite the expected fall in production in foodgrains in 2012-13, there is adequate availability of foodgrain stocks with the central pool. As against the buffer stock norm of 31.9 million tonnes of rice & wheat (as on 1st July of each year), total Central Pool stocks were more than double at 80.5 million tonnes (30.7 million tonnes of rice and 49.8 million tonnes of wheat) on 1st July, 2012 (Chart 1.3). The situation is not very different as on 1<sup>st</sup> January, 2013 – with 66.6 million tonnes of central pool stocks and more than double the buffer stock norm of 25.0 million tonnes. It is expected that these would cross 90 million tonnes by 1<sup>st</sup> July, 2013 with record procurements for rice and wheat in KMS 2012-13 and RMS 2013-14. These excess stocks, beyond the buffer stock norms, as on 1<sup>st</sup> July, 2012 amount to around Rs 73,000 crore<sup>5</sup> locked in FCI godowns. Accounting for the fact that the economic cost of FCI towards procurement incidentals, storing and distributing foodgrains is about 40 percent more than the procurement price, the locked in extra stocks value more than Rs 1 lakh crore - more than the budgeted food subsidy of Rs 90000 crore in 2013-14. The macroeconomic implication of this infusion of “excess” money into the economy without corresponding flow of goods is evident in the paradox of rising prices of rice & wheat amidst plenty stocks.

*Central Pool Stocks more than double the buffer stock norms, with extra locked in stocks worth more than Rs 1 lakh crore – creating inflationary pressures*

<sup>5</sup> @Rs 12850 per tonne for 29.7 million tonnes of wheat and Rs 18000 per tonne, levy price for procurement of rice, for 18.9 million tonnes of rice held in excess of the norm, as on 1<sup>st</sup> July, 2012



**Chart 1.3: Central Pool Stocks with FCI**



Source: FCI

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

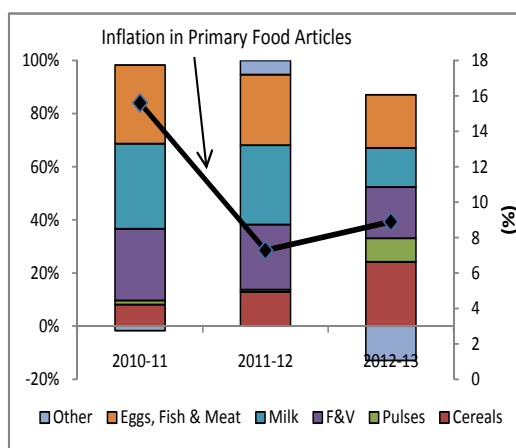
## Anomaly of High Food inflation with Overflowing Central Pool Stocks

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. In the year 2011-12, food inflation eased up a little due to good production, base year effect and tight monetary policy. But 2012-13 has seen a resurgence in food inflation which poses a major challenge for policymakers as high food inflation inflicts a 'hidden tax' on the poor, who spend almost 60% of their expenditure on food (NSSO). A distinct feature of food price inflation in recent years was the increased contribution of fruits & vegetables (F&V), milk and fish, meat & eggs to food inflation vis-à-vis the share of cereals and pulses. But in 2012-13, cereals have contributed more than 30 percent to food inflation-ahead of all other components (Chart 1.4). Despite good production and bulging central pool stocks, the inflation in rice and wheat have witnessed an upsurge in 2012-13 (Chart 1.5).

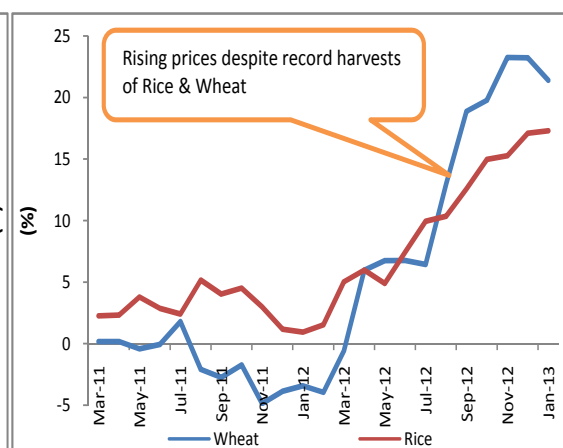
1.5 This 'anomaly' of a spurt in wheat and rice prices in the face of overflowing grain stocks is purely due to suboptimal grain management. In recent years, the government has procured more than one-thirds of the total production and more than half of the marketed surplus of rice & wheat leading to stock accumulation. Such large scale public procurement strangles the private trade (as has been the case in Punjab, Haryana and now Madhya Pradesh & Chhattisgarh) and creates an artificial shortage resulting in shooting prices. Faced with increasing prices, the stocks are being liquidated but at a price which includes all levies incidental to procurement (additional bonuses on MSP in

*In 2012-13, cereals have contributed more than 30 percent to food inflation*

**Chart 1.4: Contribution of various items to Inflation in Primary Food Articles**



**Chart 1.5: Price Inflation in Rice & Wheat, 2011-12 & 2012-13**



Source: Computed from data available from DIPP

Note: The data for 2012-13 is till the month of January, 2013

Chhattisgarh and high statutory levies in Punjab, Andhra Pradesh, Haryana and Odisha) adding to the inflationary pressures and also making them unviable for exports (at a time when international prices of wheat are on an upswing). The visits of the Commission to some of the storage sites (such as in Haryana) revealed that food stocks of 2008-09 are still lying with the central agencies. Despite the huge carrying costs, fresh record procurements continue unabated. This mismanagement of food stocks is inflicting huge economic losses on the food economy. A complete overhaul of the current policy of open-ended procurement is urgently required.

*'Anomaly' of a spurt in wheat and rice prices in the face of overflowing grain stocks is purely due to suboptimal grain management*

## National Food Security Bill (NFSB) - Making it more Effective

- 1.6 The NFSB, already introduced in the Lok Sabha and currently being deliberated upon, aims to address the issue of lack of economic access to food and eradicate hunger from India. The central pivot of the Bill is large-scale subsidized physical grain distribution to almost two-thirds of the country's population of 1.2 billion. This would require further intensification of the role of government in augmenting production, enhancing procurement and stocking large amounts of grains to meet the underlying commitments of food distribution. The required increase in procurement by the state would crowd out private sector operations further with an adverse effect on overall efficiency of procurement and storage operations as well as on magnitude of food subsidies and open market prices. The existing food security complex of procurement, stocking and distribution would need to expand further and would increase the operational expenditure under NFSB given its creaking infrastructure, leakages (which amount to about

*It is time to reframe the foodgrains policy with movement from physical handling & distribution of foodgrains to cash transfers/ food coupons/ smart cards and cover food subsidy under the DCT scheme*

*Surplus states and cities with a population of 1 million or more could move straightaway to cash transfers*

40 percent as per the Commission's calculations<sup>6</sup>) and inefficient governance. This would also slow down or even regress the process of overall diversification in agriculture, from cereals to high-value commodities, contrary to the emerging demand patterns in the country. It may be noted here that internationally, conditional cash transfers (CCTs), rather than physical distribution of subsidized food, have been found to be more efficient in achieving food and nutritional security. The case of Brazil with the largest CCT scheme, which has been instrumental in replacing poorly targeted subsidies, improving the quality of delivery of services and achieving desired improvements in social welfare, is worth emulating here. Therefore, there is an exigency to reframe the foodgrains policy with movement from physical handling and distribution of foodgrains to cash transfers/food coupons/smart cards and cover food subsidy under the 'Direct Cash Transfer' (DCT) scheme. A pilot study by United Nations Development Programme (UNDP) and Self-Employed Women's Association (SEWA) have shown that cash transfers do not adversely affect food security but provide additional opportunity to increase other nutritious food options<sup>7</sup>.

- 1.7 As enunciated in a discussion paper<sup>8</sup>, surplus states (in terms of production and consumption of cereals) and cities with a population of 1 million or more (currently 33 as per 2011 census) could move straightaway to cash transfers. States which are only consuming states may continue with the physical handling of foodgrains. As India is a vast country, it may be left to individual states to devise their own systems of provision of food security. Only an optimum level of buffer stocks needs to be maintained by FCI for contingencies. This would go a long way in pruning the food subsidy and more importantly help in achieving the welfare objectives efficiently.

## Emerging Imbalance between Investments & Subsidies

- 1.8 As a percentage of agri-GDP, the Gross capital formation (GCF-agri) has increased substantially during the last decade from 11.9 percent in 2000-01 to 19.8 percent in 2011-12. Input subsidies, i.e on major inputs like fertilizers, power, irrigation and credit, are almost as high as 70 percent of the GCF in agriculture. It is interesting to note here that the public sector accounts for only 20 percent of the total investment in agricultural sector in India. Therefore, if one looks at input subsidies in relation to public investments in agriculture, subsidies are almost six times higher.
- 1.9 If we consider the total public expenditure on agriculture (including public investment & input subsidies) as a ratio of GDP (agri), it has more than doubled from 8.6 percent in 1993-94 to 20.6 percent in 2009-10. So it appears that

<sup>6</sup> 'National Food Security Bill: Challenges & Options', Discussion paper No. 2, CACP available at <http://cacp.dacnet.in>

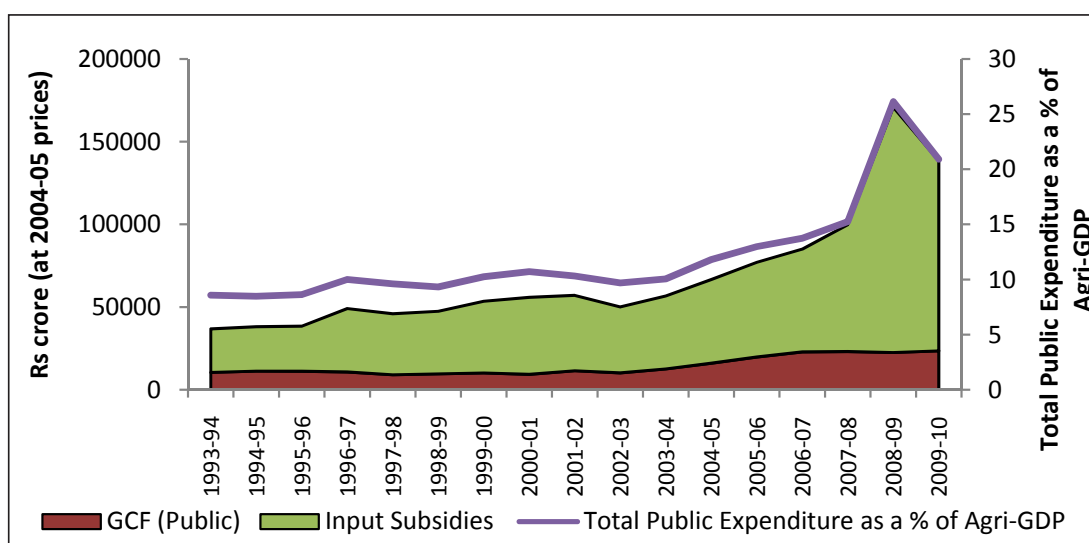
<sup>7</sup> <http://www.undp.org/content/dam/india/docs/poverty/Final-study-results-SEWA-PDS.pdf>

<sup>8</sup> 'National Food Security Bill: Challenges & Options', Discussion paper No. 2, CACP

*Indian agriculture receives public resources more in the form of subsidies (80%) than public investments (20%)*

there are sufficient public resources going to agriculture. The bane lies in the composition of that expenditure - Indian agriculture receives public resources more in the form of subsidies than public investments. Almost 80 percent is in the form of input subsidies and only 20 percent is investment in agriculture (Chart 1.6). This is reflective of the imbalance between use of subsidies & investments as policy instruments for agricultural growth and a tradeoff between short term growth and long term sustainability. Research<sup>9</sup> shows that marginal returns from investments are much higher (5 to 10 times) than through subsidies. The Commission, therefore, reiterates its earlier recommendation<sup>10</sup> that an expert committee be set up to suggest ways and means how this rationalization and containment of input subsidies can be carried out and the savings thereupon can be channeled towards agri-investments.

**Chart 1.6: Composition of Public Expenditure on Agriculture**



Source: CSO, Agricultural Statistics at a Glance, Various Issues

1.10 The biggest of all these input subsidies is fertilizer subsidy, and there are clear indications that it has led to imbalanced use of N, P and K in states like Punjab and Haryana, which needs to be corrected. With the launch of Nutrient Based Subsidy (NBS) Policy, the subsidy per kg of nutrients N, P and K is fixed by the Government and retail prices for P&K fertilizers have been freed. As the price of urea has remained fixed, the differential between the prices of urea and P&K fertilizers has widened leading to excess of use of N at the expense of P&K fertilizers. This has distorted the NPK ratio and has led to unbalanced use of soil nutrients. This distortion is on the higher side in Haryana and Punjab leading to deterioration in their soil quality and declining growth in

*Fertilizer subsidy needs to be rationalized to prevent suboptimal use of fertilizers*

<sup>9</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

<sup>10</sup> Price Policy Report for Rabi Crops, 2013-14, CACP



land productivity at the margin. As these two states are the leading producers of cereals in India, right signals need to be given in fertilizer usage for their sustainable growth. The fertilizer subsidy needs to be rationalized to prevent suboptimal use of fertilizers.

## Imbalance in the Agricultural Production Structure

- 1.11 Indian farmers clocked a record food grain production of 259.3 million tonnes in 2011-12 – more than the likely demand of foodgrains estimated by the Planning Commission for the year 2016-17 at 257 million tonnes. Despite a fall in production expected in 2012-13, there are abundant stocks of rice and wheat with the Central Pool. On the other hand, oilseeds (edible oils) and pulses are major challenges for India in terms of meeting its demand from domestic production. Imports of edible oils constitute almost half of total domestic consumption of edible oils. India imported a record US\$ 9.7 billion worth of edible oils in 2011-12 (47.5 percent jump from last year) and US\$ 1.8 billion worth of pulses (an increase of 16.4 percent as compared to last year). During the first ten months of FY 2012-13, India has already imported US\$ 9.6 billion of edible oil and US\$ 1.9 billion of pulses. The Commission feels that the right strategy should be to shift focus from cereals to these crops by providing them attractive price incentives and supportive marketing/procurement infrastructure. Therefore, it has tried over the last few years to realign the price incentives in favour of oilseeds and pulses to help farmers allocate larger irrigated area for these crops and adopt best technologies/farm practices.
- 1.12 Budget 2013-14 has appreciably recognized this challenge and has made provisions to start a programme of crop diversification (from paddy/wheat to other crop alternatives) in original Green Revolution States. The existing schemes of NFSM and BGREI are already a step in the right direction and have proved successful. The natural step ahead is to synergize these schemes and evolve a comprehensive strategy towards crop diversification. The MSP policy, accordingly, can help achieve this overall objective of the government, which will promote rational utilization of scarce resources, especially land and water and promote efficiency in line with our global comparative advantages.

*Abundant stocks of rice & wheat in the Central pool but large imports of pulses & edible oils – need to evolve a comprehensive strategy towards crop diversification*

## Global Outlook

- 1.13 According to FAO Food Outlook, November 2012, food prices have averaged 8 percent lower during the first ten months of 2012 compared to the same period last year. The FAO Food Price Index (FFPI), with the base of 2002-04, stabilized at 210 points in February 2013, same as January 2013, after declining consecutively for three months. Global cereal supply and demand balance is forecast to tighten considerably in 2012-13, due mainly to declines in wheat and maize production though rice supplies are expected to be ample. The

*Globally,  
decline in  
wheat, maize,  
soyabean  
and cotton  
production  
but ample rice  
supplies*

prices of oilseeds are expected to be under pressure due to a disappointing soybean crop in the United States. According to International Cotton Advisory Committee (ICAC), global cotton production and global stocks could contract by 11 percent and 6 percent respectively in 2013-14. This would be the second consecutive season of decline in cotton production and the smallest output in four years.

## Emphasis on 'Getting the Markets Right'

- 1.14 Indian agriculture is a critical economic activity contributing about 14 per cent to overall GDP of the country and with half the workforce employed in it. But agriculture is stifled by various controls ranging from trade to domestic marketing and stocking under the ECA, 1955 or APMC Act or Land Tenancy Acts, etc. All these laws need a thorough review with an objective to make them more market friendly, promoting competition, efficiency and growth. Inadequate availability of quality inputs and low farm productivity have led to rising costs of production. The real costs are even higher given the increasing proportion of input subsidies in agriculture. It is high time that one focuses on not only 'getting the prices right' especially for inputs but also 'getting the markets right' for outputs. Only this would lead to rational utilization of scarce inputs, raise productivity, investment and growth in the agricultural sector.
- 1.15 The last Kharif Price Policy Report largely focused on 'getting the prices right' and as a consequence, there was a major realignment in the level and relative price structure. This Report, however, emphasizes the need for 'getting the markets right'. Accordingly, chapter 2 delineates the various prevalent market distortions and also attempts to rank states in accordance with their market friendly policies in paddy & rice markets. Chapter 3 looks at domestic prices in relation to international prices and trade policies with a view to reduce distortions with respect to international trade. Chapter 4 presents the cost projections for the kharif crops. Chapter 5 looks at the relation between yields and real costs of production indicating clearly that if costs are to be contained and thereby real prices of agricultural products, there is no soft option but to increase yields by increasing investment in agri R&D (seeds) and devising incentive policies for faster adoption of modern technology. Finally in chapter 6, major highlights of all chapters are presented leading to the key price and non-price policy recommendations.



## Chapter 2

# Demand-Supply, Procurement, Prices and Market Distortions

### Demand-Supply

- 2.1 The year 2012-13 is expected<sup>11</sup> to register a fall in foodgrain production by 3.5 percent to 250.1 million tonnes as compared to a record production of 259 million tonnes in 2011-12. Production of rice and maize are expected to fall by 3.3 percent to 101.8 million tonnes and by 3.2 percent to 21.1 million tonnes respectively. Total pulses' production is expected to be higher by 2.9 percent at 17.6 million tonnes; although production of kharif pulses is estimated to decline by 9.6 per cent to 5.5 million tonnes, with a 3.8 percent increase in tur, a fall in urad by 1.7 percent and in moong by a steep 22.1 percent. The production of total nine oilseeds in 2012-13 is also expected to be marginally lower than last year by 1.1 percent at 29.5 million tonnes with a sharp drop in groundnut by 16.7 percent to 5.8 million tonnes; however soyabean is estimated to increase at 6.1 percent to a record 13.0 million tonnes. Cotton production is expected to decline by 4.0 percent to 33.8 million bales (of 170 kg each) in 2012-13 as compared to last year. Thus, the year 2012-13 is expected to show some downward fluctuation on the supply side for most of kharif crops (Annex Table 2.1).

*The year 2012-13 is expected to show some downward fluctuation on the supply side with most of kharif crops*

<sup>11</sup>Second Advance Estimates, DAC

2.2 The prices, however, are ultimately determined by the interplay of the forces of demand and supply. An important parameter to gauge the degree of tightness or abundance of a commodity vis-à-vis its demand is the ratio of end of season stocks to year round expected demand of that commodity. Since demand is dynamic, depending upon rising population, incomes, prices of the commodity under consideration and its close substitutes as well as tastes and preferences of people, an approximation of the likely demand is made using data available from Government sources and trade sources (wherever available). The stocks-to-use ratios for major kharif crops are reported in table 2.1, while their detailed working is given in Annex table 2.2. The general stocking norm in case of seasonal crops is that 17-20 percent of production should be in the form of year-end-stocks to take care of demand till the next crop hits the market. The stocks of rice and wheat, which are kept in the Central Pool, are known and those estimates are reasonably reliable. But the stocks of other commodities, which are primarily in the private sector, are estimated through various sources and the reliability of those estimates is often a matter of discussion and debate. Accordingly, wherever the Commission finds large differences in alternative estimates, it has reported more than one estimate for some commodities.

**Table 2.1: Stock- to- Use Ratios of Kharif Crops**

(in percentage)

Commodity	2009-10	2010-11	2011-12	2012-13
Rice	26.41	27.84	29.99	31.85
Wheat (Rabi crop)	20.62	18.78	24.24	33.76
Maize	2.64	2.78	5.32	2.53
Tur	5.36	20.00	22.67	32.50
Tur #	0.36	9.64	7.67	1.07
Moong & Urad	10.85	29.39	37.14	31.43
Moong #	7.53	28.00	27.50	15.00
Urad #	6.67	26.11	33.16	27.89
Soyabean oil	NA	4.51	13.89	45.45
Soyabean oil ^	NA	3.47	4.17	26.94
Cotton @	11.84	13.62	7.47	10.16
Cotton \$	NA	41.76	24.94	34.20

*Stock-to-use ratios are comfortable in the case of most of the major crops except maize, moong and cotton*

Note: # - based on IPGA estimates; ^ - based on Agriwatch estimates; @ based on CAB estimates; \$ - based on USDA estimates; all others based on DAC production estimates; Moong & Urad are taken together as DGCIS does not bifurcate their imports; NA – not available.

Sources: DAC, DGCIS, VVOF (DFPD), CAB, IPGA, NCAER, USDA, Agriwatch

2.3 *Prima facie*, it is apparent that the stock-to-use ratios seem comfortable in the case of most of the major crops except maize, tur (as estimated by IPGA) and cotton (as estimated by CAB). High stock-to-use ratios of both urad and tur are



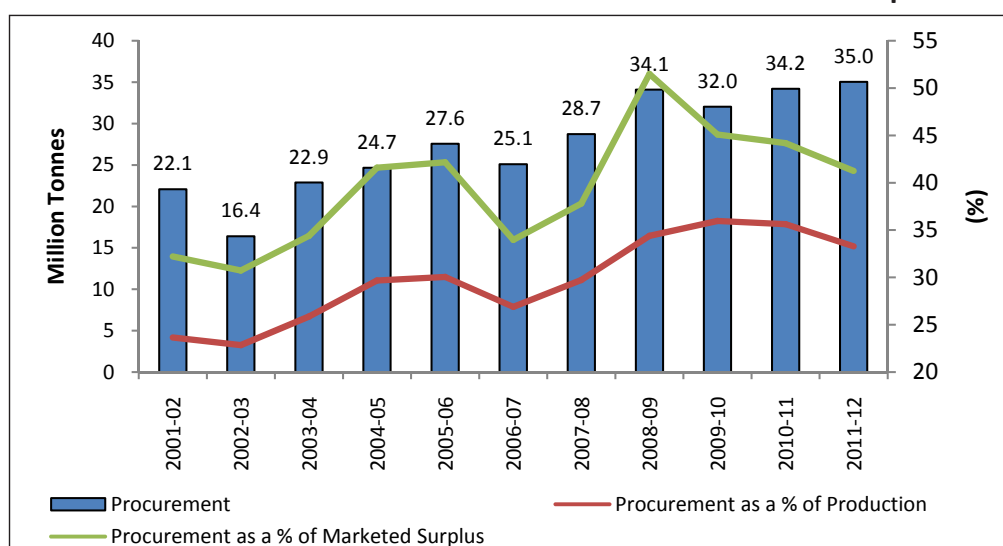
*Procuring more than 40% of the marketed surplus of rice has led to the anomaly of piling up of rice stocks with FCI and double digit inflation in rice in recent months*

expected to exert a downward pressure on their prices. As per Second Advance Estimates of DAC, a steep decline in production of moong is expected leading to a decline in its stocks to use ratio. This is corroborated by the rising prices of moong. The shortfall in supply of groundnut is manifest in its rising prices (chart 2.5 a to h)

## Procurement - Policy and Operations

- 2.4 Among the kharif crops, the role of procurement operations of FCI to give support to MSP is largely limited to rice. National Agricultural Cooperative Marketing Federation of India Limited (NAFED), National Cooperative Consumers' Federation of India Limited (NCCF) and Central Warehousing Corporation (CWC) are the Central nodal agencies of the Government of India for undertaking procurement of oilseeds and pulses under Price Support Scheme (PSS), when the market rates of a particular commodity fall below MSP.
- 2.5 Since 2006-07, the procurement levels for rice have increased manifold with more than one-third of the total production (more than 40 percent of the marketed surplus) being procured for Central Pool (Chart 2.1). Such large scale procurement has led to the anomaly of piling up of rice stocks with FCI and double digit inflation in rice in recent months. As against the buffer stock norm of 11.8 million tonnes of rice (as on 1st July of each year), total Central Pool stocks of rice were more than double at 30.7 million tonnes on 1<sup>st</sup> July, 2012. This year procurement of rice, as on 14.3.2013, had already touched 28.4 million tonnes. With a targeted record procurement of 40 million tonnes of rice in KMS 2012-13, it is anticipated that the Central Pool stocks of rice would cross 40 million tonnes on 1<sup>st</sup> July, 2013.

**Chart 2.1: Rice Procurement as % of Production & Marketed Surplus**



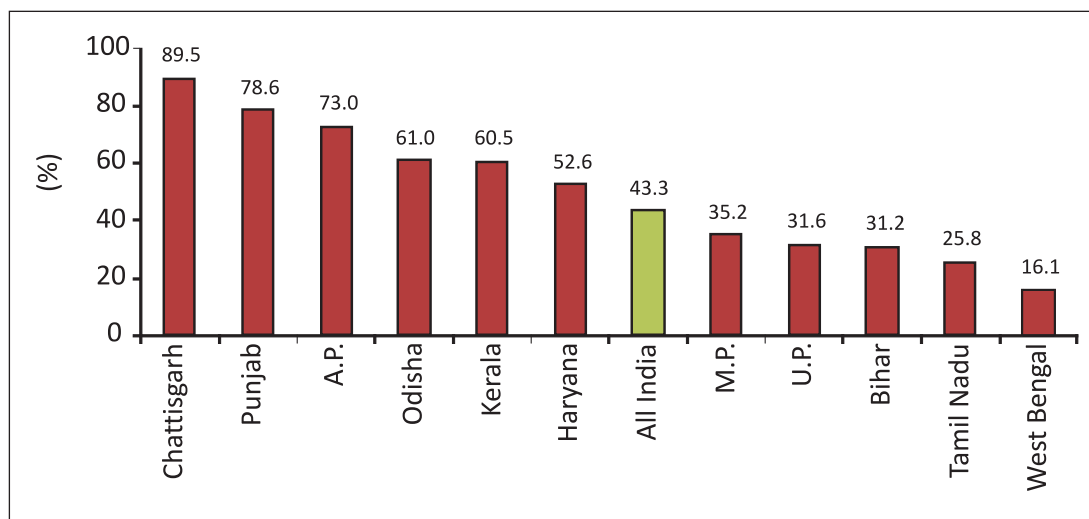
Note: Marketed Surplus Ratio (MSR) is available upto 2010-11 only and the figure of 2010-11 is repeated for the years thereafter.

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

*Apart from imposing huge costs to procure, store, transport and distribute grain, increasing public procurement strangles the domestic grain market*

- 2.6 Apart from imposing a huge additional cost to procure, store, transport and distribute grain, increasing public procurement strangles the domestic grain market. The private sector has been largely marginalized in traditional high contributing states like Andhra Pradesh, Punjab & Haryana (Chart 2.2). New entrants like Chhattisgarh, Odisha and Kerala are also catching up as far as procurement as a percentage of production is concerned.

**Chart 2.2: Rice Procurement as a % of Marketed Surplus, TE 2011-12**



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

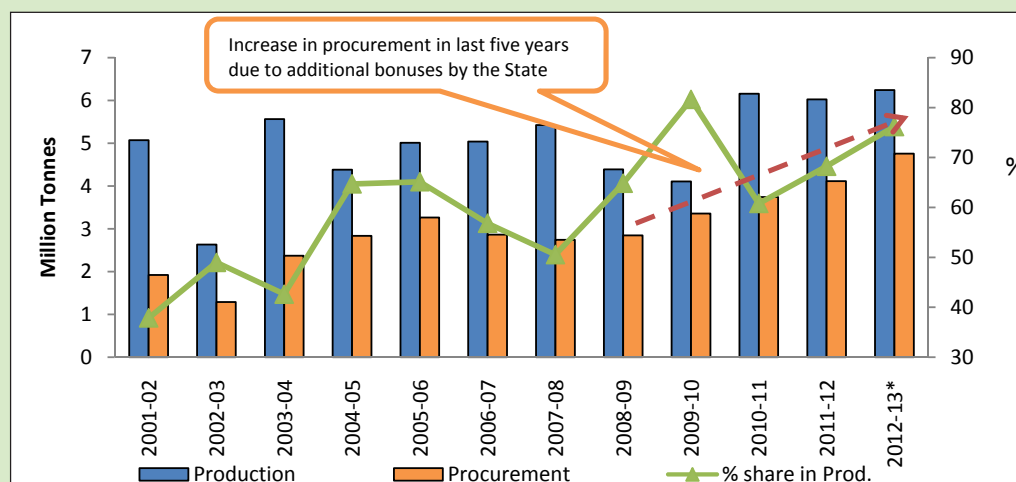
Note: MSR is available upto 2010-11 only and the figure of 2010-11 is repeated for the years thereafter. For Chhattisgarh, MSR has been estimated by market arrivals of paddy.

- 2.7 Chhattisgarh has been announcing a bonus on MSP of paddy for the last five years and has almost totally crowded out the private sector (Box 2.1). Thus, the government has turned into a monopsonist, being the single largest buyer of rice. This has destroyed market competition in these states and is consequently leading to rising costs of inefficient procurement operations.

### Box 2.1: Chhattisgarh: State policy triggering distortions in rice market

- Chhattisgarh declared a bonus of Rs 220/qlt in 2008-09, in addition to the Rs 50 per qlt bonus announced by the Centre and has been providing Rs 50/qlt bonus to its farmers since then which has created a spurt in rice production and procurement in the state. In the latest Budget the State has announced a bonus of Rs 270/qlt for 2012-13, which is almost 22 percent of the MSP announced by the Centre.
- In a span of five years, from 2008-09 to 2012-13, while area under rice has remained stable at 3.7 million ha, production of rice increased by 42.2 per cent from 4.4 million tonnes to 6.3 million tonnes, while procurement increased by 67 per cent from 2.9 million tonnes to 4.8 million tonnes (as on 26.2.2013).
- From procuring half of its rice production in 2007-08, the Government has now (up to 26.2.13) cornered more than three-quarters of its total rice produce in 2012-13 (See chart 2.3). More than 90 per cent of market arrivals are now being procured by the state. While the efforts of the state in increasing rice production are laudable, its increasing presence in the market has totally marginalized the role of private trade in the state. During the Commission's visit to the state, several reports of paddy coming from adjoining states, especially Odisha, to be sold to the government due to high bonus, came to light. Besides, it is leading to monoculture of rice in many pockets, which may not be good in the long run.

**Chart 2.3: Rice Production & Procurement as a share of production in Chhattisgarh (2001-02 to 2012-13)**



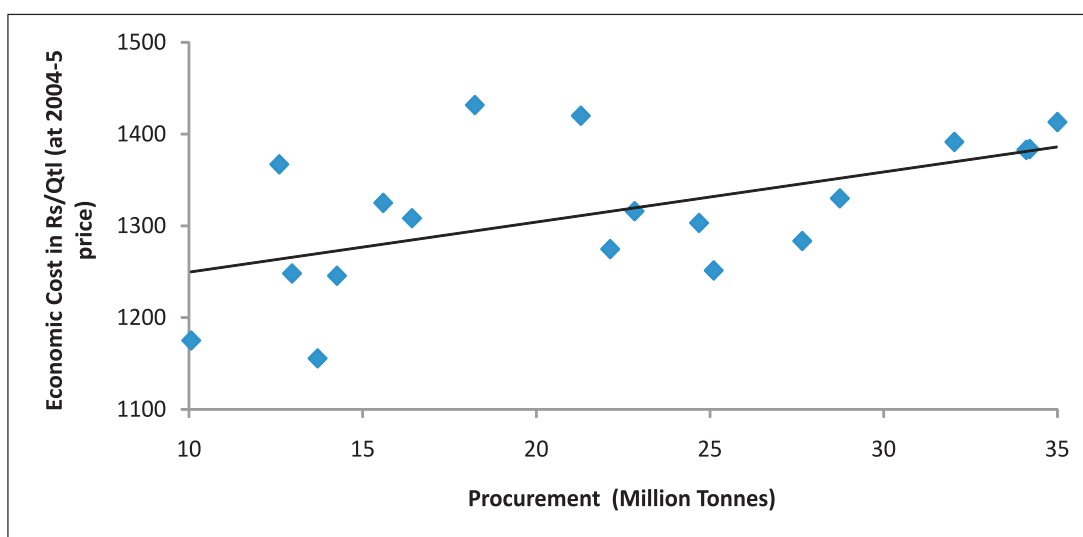
\*Till 26.2.2013

Source: DES, FCI

*FCI suffers from diseconomies of scale with increasing levels of procurement*

- 2.8 The economic cost of procurement to FCI has been increasing over time and with rising procurement levels - demonstrating that it suffers from diseconomies of scale with increasing levels of procurement (Chart 2.4). Currently, the economic cost of FCI for acquiring, storing and distributing rice is about 40 percent more than the procurement price. To illustrate the costs involved in holding stocks, in terms of storage and interest cost alone, the cost of carrying rice for a year with government agencies is about Rs 300/ql. As on 1<sup>st</sup> February, 2013, the rice stocks in the Central Pool were 35.4 million tonnes-two and a half times the buffer norm (13.8 million tonnes on 1<sup>st</sup> January). There are estimates that FCI is still carrying stocks which are 2-3 years old. This amounts to gross wastage of economic resources without serving any welfare objective. Also, the private sector needs to be involved to impart efficiency and transparency to the procurement and handling operations. Otherwise, increasing procurements will lead to more than proportionate increase in economic costs of FCI, given its diseconomies of scale, and consequently perpetual increases in food subsidy.

**Chart 2.4: Economic Cost of Rice Procurement to FCI (1993-94 to 2011-12)**



Source: Commission's calculations based on the basic cost data from FCI

- 2.9 This sub-optimal management of stocks becomes all the more glaring when the quality and quantity of storage capacity is considered. The total storage capacity of FCI and state agencies, as on 1.2.2013, was 71.7 million tonnes, of which covered capacity was 53.4 million tonnes and the rest were under Cover and Plinth (CAP). The stock (rice + wheat) position as on 1<sup>st</sup> July, 2013 is expected to cross 90 million tonnes. The gross inadequacy of storage capacity is evident exposing stored grains to damage. It was observed during the visits of the Commission that many procurement centres in Chhattisgarh had minimal infrastructure for storage in place, where even dunnage (the plinth) and tarpolin covers were missing. In this context, the Commission recommends that the government revisit the policy of following an open-ended procurement by

*Quantity and quality of storage capacity with State agencies is grossly inadequate*

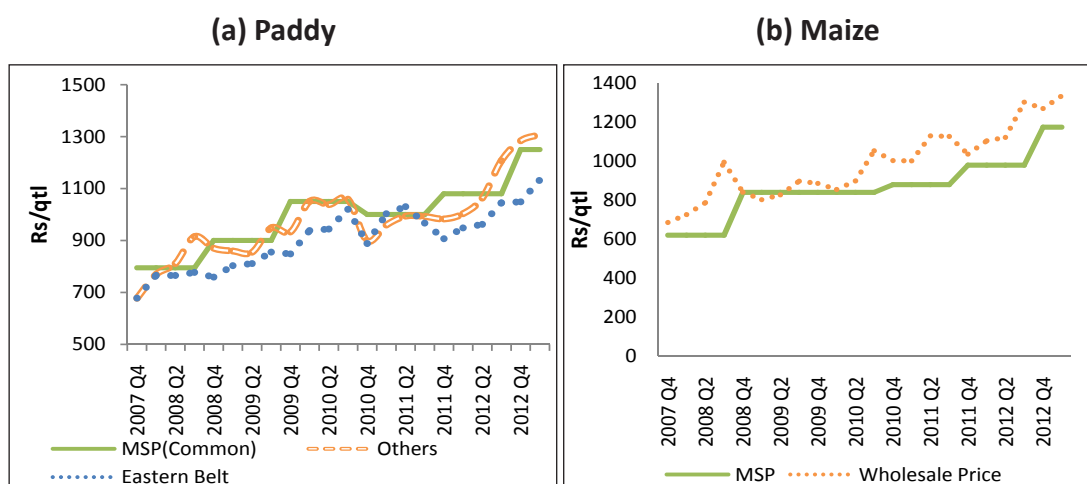


FCI. Instead, rational procurement targets for states, based on what is the total requirement of FCI for public distribution, may be fixed for each state.

## Prices and Efficacy of Price Policy

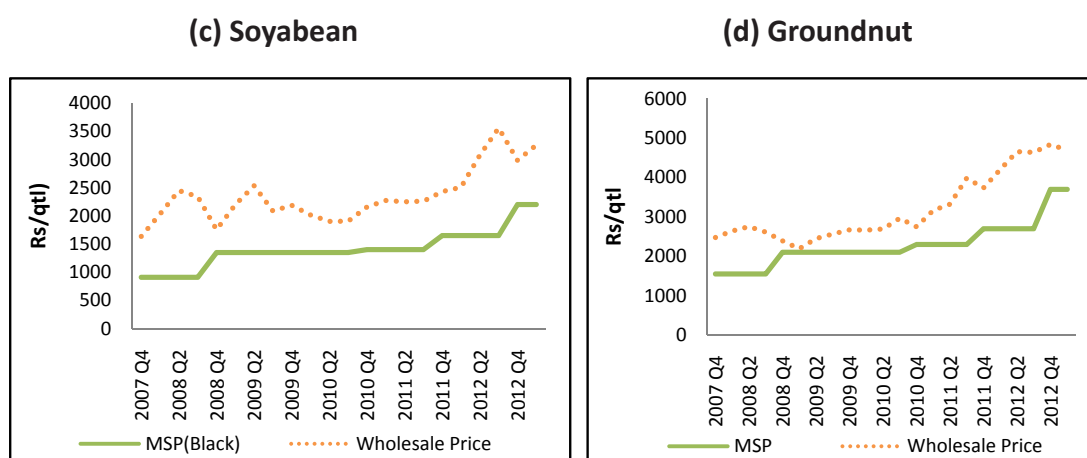
2.10 An examination of the wholesale prices of the major kharif crops reveals that prices of paddy (excluding the eastern belt), maize, moong, groundnut and soyabean are generally showing a rising trend, while the prices of paddy (in the eastern belt), tur, urad and cotton are currently ruling below or around their respective MSPs. States/centers where prices of kharif crops tipped below MSP during 2012-13 are given in annex table 2.4 (a&b). Charts showing the wholesale prices of the major crops vis-à-vis their MSPs are shown under chart 2.5 (a) to (h).

**Chart 2.5: Wholesale price trends of Major Kharif Crops - 2007 Q4 to 2013 Q1**  
(Prices of 2013 Q1 up to 25.2.2013)



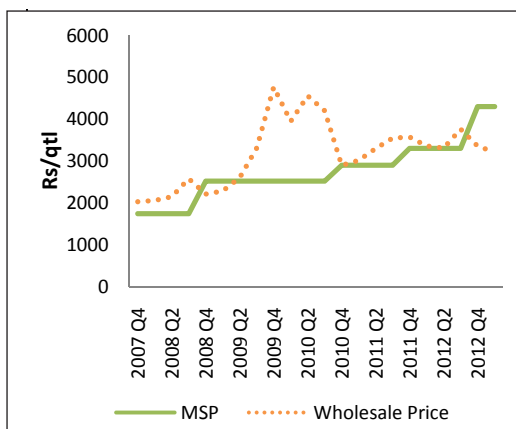
Source: DES

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.

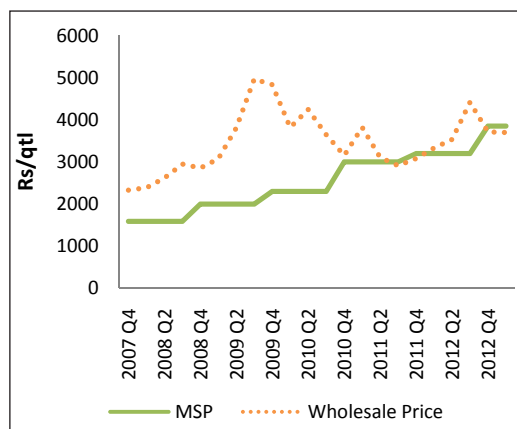


Notes: Average wholesale prices of soyabean at M.P. and of groundnut at Gujarat.

(e) Tur

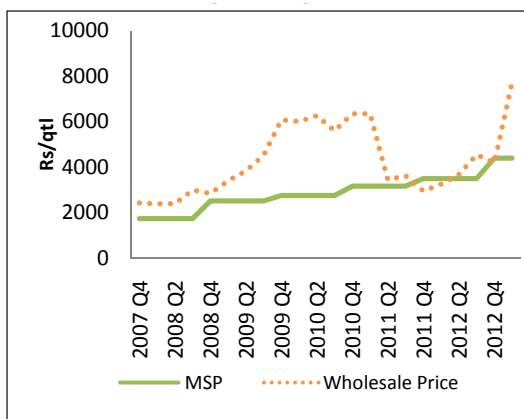


(f) Urad

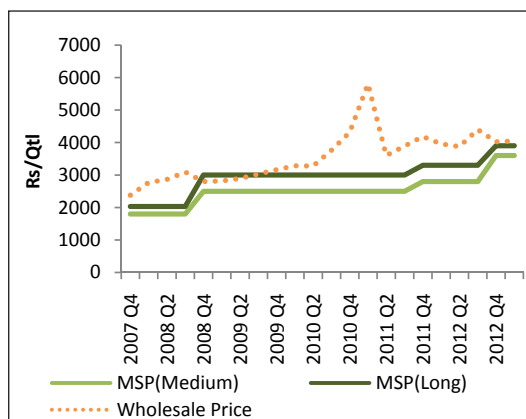


Note: Wholesale price of tur at Akola, Maharashtra and urad at Jalgaon, Maharashtra.

(g) Moong



(h) Cotton



Note: Average wholesale price of moong at Rajasthan, wholesale price of cotton at A.P. & Gujarat.

- 2.11 Currently, tur and urad prices continue to be below the MSP, while those of cotton are just above the MSP. NAFED has purchased 73954 tonnes of urad and 15175 tonnes of tur in the current season as of 27.02.2013, when their prices went below MSP. Of these nearly 95 per cent of urad was purchased from Mumbai, Lucknow, Bangalore, Jaipur and Hyderabad; while tur was largely purchased in Mumbai and Hyderabad. Prices of cotton also occasionally dropped below MSP. As of 28.2.2013, CCI procured 2.3 million bales of cotton, of which 2.15 million bales was from Andhra Pradesh which was nearly 30 per cent of its estimated cotton production.

- 2.12 Some states, notably Chhattisgarh, is giving a bonus of Rs 270/qrtl on paddy for 2012-13, which works out to about 22 percent of MSP. As a result, not only private trade is crowded out, but also rakes of paddy from these regions (especially eastern UP, Bihar, Odisha, etc) are reportedly sent to Punjab/Haryana/Chhattisgarh, and after milling, in many cases, the same paddy comes back through the Public Distribution System (PDS) at huge costs. This is due to the slow

*Prices of tur, urad, cotton and paddy (in the eastern belt) fell below MSP in recent months*

*Paddy farmers in the entire eastern belt are selling at 10 - 20 % below MSP, while FCI is procuring paddy/ rice from states (like Punjab, Haryana, AP, Chhattisgarh) at 10 to 15 percent above MSP due to high taxes and other statutory levies*

*Agriculture is stifled by various controls ranging from trade to domestic marketing & stocking*

growth of rice mills with large capacities in both UP and Bihar. Although Bihar has announced a subsidy of 35 per cent [40 per cent in the case of groups such as Special Purpose Vehicles (SPV)] of the project cost for setting up new rice mills or modernize existing ones, they are capped at Rs 50 lakhs (Rs 100 lakhs for SPVs), which has led to a mushrooming of small scale units with low capacities. Under the subsidy scheme, 55 units have been given subsidy and their average capacity is 4 tonnes per hour. It is reported that of the total of around 350 rice mills about 295 or more than 80 per cent of mills are of less than one tonne/hour capacity. It is also reported that the conversion rate of paddy to rice in these small units is only 60 per cent vis-à-vis 67 per cent in the bigger ones. Bihar needs modern and large scale mills that give higher recovery at lower costs and would promote efficiency and growth. For this, the subsidy cap needs to be reviewed.

- 2.13 This lack of marketing infrastructure especially in the eastern belt along with the spurt in prices of rice in the domestic market despite surplus stocks available with State Agencies is indicative of existence of gross distortions in agri-markets, calling for urgent reform with a view to “get the markets right”.

## Market distortions

- 2.14 The essential roles of a market are price discovery of traded goods and services and serve as a signal for efficient allocation of productive resources. Any distortions to competitive functioning of markets adversely affect these functions and reduce the efficiency of market outcomes. Indian agricultural sector is currently stifled by various controls ranging from trade to domestic marketing and stocking. Reforming these distortions will create greater competition, promote efficiency and growth, and thus should be accorded high priority.

### Bonuses on MSP

- 2.15 The MSP mechanism was adopted during the 1960s as an answer to market failure that was actually created due to market controls, such as stocking limits, movement restrictions, export controls etc. These led to an artificial glut in the market which was also compounded by the absence of long term storage capacities in the private sector. The MSP mechanism was put in place to act as insurance for the farmer against such market crashes that were unnaturally created. The aim was also to turn Indian agriculture into a remunerative sector so that farmers are incentivized to adopt modern technologies and better farming practices, raising productivity and overall production. The mechanism has over the years served to enhance the production of specific crops such as rice and wheat. In recent times, while this mechanism itself seems to have limited purpose, state governments have been announcing crop specific bonuses, which have affected the inter-crop parity as they influence the farmer to grow a particular crop at the cost of other equally important crops and thus distort the production basket. For instance, Chhattisgarh declared a bonus of Rs 220/

*Bonuses on MSP affect the inter-crop parity and distort the production basket*

qtl for paddy in 2008-09, in addition to the Rs 50 per qtl bonus announced by the Centre (thus totaling Rs 270/qtl) and has been providing Rs 50/qtl bonus to its farmers since then. A bonus of Rs 270/qtl on paddy has been announced for 2012-13, which would further distort the rice market with increased paddy/rice production and state procurement. Other states have also increased the bonus in 2012-13 over last year: Kerala from Rs 420 to Rs 450 per quintal, Madhya Pradesh from Rs 50 to Rs 100 per quintal for both common and grade A varieties. Tamil Nadu<sup>12</sup> (at Rs 50 per quintal for both common and grade A varieties) and Karnataka (at Rs 250 per quintal) have maintained last year's levels. The Commission recommends that any benefits/bonuses should be crop-neutral, unless there are some urgent reasons to promote a particular crop. Otherwise this will destroy natural process of diversification in the production basket, lead to monoculture, damage the soil health, and also go against the needs of the nation which is short of edible oils and pulses.

### High State Taxes

- 2.16 As observed earlier, a major contribution of increasing procurement incidentals to FCI are the high rates of statutory levies imposed by some states, which vary from 0-1 per cent in Gujarat to 14.5 per cent in Punjab (Table 2.2). In addition to mandi tax and VAT, cesses are also levied in most states for Infrastructure Development (ID) and Rural Development (RD), all of which will have a cascading effect on prices and increase costs of procurement. Since revenues from the above taxes/levies accrue to state governments, it is therefore expected that more state governments will tap on this, as for instance, Odisha, which increased the total taxes/cesses levied from 8.5 per cent last year to 12 per cent this year. Andhra Pradesh also increased its taxes/levies by 1 per cent to 13.5 per cent. These taxes also drive out the private sector with the result that the entire stock of foodgrains has to be bought by the Government. As the costs of operations are higher, it leads to wastage of economic resources with the marginalization of the farmers in the states where the procurement infrastructure is weak (especially in the eastern belt for paddy). Also, in the international export market, the efficiency of farmers is blunted by these high taxes, thus lowering India's competitiveness.

<sup>12</sup> Termed 'Production Incentive' in Tamil Nadu



**Table 2.2: Major States Imposing Taxes/Levies\* (as % of MSP) (KMS 2013-14)**

States	Rice	Paddy
Andhra Pradesh	13.5	5
Bihar	6.5	3.5
Chhattisgarh	9.7	10.7
Gujarat #	0-1	
Himachal Pradesh	5	1
Haryana	11.5	11.5
Jharkhand	3.5	1
Karnataka	1.5	
Kerala	1	
Madhya Pradesh	4.7	4.7
Maharashtra	1.05	1.05
Odisha	12	12
Punjab	14.5	14.5
Rajasthan	3.6	
Uttar Pradesh	8.5	9
Uttarakhand	7.5	7.5
West Bengal	3	3

Note: \*- includes Market Fee, APMC Cess, Arthiya Commission, Dami, Commission to societies/Agents, Mopari Charges etc.; # - There are district wise variations of market fees in Gujarat – ranging from 0-1 per cent.

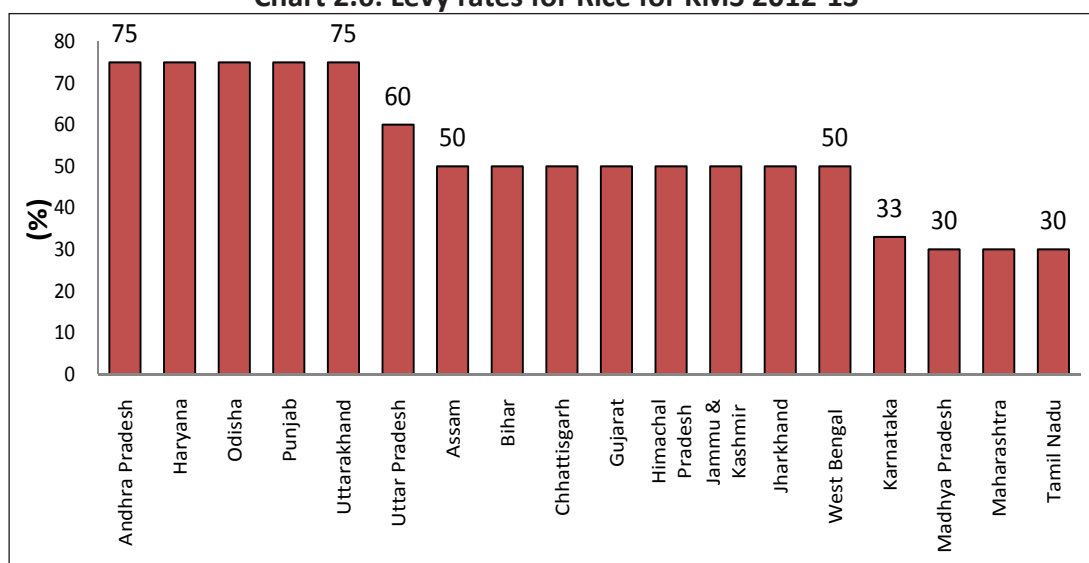
Source: FCI

## Levy Rice

2.17 Another market distortion is the system of levy rice that is in practice. Rice is procured for the Central Pool under statutory levy system on rice millers. The State Governments/UT Administrations issue Levy Orders in exercise of the powers delegated to them under the Essential Commodities Act, 1955 after obtaining the prior concurrence of Central Government. The percentage of levy varies from State to State (Chart 2.6). In 19 of the 23 states/UTs imposing this levy, this is more than 50 percent leaving little rice for the open market. In recent years, the quantities procured under the levy order are declining as many state governments do not enforce the order.

*Levy rates for rice in most states are more than 50% leaving little rice for the open market*

**Chart 2.6: Levy rates for Rice for KMS 2012-13**



Source: FCI

## Stock Limits and Licensing Requirements

2.18 In addition, control orders that broadly relate to licensing of dealers, regulation of stock limits, restrictions on movement of goods and compulsory purchase under the system of levy are other forms of market distortion. The Essential Commodities Act 1955 (ECA), was enacted to ensure the easy availability of essential commodities to consumers and to protect them from exploitation by unscrupulous traders. The Act provides for the regulation and control of production, distribution and pricing of commodities which are declared as essential for maintaining or increasing supplies or for securing their equitable distribution and availability at fair prices. While the role of state was important during periods of scarcity, its continuation and extension even during years of plenty, such as during the current times, is proving to be counterproductive.

2.19 Keeping in view the comfortable availability of food products, the Central Government in exercise of the powers conferred by section 3 of the ECA issued orders on 15.02.2002<sup>13</sup> and 16.06.2003<sup>14</sup> removing the licensing requirements, stock limits and movement restrictions on specified foodstuffs; thus allowing the dealers<sup>15</sup> to freely buy, stock, sell, transport, distribute, dispose, acquire, use or consume any quantity in respect of specified foodstuffs, namely, rice/paddy,

*Extension of ECA prevents development of vibrant markets*

<sup>13</sup> Removal of Licensing Requirements, Stock Limits and Movement Restrictions on Specified Foodstuffs, 2002.

<sup>14</sup> Removal of Licensing Requirements, Stock Limits and Movement Restrictions on Specified Foodstuffs (Amendment) Order, 2003.

<sup>15</sup> Dealer means any person engaged in the business of purchase, movement, sale, supply, distribution or storage for sale of any of the commodities specified in clause 3 of the Order, directly or otherwise, whether as a wholesaler or retailer and whether or not in conjunction with any other business and his representative or agent. This definition was expanded in the Amendment Order issued in 2003, as follows: 'Dealer' means any person engaged in the business of purchase, movement, sale, supply, distribution or storage of any of the commodities specified in clause 3, directly or otherwise, whether as wholesaler or retailer or producer or manufacture or exporter or importer and whether or not in conjunction with any other business and includes his representative or agent but does not include a producer or manufacturer or importer or exporter of sugar.

*Stock limits exist for pulses, edible oils & edible oilseeds, rice and paddy*

wheat, coarse grains, sugar, edible oils and oilseeds<sup>16</sup>, pulses, gur, wheat products (namely, maida, rava, suji, atta, resultant atta and bran) and hydrogenated vegetable oil or vanaspati<sup>17</sup>. The aim was to facilitate free trade and movement of commodities, which would enable farmers to get better prices for their produce, achieve price stability and ensure availability of commodities specified in the Order at fair prices throughout the country.

- 2.20 However, in the context of rise in prices of some essential commodities in 2003-04 and widespread concern on speculative hoarding of stocks, these orders were kept in abeyance for a period of six months only initially with respect of wheat and pulses with no restrictions on inter-state movement and import of these two items<sup>18</sup>. This was periodically extended through notified Amendment Orders in respect of wheat, pulses, edible oils, edible oilseeds, rice, paddy and sugar enabled the State Governments to fix stock limits for these commodities and also prescribe licensing. An abridged time line of the EC Act (Amendment Orders) since 2002 till date is shown in table 2.3. At present stock limits are permitted for pulses, edible oils and edible oilseeds for a period upto 30.9.2013 and in respect of rice and paddy upto 30.11.2013.

**Table 2.3: Time line of EC Act 1955 (Amendment Orders) 2002-2012**

Date from which effective	Commodities covered (clause 3)	Up to
15.3.2002	Wheat, paddy/rice, coarsegrains, sugar, edible oilseeds and edible oils	
15.7.2003	Above + pulses, gur, wheat products (namely, maida, rava, suji, atta, resultant atta and bran) and hydrogenated vegetable oil or vanaspati	
29.8.2006	Wheat	1.4.2009
29.8.2006	Pulses	30.9.2013
7.4.2008	Edible oils, edible oilseeds	30.9.2013
7.4.2008	Rice	30.11.2013
1.9.2008	Paddy	30.11.2013
9.3.2009	Sugar	30.11.2011

Source: Department of Consumer Affairs

Note: Details available on [www.consumeraffairs.nic.in](http://www.consumeraffairs.nic.in)

- 2.21 A total of 23 states/UTs have fixed stock limits on one or more commodities, and another 4 states/UTs have put only licensing/stock declaration requirements. While 3 states have fixed stock limits on paddy, 6 have fixed for rice, 22 for pulses, 16 for edible oilseeds and 19 for edible oils. While states like Andhra Pradesh, Jharkhand and Maharashtra have fixed stock limits for all 5 commodities,

<sup>16</sup> Covered in 2002 Order

<sup>17</sup> Added in 2003 Order

<sup>18</sup> Removal of (Licensing Requirement, Stock Limits and Movement Restriction on Specified Foodstuffs), Amendment Order, 2006, which was notified on 29.08.2006

Kerala, Madhya Pradesh and Rajasthan have imposed only on pulses, although Rajasthan has in addition, specific stocking limits on gram; other states have fixed for 2-4 commodities. However, there are no restrictions on inter-state movement and on imported foodgrains, provided the wholesaler or retailer or dealer demonstrates that the stocks in respect of any of the commodities were sourced from imports. Despite this, it is observed that some state governments have at different times imposed restrictions on inter-state movement of foodgrains. In addition, owing to difficulties in proving the imported status of goods, it is reported that wholesalers and retailers are unable to use the exemption provision available for imported goods.

## APMC Act

2.22 Agricultural Markets in most parts of the country are established and regulated under the State Agricultural Produce Market Committees (APMC) Acts. The monopoly of Government regulated wholesale markets have prevented development of a competitive marketing system in the country and establishing effective linkages between farm production and retail chains. Accordingly, a model APMC Act was formulated by the Ministry of Agriculture in 2003. There are seven vital areas of reform that have been identified:

- (i) Establishment of private market yards/private markets managed by a person other than a Market Committee.
- (ii) Establishment of private yards and direct purchase of agricultural produce from agriculturist by a person other than a Market Committee (Direct purchasing from producer).
- (iii) Single registration/license for trade transaction in more than one market.
- (iv) Provision of Contract Farming.
- (v) Promote and encourage e-trading.
- (vi) Single point levy of market fee.
- (vii) Establishment of consumer/farmers market by a person other than Market Committee (Direct sale by the producer to the consumers).

2.23 Different states are in varying stages of progress. States like Tamil Nadu have completely reformed the APMC Act, while Bihar has repealed the same. In the latter case, while all market barriers have been removed, dynamic efforts to develop infrastructure to facilitate trade is lacking. States/ UTs of Kerala, Manipur, Andaman & Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu, and Lakshadweep do not have APMC Act.

2.24 A step towards establishing a single market requires the Central Orders dated 15.2.2002 and 16.6.2003 issued under the EC Act to be revived so as to remove the licensing requirements, stock limits and movement restrictions on specified foodstuffs. In addition the levy order must also be withdrawn. These orders have their origins in situations like war, natural calamities that disrupt or threaten to disrupt supply of such essential commodities through normal trade channels and thus require Central Government's intervention. They are thus anachronistic in the current scenario and must be removed to facilitate free trade and

*Model APMC Act needs to be urgently adopted for creation of competitive markets and efficient supply chains*



movement of commodities, which would enable farmers to get better prices for their produce, achieve price stability and ensure availability of commodities at fair prices throughout the country. The First Report of Committee of State Ministers in-charge of agriculture marketing to promote reforms, April, 2011 has also recognized this and states that, *'Due to the restrictive provisions of the ECA and various control orders issued there under, private investment in large scale storage and marketing infrastructure including in the areas of contract farming, direct marketing have not been very encouraging.'*

## **Degree of Market Distortions and Ranking of States**

- 2.25 An exercise was undertaken to study the degree of market distortions prevalent in the paddy/rice markets in 18 states of Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Odisha, Punjab, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal. Since the exercise was confined to paddy/rice, only those states that provide cost data for paddy under the CS scheme were selected.
- 2.26 Six parameters were considered: Taxes/cesses levied (as percent of MSP); additional bonus announced; rice procured (as percent of rice production); stock limits fixed on rice and paddy; levy rice (as per cent of rice milled by millers) and market reforms under APMC Act carried out in states. States were ranked on the basis of the extent to which prevalent state policies impacted on the market. The methodology adopted to study the degree of market distortions prevalent in the paddy/rice markets in India is explained in Annex 2.3.
- 2.27 A simple ranking was done of the 18 states on each of the six parameters. States were ranked from 1 to 18 with the first rank denoting the best. A simple average of the ranks for each state was then calculated. The states were then grouped into 3 bands – Band 1-5 denoting the top five (green) states; Band 6-10 indicating the next five (amber) states; and Band 11-18 including the bottom eight (red) states. This exercise reveals the relative status of each state with respect to the level of 'market friendly' policies adopted. It emerges that in the case of paddy/rice markets, the 'green' (top five) states are Gujarat, Assam, Himachal Pradesh, Bihar and Kerala. They are followed by (next five) 'amber' states of Tamil Nadu, Karnataka, Maharashtra, West Bengal and Jharkhand. The most distorted (bottom eight) markets (in ascending order of market distortions) are Uttarakhand, Madhya Pradesh, Uttar Pradesh, Odisha, Haryana, Punjab, Andhra Pradesh and Chhattisgarh. The ranking of the states and the comparative zones they fall into, from 'green' (relatively free market) to 'red' (distorted market), are shown in table 2.4. Thus, according to this exercise Gujarat was most market friendly and Chhattisgarh, the most distorted state with respect to paddy/rice market in India.

**Table 2.4: Ranking of major states according to distortions created in paddy/rice market**

States	Taxes/Levi es on Rice (as % of MSP)	Bonus on Paddy	Rice Proc as % share in Rice prod	Stock Limits (Paddy & Rice)	Levy Rice	Market Reforms	Average Rank (col 2+3+4+5 +6+7)/6	Final Rank
1	2	3	4	5	6	7	8	9
GUJARAT	1	1	1	1	1	4	1.5	1
ASSAM	1	1	1	1	7	7	3	2
HIMACHAL PRADESH	9	1	1	1	7	4	3.8	3
BIHAR	11	1	9	1	7	1	5	4
KERALA	4	18	11	1	1	1	6	5
TAMIL NADU	1	14	7	16	1	1	6.7	6
KARNATAKA	6	16	4	1	6	7	6.7	7
MAHARASHTRA	4	1	6	18	4	7	6.7	8
WEST BENGAL	7	1	8	1	7	17	6.8	9
JHARKHAND	8	1	5	15	7	7	7.2	10
UTTARAKHAND	12	1	15	1	14	4	7.8	11
MADHYA PRADESH	9	15	14	1	4	12	9.2	12
UTTAR PRADESH	13	1	10	1	13	17	9.2	13
ODISHA	16	1	12	1	14	15	9.8	14
HARYANA	15	1	16	1	14	15	10.3	15
PUNJAB	18	1	17	1	14	14	10.8	16
ANDHRA PRADESH	17	1	13	17	14	7	11.5	17
CHHATTISGARH	14	17	18	1	7	12	11.5	18

2.28 Above eight states with most distorted markets with respect to paddy & rice procured about 62 percent of total marketed surplus of rice in 2011-12. Thus, the magnitude of distortion in the rice & paddy markets is clearly evident.

## Recommendations

2.29 This report's main focus is on 'getting the markets right', on bringing the focus back to establishing a single barrier free market, with minimum controls. However, the disparate policies adopted at the Centre and some states as discussed in the above paragraphs have cumulatively led to market distortions. The Commission recommends the following to enable markets to function efficiently:

- (i) State governments need to facilitate setting up adequate infrastructure such as storage facilities by the private sector, milling capacities; they also need to be discouraged from embarking on a high procurement mission, as it is detrimental to the competitive functioning of the product markets, and discourages private sector participation. State should come only as a last resort where the markets fail, and not take over the functioning of markets as a first step.

- (ii) The Commission reiterates its recommendation that the government reviews its policy of following an open-ended procurement and limit its purchases to say only 75 percent of last year's purchases, especially from States which levy bonus/high taxes. In this context there is also need to assess and indicate the exact quantum of procurement required to be made each year.
- (iii) Revisit the need for EC Act, which is an anachronism in the current context of ample foodgrains. On similar lines, reduce and abolish the levy order on rice, which is dysfunctional in some states, over a three year horizon.
- (iv) Get states to either repeal or reform their APMC Act in its various dimensions, especially with respect to the freedom to buy directly from farmers and have private agricultural markets. In states where it is repealed, like Bihar, the state needs to invite the private sector to build markets, say under Public-Private Partnership (PPP) mode, with a view to ensure that markets can function smoothly, efficiently, and in a transparent manner. This would be only in line with the objective of efficient governance and regulation.

## Chapter 3

### India's Trade Competitiveness

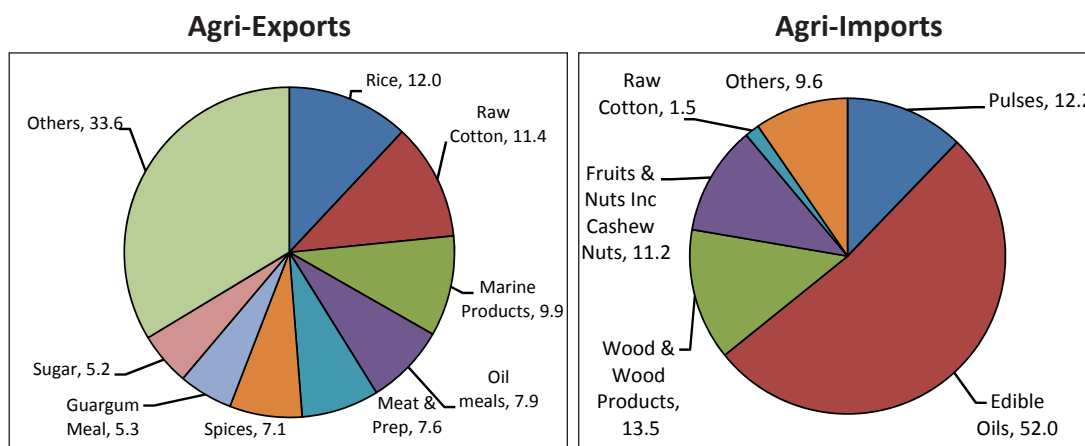
- 3.1 The temporal behavior of India's exports and imports shows that India has consistently remained a net exporter of agri-products during the last two decades. Agri-exports have increased more than ten times from US\$ 3.5 billion in 1990-91 to US\$ 37.1 billion in 2011-12. Agri-Imports have increased from US\$ 0.7 billion in 1990-91 to US\$ 17.2 billion in 2011-12. Indian agriculture has increasingly integrated with the world markets as measured by agri-trade as percentage of agri-GDP. The agri-trade (exports plus imports) as a percentage of agri-GDP, which was about 5 percent in 1990-91, when economic reforms started in India, is today more than three times of that, touching 18 percent in 2011-12. India's share in total global exports of agri products has increased from 0.8 percent in 1990 to 2.1 percent in 2011. This share is more than the share that India has in global merchandise exports i.e 1.7 percent in 2011 (0.6 percent in 1990). Thus, India has an inherent competitive advantage in agri-products.
- 3.2 During triennium average ending (T.E) 2011-12, rice was the leading agriculture export product (with a share of 12.0 percent) closely followed by raw cotton (11.4 percent), marine products (9.9 percent), oil meals (7.9 percent), meat & preparations (7.6 percent), spices (7.1 percent), guar gum meal (5.3 percent) and sugar (5.2 percent). India has emerged as the largest exporter of rice in 2012 and a leading exporter of cotton and maize. In terms of agri-imports,

*India has consistently remained a net exporter of agri-products during the last two decades*



edible oils (accounting for 52.0 percent in TE 2011-12), wood & wood products (13.5 percent) and pulses (12.2 percent) cornered three-fourths of the total. (Chart 3.1).

**Chart 3.1: Composition of India's Agri-Exports & Agri-Imports, TE 2011-12**



Source: Agricultural Statistics at a Glance, various issues & Department of Commerce

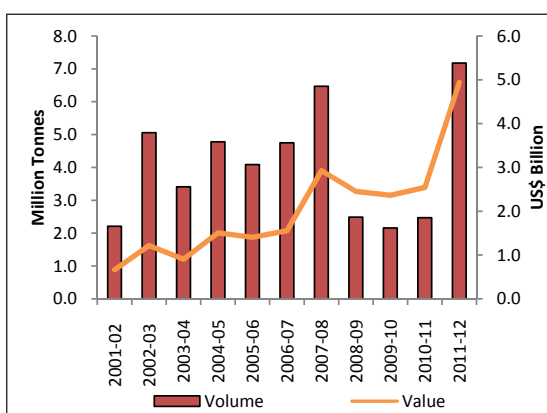
*India's agri-export policy for most of the commodities has been a residual policy*

- 3.3 India's agri-export policy for most of the commodities has been a "residual policy". Any actual or perceived shortage of any essential commodity impacting domestic price adversely makes the Government use trade, tariff and administrative means to contain pressure on prices in the market. Trade in agri-products can expand further if our trade policy is more open, liberal, neutral and stable. Efficiency gains from trade can be tapped not only by exporting commodities in which we have competitive advantage but also importing those where we don't have competitive edge. This also helps the domestic production to restructure itself in line with global comparative advantage. But trade competitiveness is a dynamic phenomenon, which would vary depending upon the changes in international and domestic prices consequent upon demand and supply of commodities, as well as by changing technologies impacting costs of production and market conditions. In its simplest form trade competitiveness can be measured by comparing domestic prices with its export/import parity reference price measured over a period of time, which in turn is derived by deducting/adding freight, port handling, margins etc from the fob/cif price of that commodity. If domestic price of any commodity is lower than the export/import parity reference price, then the commodity is export/import competitive. In the absence of reliable data on transport and other charges, an attempt has been made to compare the domestic and international prices of major agri crops over the last decade to get an idea of the alignment between them, which can also help shaping the domestic MSP policy to ensure that domestic prices are not very much out of line with global price vector of important agri-commodities.

## CEREALS - Rice

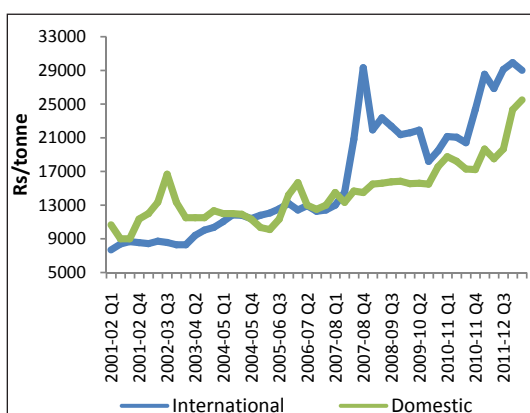
3.4 India's export of rice has fluctuated between 2.2 million tonnes to 7.2 million tonnes during the period 2001-02 to 2011-12 (Chart 3.2). Domestic wholesale prices have been lower than international prices especially during the last six years (Chart 3.3). As exports of non-basmati rice were banned since April 2008, Indian farmers could not exploit this price competitiveness. Since exports of non-basmati rice have been opened from September, 2011, India exported record 7.2 million tonnes in FY 2011-12 and has already exported 7.5 million tonnes in Apr-Dec, 2012-13. As per FAO, India emerged as the world's largest exporter of rice in calendar year 2012.

**Chart 3.2: India's Exports of Rice from 2001-02 to 2011-12**



Source: DGCI&S

**Chart 3.3: International vs Domestic Prices of Rice**



Source: World Bank for International Price for Rice (Thailand), 25% broken, f.o.b. Bangkok; Domestic prices for Rice have been taken from Amritsar, Punjab taken from State reply

3.5 Exports of non-basmati rice from the country was banned vide DGFT Notification dated 15.10.2007. However, vide DGFT notification dated 31.10.2007, the ban on export of non-basmati 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 largest rice exporter since then. Regarding imports, import duties of 80 per cent for husked rice & broken rice and 70 per cent for milled and semi-milled rice were imposed on April 1,

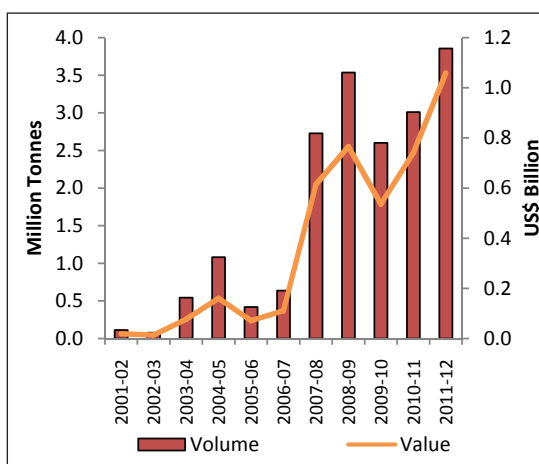
*India emerged as world's largest exporter of rice in 2012 but has 70-80% import duties on rice*

2000. In view of tight position of rice in the domestic market, import duty on milled and semi-milled rice was reduced to zero per cent from 01.03.2008 to 31.03.2009. The Government withdrew the full exemption on import duty and imposed a basic customs tariff of 70 per cent on semi-milled or wholly milled rice on 31.03.2009. 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 are totally unnecessary. It will be only in the fitness of trade realities that these import duties are slashed to 5-10 percent.

## COARSE CEREALS – Maize (Corn)

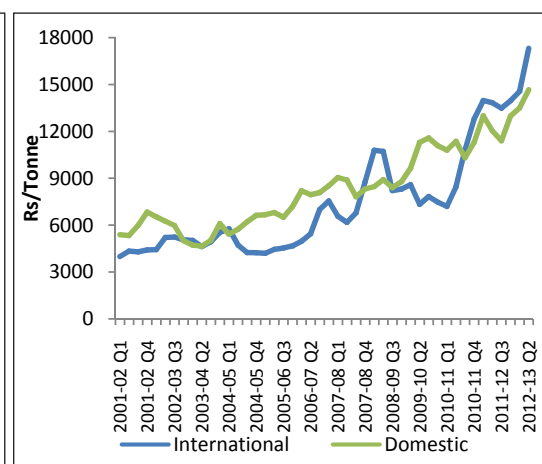
- 3.6 India's exports of maize have increased from a comparatively low quantity of 0.1 million tonnes in 2001-02 to 3.9 million tonnes in 2011-12 (Chart 3.4), in response to rising production after 2006-07. Since 2005, India introduced single cross hybrid varieties of corn which helped raise corn yields. Domestic wholesale prices of maize have been broadly in line with the international prices till 2010 (Chart 3.5). In recent years, international prices have risen and India exported a record 3.9 million tonnes in FY 2011-12 and 3.1 million tonnes in Apr-Dec, 2012-13.

**Chart 3.4: India's Exports of Maize from 2001-02 to 2011-12**



Source: DGCI & S

**Chart 3.5: International versus Domestic prices of maize**



Source: World Bank for International Price of corn, US No.2 yellow, fob, US Gulf Ports and DES for domestic Price of Karnataka

India exported 3.9 million tonnes of maize in 2011-12 but restricts imports with 50% import duty

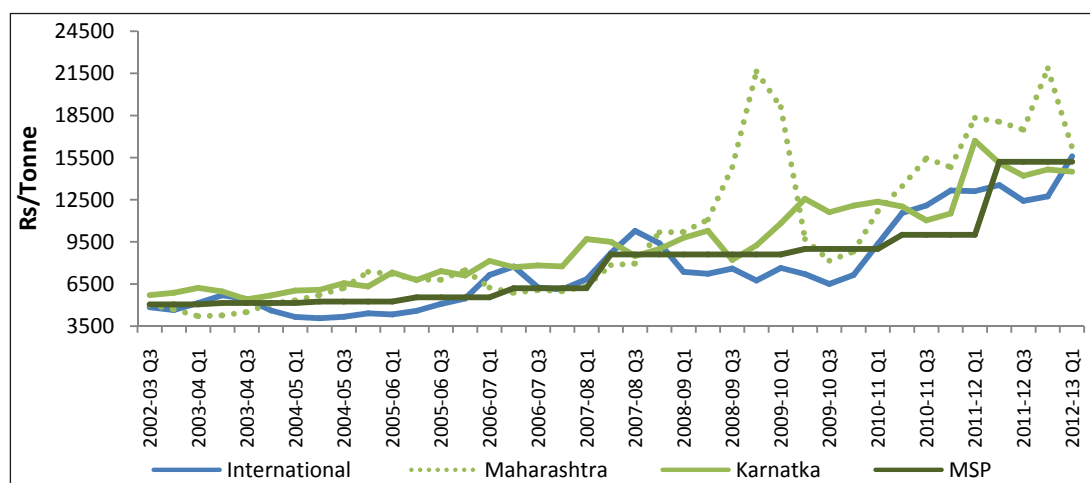
- 3.7 Quantitative ceiling on export of maize was removed vide DGFT notification dated 5.3.2002. Export of maize (corn) was prohibited vide DGFT notification dated 3.7.2008 for a brief period up to 15.10.2008. Export of maize is free with effect from 16.10.2008. The Government of India, vide DGFT notification dated 12.6.2000, introduced a Tariff Rate Quota (TRQ) for maize imports, as part of its agreement with WTO. The maize TRQ was set at 3,50,000 tonnes

in a financial year with 15 per cent in quota duty and 50 per cent import duty over the quota. 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 (corn) imports was raised to 4,00,000 tonnes vide DGFT notification dated 1.3.2001, 4,50,000 tonnes vide DGFT notification dated 1.3.2002 and 5,00,000 tonnes vide DGFT notification dated 4.4.2003. Import of maize, under TRQ, was allowed at zero import duty vide DGFT notification dated 25.1.2007. Import duty on maize outside TRQ Scheme continues to be at 50 per cent. Thus, exports of maize are free while imports are restricted with 50 percent duty creating a pro-producer policy.

## COARSE CEREALS-Jowar (Sorghum)

3.8 India's exports of Jowar increased from a negligible quantity of 0.4 thousand tonnes in 2001-02 to a high of 90.37 thousand tonnes in 2008-09 and then declined to 40.7 thousand tonnes in 2011-12. India's imports of jowar are nil. During the period from 2002-03 (Q3) to 2012-13 (Q1), the domestic wholesale prices of jowar (yellow) in Maharashtra and Karnataka have been generally higher than the international prices (Chart 3.6). India's exports are mainly to the neighbouring countries like Pakistan and Sri Lanka and the countries such as UAE, Yemen, Saudi Arabia, Kenya, Eritrea and Malaysia which are comparatively nearer to India than the main competitor USA. So the difference in freight charges is making it possible for India to export jowar to these countries.

**Chart 3.6: International vs Domestic prices of Jowar**



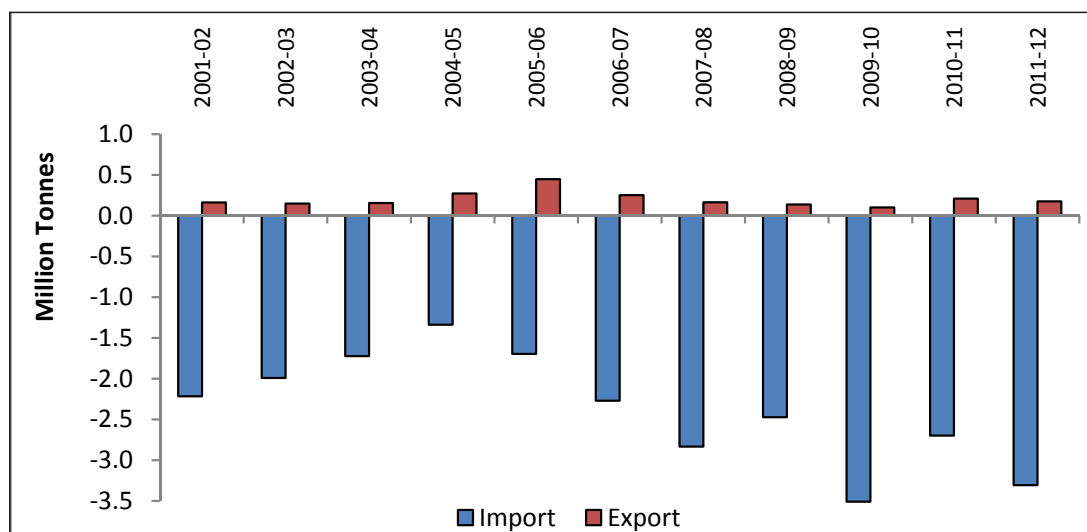
Source: World Bank pink Sheet for international Price for Sorghum (US), No. 2 milo yellow, f.o.b. Gulf, Agmarknet for Domestic price of Jowar yellow variety in Maharashtra and Karnataka and CACP for MSP of Jowar (Maldandi).

3.9 The Government imposed import duty of 50 per cent on Jowar vide DGFT notification dated 5.4.2000. Quantitative ceiling on export of Jowar was removed vide DGFT notification dated 5.3.2002. Export of Jowar continues to be free. Thus, the pro-producer policy continues with respect to jowar too. This needs to change to a neutral stance with respect to producers and consumers for all agri-commodities.

## PULSES

3.10 India is the biggest producer as well as biggest importer of pulses in the world. India's imports of pulses have increased from 2.2 million tonnes in 2001-02 to 3.3 million tonnes in 2011-12. India's exports of pulses have fluctuated during the 2000s decade as shown in chart 3.7 as exports of pulses are banned (with some exceptions).

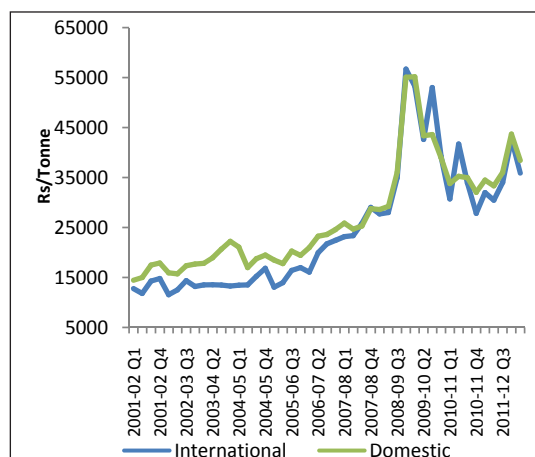
**Chart 3.7: India's Exports and Imports of Pulses (Volume)**



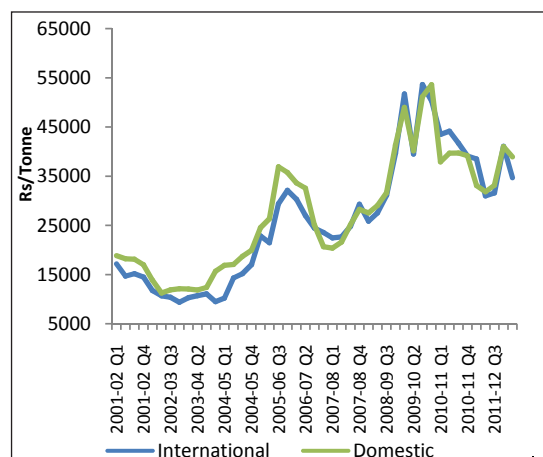
Source: DGCI & S

3.11 During the period from 2001-02 (Q1) to 2012-13 (Q1), the domestic wholesale prices of arhar (pigeon peas) and urad (black gram) have followed the trend line of international prices (Chart 3.8 & 3.9). During the same period, the domestic wholesale prices of moong (green gram) have been generally lower than the international prices and especially since 2007-08 (Q3) (Chart 3.10).

**Chart 3.8: International vs Domestic prices of Arhar**



**Chart 3.9: International vs Domestic prices of Urad**

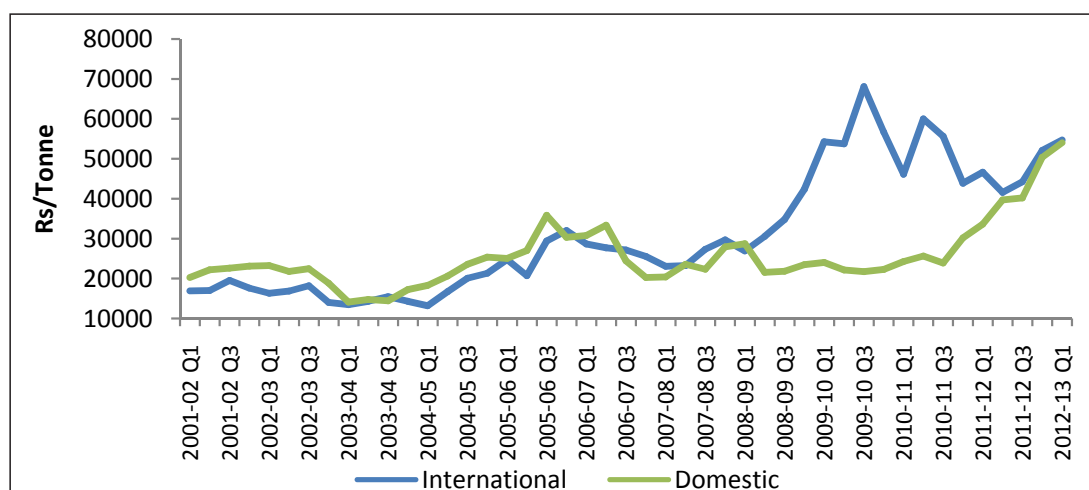


Source: NAFED

International and domestic prices of pulses are aligned with free imports allowed but exports of pulses are banned



**Chart 3.10: International vs Domestic prices of Moong**



Source: NAFED

3.12 Imports are permitted under OGL at zero duty since 8th June, 2006 – this is to ensure the availability of pulses at reasonable prices. Pulses exports from India, however, are prohibited since 27th June, 2006 except for kabuli chana (since 7.3.2007) and 10,000 tonnes of organic pulses (since 23.03.2011) & lentils (since 03.06.2011) per annum. This restrictive export policy along with free imports of pulses at zero import duty clearly shows a pro-consumer bias. This needs to change and exports need to be fully opened also to have a neutral trade policy for producers as well as consumers.

## OILSEEDS/EDIBLE OILS

3.13 India is the largest importer of edible oils which constitute more than half of its total agri-imports. A record 10 million tonnes of edible oil were imported in 2011-12 (Nov-Oct). Till mid 1990s, imports of edible oils were tightly controlled through canalization. In 1994–95, India introduced a phased liberalization of edible oil imports and import duties have been reduced to the levels of zero percent and 7.5 percent for crude oils and refined oils respectively with effect from 1st April, 2008. However, the import duty on crude edible oils has been increased to 2.5 per cent vide D/o Revenue Notification dated 23.1.2013. The effective rates of duty were even lower as the tariff value, the base price on which custom duty is determined, remained fixed since 31st July 2006. Only recently, the tariff value on imported RBD palmolein (since 1st August, 2012) and on other oils (on 15<sup>th</sup> February, 2013) have been revised by 4-5 percent in light of their current international prices. On the other hand, imports of oilseeds continue to be restricted with 30 percent import duty since 1.1.2003. Logically, the import duty is graduated from low on raw material to highest on refined product. The duty structure of 2.5 percent duty on crude edible oils and 7.5 percent duty on refined edible oils and high duty of 30 percent on import

*Imports of edible oils are free while exports are banned except certain exemptions*

of oilseeds defies economic sense. The import duty on oilseeds need to be reduced to 10 per cent, on crude oil 12.5 percent and on refined oil 15 percent, so that domestic edible oil industrials units, which have large surplus capacity, are able to import oilseeds at lower prices and are able to compete with the cheaper import of crude as well as refined edible oil in the domestic market.

- 3.14 Export of edible oils has been banned with effect from 17th March 2008, except (a) Castor Oil, (b) Coconut oil from all EDI Ports and through Land Customs Stations (LCS), (c) deemed export of edible oils (as input raw material) from 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, and (e) Edible oils produced out of minor forest produce. Export of edible oils in branded consumer packs of upto 5 kgs subject to a limit of 10,000 tons per year (increased to 20000 tons per year<sup>19</sup>) is allowed. This has been further relaxed with export of edible oils allowed in branded consumer packs of up to 5 kgs with a MEP of US\$ 1500 per tonne<sup>20</sup>. This has a pro-consumer bias, which needs to be changed and edible oil exports need to be fully opened for exports to have a neutral trade policy for consumers and producers/processors. It may be noted, however, that oilmeals are a major agri-export of India, and its export policy is open and liberal (though there is an import duty of 15% on imports of oilmeals).

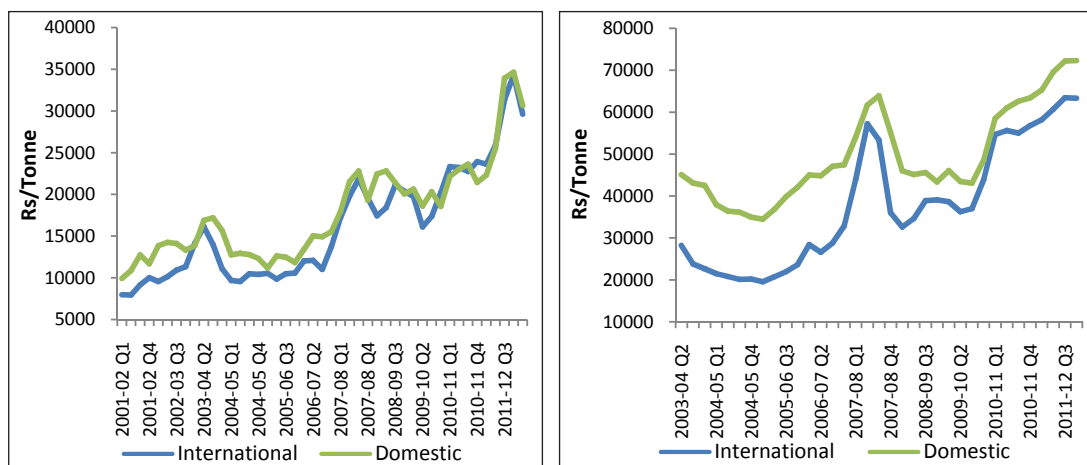
## Soyabean

- 3.15 International prices and domestic prices of soyabean have been in sync during the last ten years (Chart 3.11). Domestic prices of soyabean oil have remained higher than the international prices though the gap has been reducing over the years with the gradual reduction of import duties. India's imports of soyabean oil have declined from 1.1 million tonnes in 2001-02 to 0.9 million tonnes in 2011-12.

<sup>19</sup> Vide Notification dated 19.12.2012

<sup>20</sup> vide Notification dated 5.2.2013

**Chart 3.11: International vs domestic prices  
Soyabean Soyabean Oil**

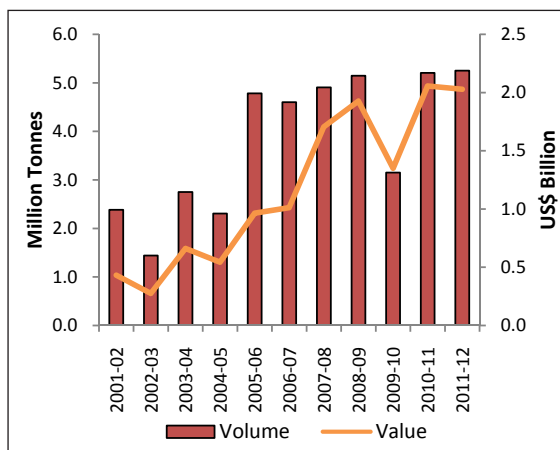


Source: ISTA Mielke GmbH, Oil World; USDA; World Bank for International Price of Soyabean Argentina f.o.b; NAFED replies & Agmarknet for domestic price (Avg. Price of M.P.); Solvent Extractors Association of India (SEAI) for domestic price quoted at Mumbai

3.16 India's exports of soyabean meal have more than doubled from 2.4 million tonnes in 2001-02 to 5.3 million tonnes in 2011-12 (Chart 3.12). During the period from 2001-02 (Q1) to 2012-13 (Q1), the domestic wholesale prices of soyabean meal have been higher than international prices of soyabean meal but follow the trend line of international prices (Chart 3.13). India's exports of soyabean meal are mainly to Asian countries which are nearer to India than the main competitors, Argentina and Brazil. So, the difference in freight charges makes it possible for India to export soyabean meal to these countries.

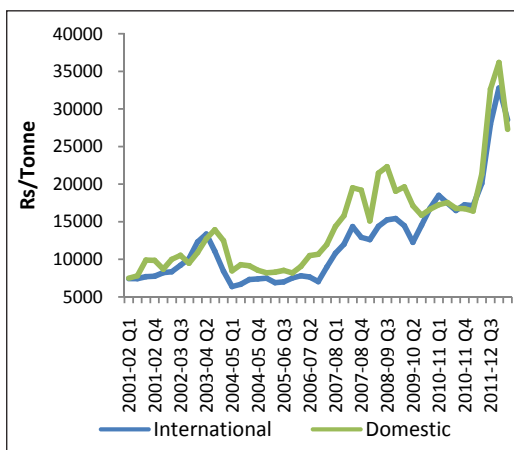
*India's exports of soyabean meal have more than doubled from 2.4 million tonnes in 2001-02 to 5.3 million tonnes in 2011-12*

**Chart 3.12: India's exports of soyabean meal from 2001-02 to 2011-12**



Source: DGCI & S

**Chart 3.13: Domestic wholesale prices vs international prices of soyabean meal**

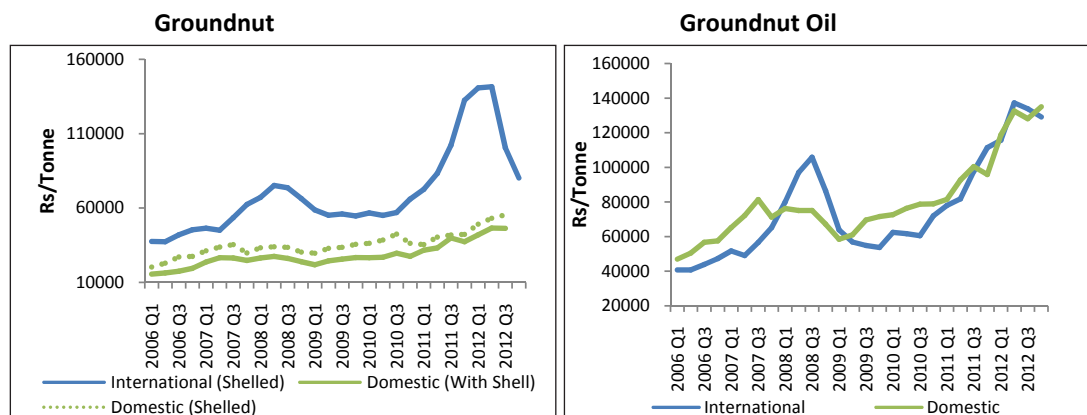


Source: USDA; for international price of Argentina Pellets, f.o.b. Up River; Reuters; SEAI for domestic price quoted at Mumbai

## Groundnuts (Peanuts)

3.17 India's exports of groundnuts have increased from 0.1 million tonnes in 2001-02 to 0.8 million tonnes in 2011-12. The domestic prices of groundnut have been much lower than the international prices (Chart 3.14). The domestic and international prices of groundnut oil have moved in sync with each other during last five years.

**Chart 3.14: International vs Domestic Prices**



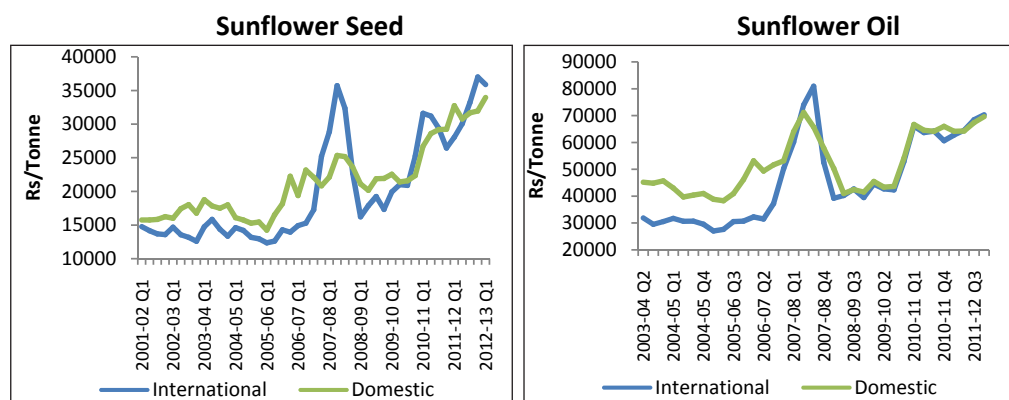
Source: World Bank, DES

Note: International prices of groundnuts (US), Runners 40/50, shelled basis, c.i.f. Rotterdam, and Groundnut oil, c.i.f. Rotterdam. Domestic prices have been calculated by averaging monthly data at Rajkot in Gujarat

## Sunflower

3.18 During the period from 2001-02 (Q1) to 2012-13 (Q1), the domestic wholesale prices have followed the trend line of international prices of sunflower seed (Chart 3.15). The gap between the domestic wholesale prices of sunflower oil and the international prices of sunflower oil has narrowed down after 2007-08 when free imports were allowed.

**Chart 3.15: International Vs Domestic Prices**



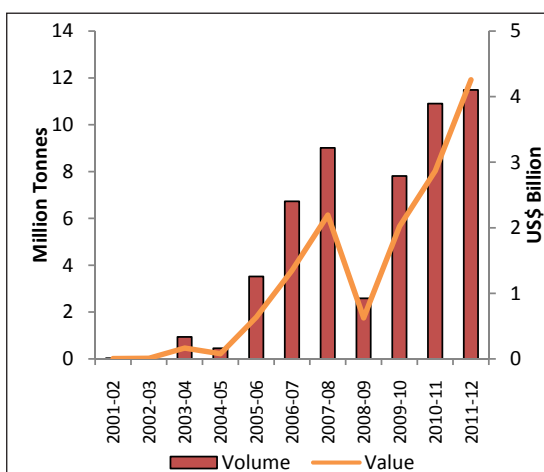
Source: USDA; for international price for Sunflower seed US Farm Price; USDA and EU f.o.b. NW Euro Ports; Oil World (Sunflower oil); NAFED replies and Agmarknet for domestic price of soyabean (Average Price of Maharashtra) & SEAI for domestic price of soyabean oil quoted at Mumbai

## FIBRES - COTTON

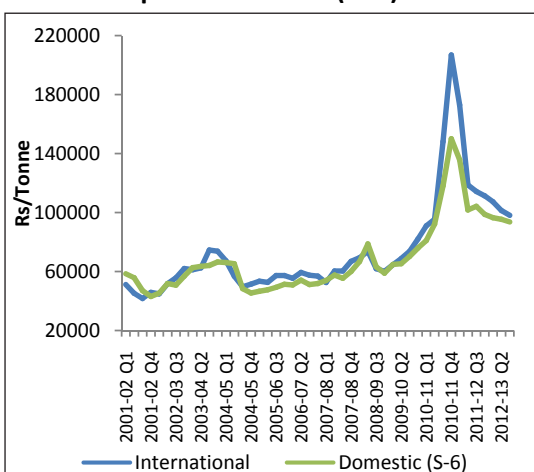
3.19 Imports of raw cotton accounted for 10.1 percent of total agri-imports in TE 2001-02 but now it is the second biggest agri-export accounting for 11.4 percent of total India's agri-exports in TE 2011-12. India has emerged as the world's second largest exporter of cotton. The transformation of cotton has been most spectacular with manifold increase in production, exports and declining imports- all being driven by the new Bt technology in cotton and newly found export markets in China. India's cotton exports have increased from only 0.03 million bales in 2001-02 to 11.5 million bales in 2011-12 (Chart 3.16). During the period from 2001-02 (Q1) to 2012-13 (Q1), the domestic wholesale prices of cotton have been lower than international prices (Chart 3.17).

*Cotton has transformed itself from being a large agri-import to second largest agri-export in a span of 10 years*

**Chart 3.16: India's Exports of Cotton**



**Chart 3.17: International vs Domestic prices of cotton (Lint)**



Source: DGCI & S ; World Bank for International prices -Cotton (Cotton Outlook "Cotlook A index"), middling 1-3/32 inch, c.i.f. and Cotton Corporation of India for domestic price of Cotton (Lint) Mumbai

3.20 Cotton exports from India during the nineties (and even in 1980s) were placed under quota restrictions. The government liberalized raw cotton exports since July 2, 2001 and placed the same under OGL. Since then, India has emerged as the world's second largest exporter of cotton. But recently, cotton exports were banned in mid-2010 and then export caps were placed for 2010-11. The quantitative restrictions on cotton exports were lifted in August, 2011 and exports of cotton were made free subject to registration of contracts with DGFT. India exported a record 12.9 million bales (of 170 kg each) in 2011-12 cotton season. On 5th March, 2012, cotton exports were suddenly banned with immediate effect. The ban was soon lifted but it was a reminder of the 'flip-flop' policy followed for agri-exports. These frequent policy changes not only cripple export performance of the country and lead to erosion of confidence of the International market for India as a regular supplier but also the farmers



from realizing a remunerative value for their produce, and thereby slow down investments and growth in agriculture.

- 3.21 Cotton has been imported under the OGL since April 1994. Till July 8, 2008, a custom duty of 10 percent and 4 percent special countervailing duty were levied on cotton imports. However, from July 8, 2008, duty on cotton imports was abolished, thus enabling the domestic textile mills to import cotton as per their requirements. So the cotton trade policy, to be neutral to farmers and textile mills (consumers) should be open ended and stable on exports as well as imports. If any need arises to protect consumers (textile mills) from spikes in global prices or farmers from troughs in global prices, it is suggested that a moderate duty should be imposed on exports/imports, whenever domestic prices cross the trigger points; abrupt bans only serve to distort markets.

## Recommendations

- 3.22 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. Exports of pulses and edible oils need to be opened up as well as import duties on rice, maize and other cereals need to be reduced, while those on edible oilseeds and edible oils need to be in line with economic rationality. This would promote resource use efficiency, generate surpluses and promote agri-growth. The guiding principle should be the alignment of the domestic and international prices along long-term trends while also guarding against sharp spikes and troughs through special safeguards. For such a policy to be operational, trigger points need to be identified for major crops. The Commission recommends setting up a working group with a view to operationalize such a policy.

*A consistent, open, neutral and stable agri-trade policy is need of the hour*

## Chapter 4

### Costs, Returns, Inter-crop Price Parity and Terms of Trade

- 4.1 At the outset, it is imperative to state that the cost of cultivation/production is a critical input, but not the sole one, for the Commission while arriving at its recommendations for the MSPs of its mandated crops. The Commission considers other equally important 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., in its price policy recommendations.
- 4.2 For preparing the price policy report of Kharif crops for 2013-14 season, the actual estimates of cost of production (CoP), generated under Comprehensive Scheme (CS) being implemented by DES, are available for the year 2010-11. As per established practice, the Commission prepares an Input Price Index based on the latest prices of different inputs like human labour, bullock labour, machine labour, manures, fertilizers, pesticides, irrigation charges, and seeds, based on latest data from different sources like Labour Bureau, 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. Based on this Input Price Index, the Commission, then makes projections for CoP likely to prevail in 2013-14 season.
- 4.3 Despite best methodology and assumptions, projections could turn out to be different than the reality, which will be known only after three years. Since 2012,

*Actual estimates of cost of production generated under CS are available for the year 2010-11*

Commission also introduced a correction factor (CF) based on the difference between actual and projected costs for three years, for which latest information is available. Continuing with a similar practice, in pursuit of improvising projections, the Commission looks into the changes in the CF and adjusts its projected costs accordingly. 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. This is presented below.

### Profitability of Kharif crops during 2008-09 to 2010-11

4.4 An analysis of the profitability and the rates of return over costs A2+FL and C2, for various crops during 2008-09 to 2010-11 – the latest years for which actual cost data is available is presented in Table 4.1.

**Table 4.1: All India Gross and Net Returns on actual estimates of cost of Cultivation of Kharif Crops for the years from 2008-09 to 2010-11**

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	22985.52	33696.94	38741.11	15755.58	68.55	5044.17	14.97
Maize	16815.64	23606.60	27051.21	10235.57	60.87	3444.60	14.59
Jowar	13363.71	18800.44	19162.52	5798.81	43.39	362.08	1.93
Bajra	10678.09	15048.51	16360.33	5682.24	53.21	1311.82	8.72
Ragi	14852.66	26745.93	21404.52	6551.86	44.11	-5341.40	-19.97
<b>PULSES:</b>							
Tur	16875.79	26287.73	34193.94	17318.15	102.62	7906.21	30.08
Moong	8953.40	12840.87	15631.52	6678.12	74.59	2790.65	21.73
Urad	10346.25	15621.03	19412.34	9066.09	87.63	3791.31	24.27
<b>OILSEEDS:</b>							
Groundnut	23675.27	32661.39	35061.52	11386.24	48.09	2400.12	7.35
Soyabean	14707.59	21480.54	25500.38	10792.80	73.38	4019.85	18.71
Sunflower	11822.50	14905.83	14086.64	2264.15	19.15	-819.18	-5.50
Sesamum	9616.52	14493.19	19310.30	9693.77	100.80	4817.11	33.24
Nigerseed	6124.67	9231.42	10249.14	4124.47	67.34	1017.72	11.02
<b>Cotton</b>	28351.83	42143.35	57454.83	29103.00	102.65	15311.48	36.33

Source: CS under implementation by DES

Note: 1. Comprehensive Scheme (CS): Actual estimates for the years 2008-09, 2009-10 and 2010-11 by states have been averaged at all-India level, with weights being their relative shares in total area of states.

2. 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.

3. C2 cost includes A2+FL cost, rental value of owned land, interest on fixed capital etc.

*Rate of gross return and net return is highest for cotton*

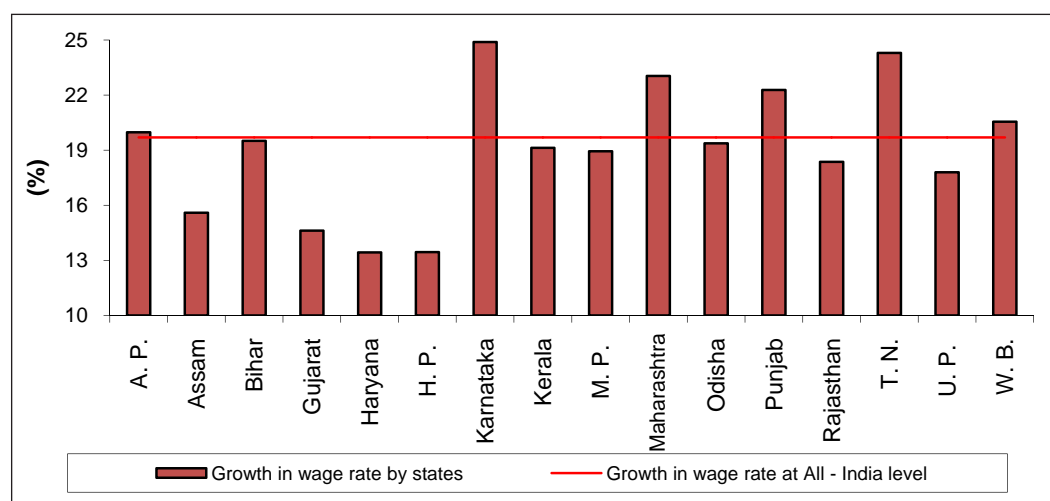
- 4.5 As is apparent from table 4.1, at all India level gross returns, i.e., absolute profit over A2+FL is maximum for cotton at Rs. 29103/ha followed by tur at Rs 17318.15/ha and the lowest for sunflower at Rs. 2264.15/ha. It may also be observed that rate of gross return, i.e., profitability over A2+FL is again highest for cotton at 102.65 percent. It is also equally interesting to observe that net return, i.e., profits over C2 cost is also highest for cotton at Rs. 15311.48/ha., and so is its rate of return over C2 (36.33%), while at the other extreme are ragi and sunflower with negative returns at -19.9 percent and -5.5 percent respectively. The details of state-wise returns for kharif crops during 2008-09 to 2010-11 are given in Annex table 4.1.

## Labour and Input Price Movement

- 4.6 As the cost on account of human labour is substantial in the total CoP, it is essential that an analysis is made of the likely increase in wage rate of agricultural labour. The latest data available from Labour Bureau, Shimla on agricultural wage rate is for the month of December, 2012. The increase in wage rate in percentage terms during December, 2012 compared to the corresponding month of previous year for different states is in the range of 0.8 percent to 45 percent. The highest wage rate increase is reported for Punjab at 44.5 percent and lowest wage rate increase for Odisha at 0.8 percent. In absolute terms, the highest wage rate for December, 2012 is reported from Kerala at Rs 461.3 per man day and it is worth noting here that almost all the reporting states have wage rates at least around Rs. 120 per man day (Annex. table 4.2). Preliminary observations of agricultural labour wage rate as given by Labour Bureau, Shimla are that it has gone up by 20 percent per annum over the last three years, i.e., during Jan-Dec 2009 to Jan-Dec 2012. The state-wise and All India details of increase in wage rate over the last three years are shown in Chart 4.1.

*Agricultural labour wage rate has gone up by 20 percent per annum over the last three years*

**Chart 4.1: Average Annual growth rate of agriculture labour wage rate (Rs/day) by states and at All-India level in Nominal terms (Jan-Dec 2009 to Jan-Dec 2012)**

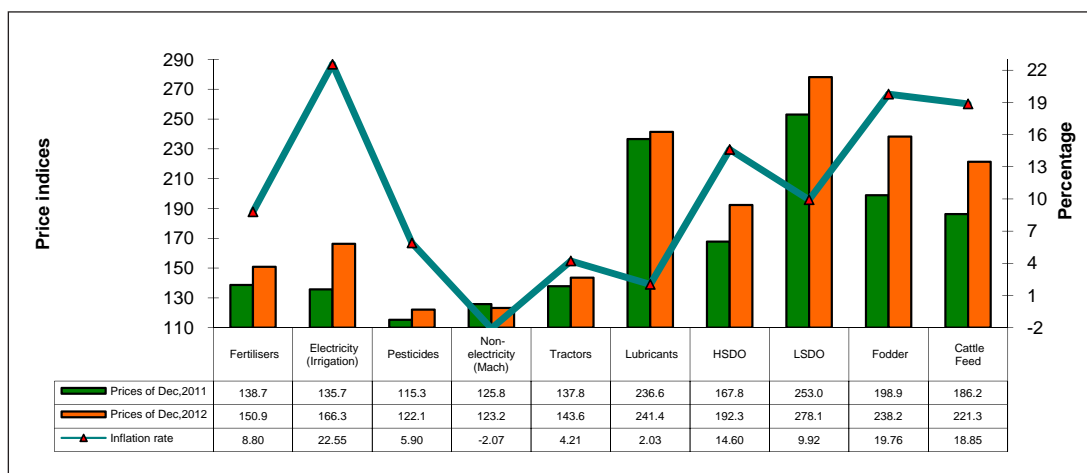


Source: Labour Bureau, Shimla



- 4.7 Wholesale Price Index (WPI) with base 2004-05 =100 for major farm inputs during the period December, 2011 to December, 2012 has shown an upward trend, except non-electrical machinery (with decrease of 2.1 percent). Fertilizers recorded increase of 8.8 percent, electricity for irrigation purposes by 22.6 percent, pesticides by 5.9 percent, tractor by 4.2 percent, lubricants by 2.0 percent, high speed diesel oil (HSDO) by 14.6 percent, light speed diesel oil (LDO) by 9.9 percent, fodder by 19.8 percent, cattle feed by 18.9 percent (details available in annex table 4.3).

**Chart 4.2: WPI and Percentage Increase in Prices of Farm Inputs  
(Dec 2012 over Dec 2011)**



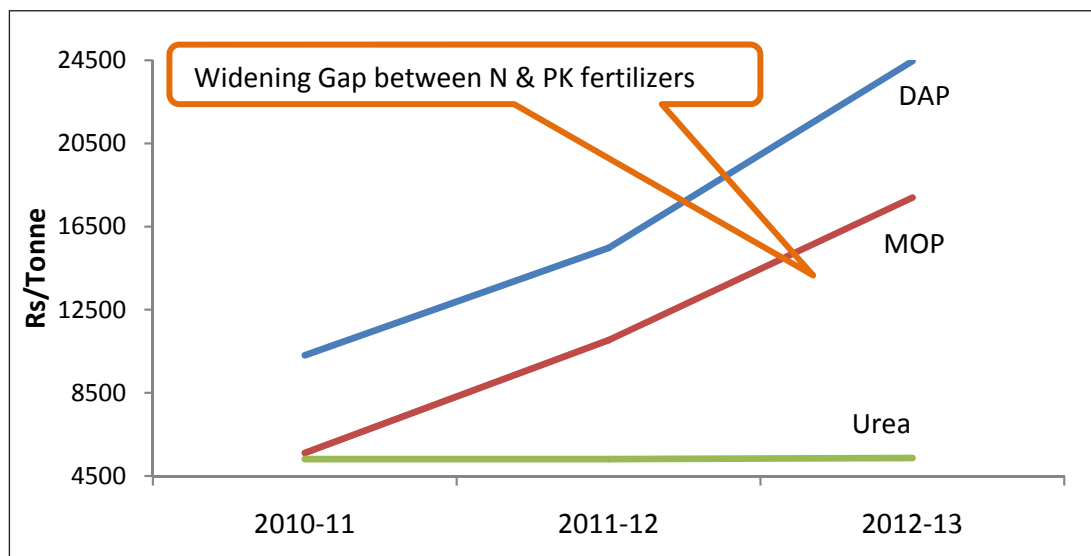
Source: OEA, DIPP

*Rs 19,783 crore could be saved by allowing direct cash transfer to farmers to purchase fertilizers in lieu of fertilizer subsidy*

- 4.8 It is worth noting here that fertilizer subsidy has increased by more than 5 times during the last 10 years. With the launch of the Nutrient Based Subsidy (NBS) scheme since 1<sup>st</sup> April, 2010, the retail prices for P&K fertilizers have been freed while the price of urea is statutorily fixed by the Government. As the price of urea has remained more or less fixed since then, the differential between the prices of urea and P&K fertilizers has widened (Chart 4.3). This has led to excess use of N at the expense of P&K fertilizers defeating the very objective of NBS to promote balanced use of nutrients. The Commission has calculated that an amount of Rs 19,783 crore could be saved by allowing direct cash transfer to farmers to purchase fertilizers in lieu of fertilizer subsidy and freeing up the fertilizer prices. This would give the right signals for a balanced use of NPK fertilizers, enhance productivity of agriculture, prevent leakages of subsidized fertilizers and incentivize the industry to become cost-efficient.



Chart 4.3: Relative Prices of Urea, DAP & MOP



Source: State Replies

Note: All India average has been calculated using state-wise consumption of various fertilizers as weights

## Cost projections for 2013-14 Crop Season

- 4.9 The latest data on actual estimates of cost of production for 14 major kharif crops of paddy, cotton, jowar, bajra, maize, ragi, tur, moong, urad, groundnut, soyabean, sunflower, sesasum, nigerseed have been made available to the Commission under the CS for the year 2010-11. The projections are made as per the methodology indicated in the earlier paragraphs. The details of actual cost estimates for 2010-11 compared to those of the previous year are available on the website of the Commission.
- 4.10 The projected cost for each crop varies widely across states. 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. Annex tables 4.4 outlines the projections for 2013-14 marketing season state-wise and at all India for different kharif crops.

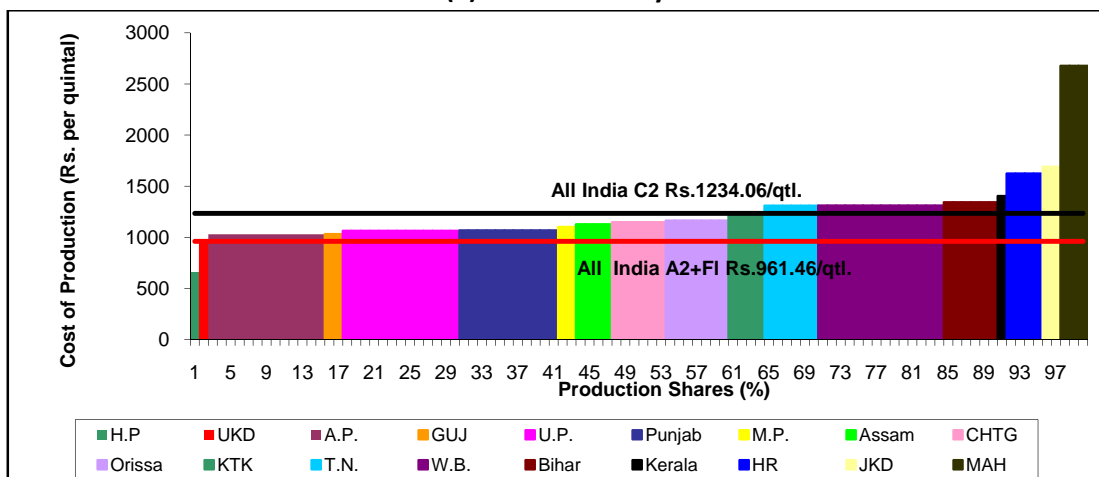
**Table 4.2: All India Projected Cost of Production (A2+FL & C2) of Kharif Crops for 2013-14 Marketing Season**

Crops	Cost of Production (Rs./qtl.)	
	A2+FL	C2
Paddy	961.46	1234.06
Jowar	1269.18	1648.41
Bajra	767.58	1002.84
Maize	859.55	1112.37
Ragi	1338.20	1687.05
Tur	3089.87	3957.67
Moong	3775.10	4758.69
Urad	3143.93	4111.87
Groundnut	2720.25	3397.49
Soyabean	1691.87	2215.60
Sunflower	3000.10	3679.36
Seasmum	2919.31	4133.89
Nigerseed	2279.05	3628.41
Cotton	2484.66	3532.66

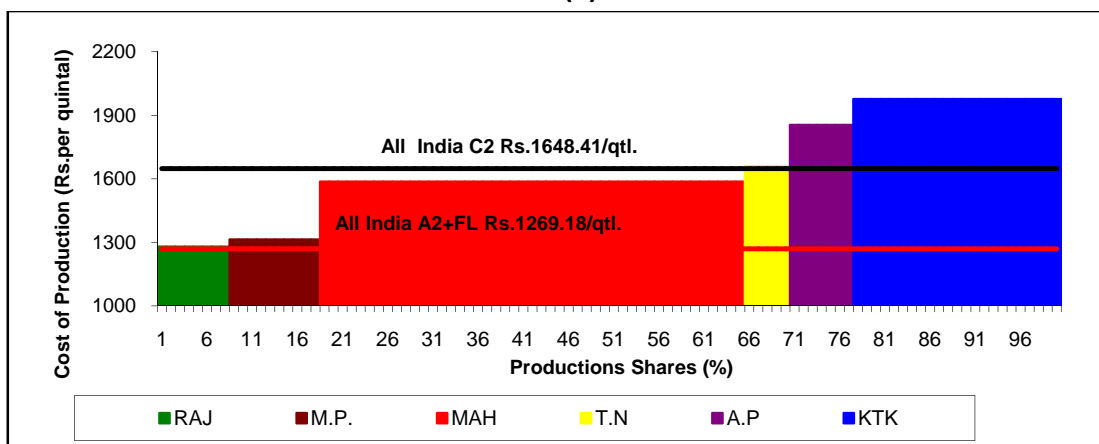
4.11 Chart 4.4 (a)to(m) represents the overall cost of production (C2) by states as well as all India level in increasing order of cost with their corresponding relative shares in total production for different kharif crops. These crop-wise charts illustrate the percentage of cost of major producing 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. 1234.06 per quintal which is covering cost of 60 percent of production of major producing states.

Chart 4.4: Projected Cost and Supply of Kharif Crops by States for 2013-14

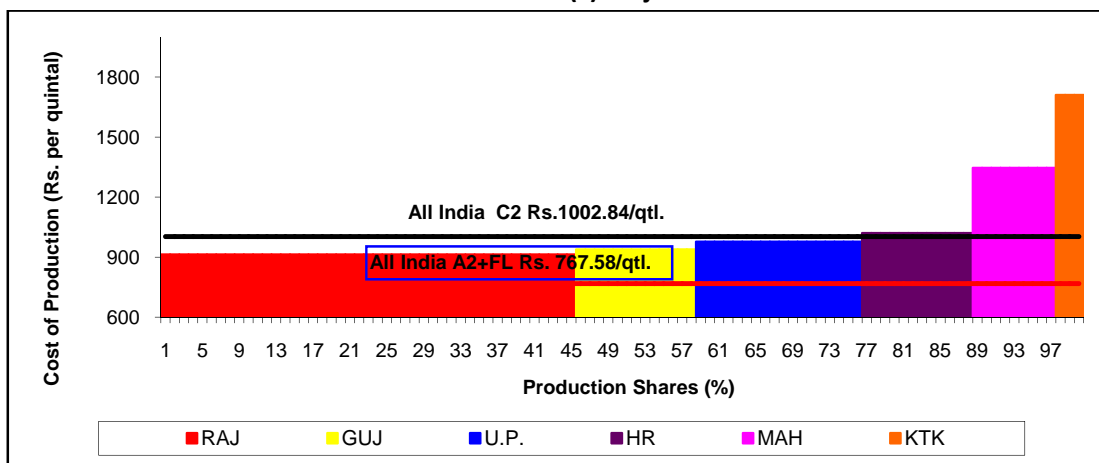
(a) Paddy



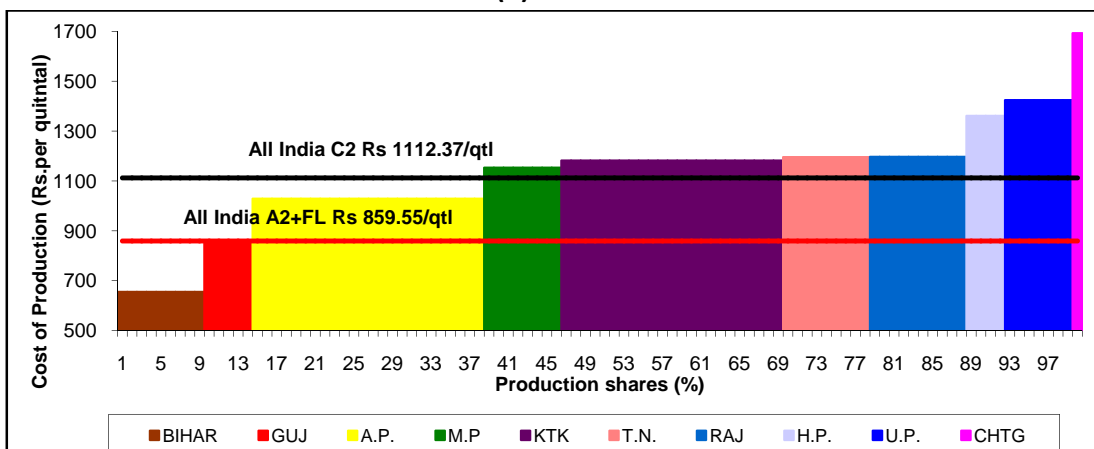
(b) Jowar



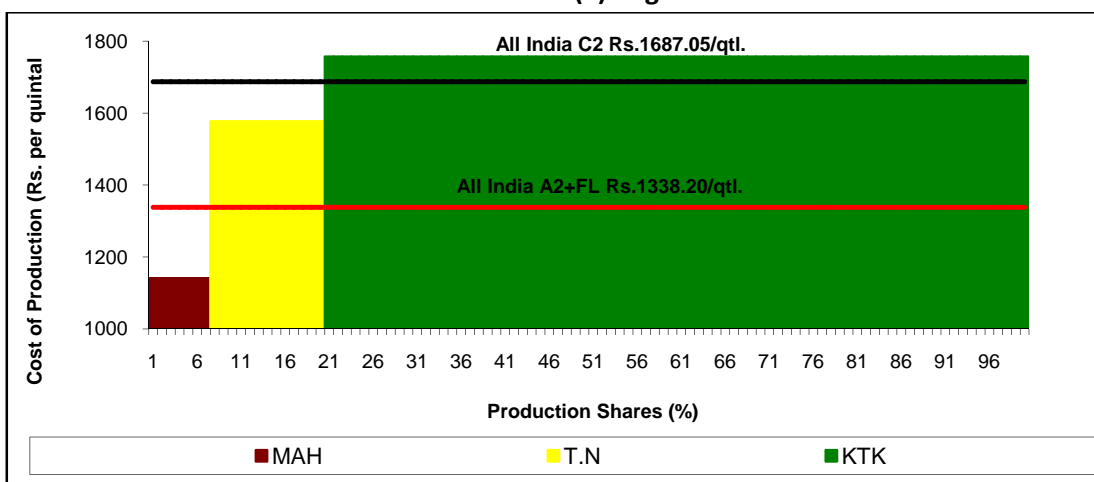
(c) Bajra



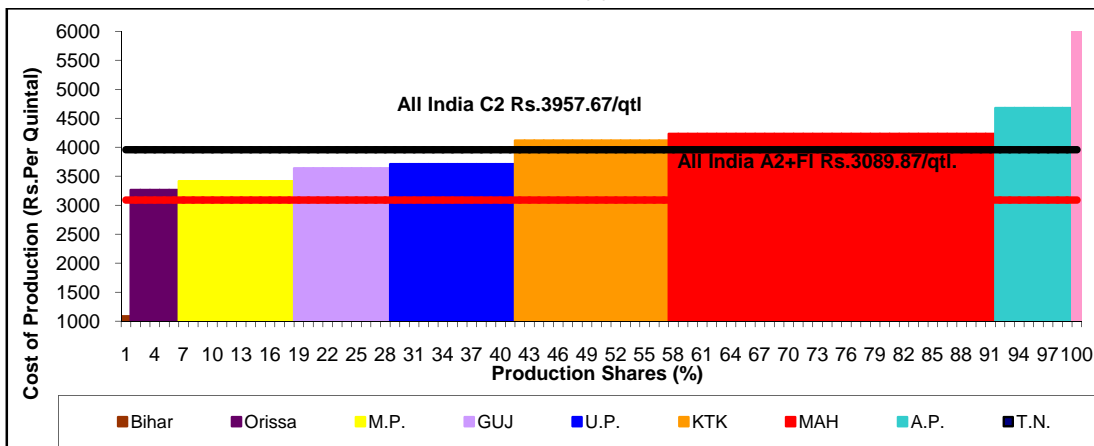
(d) Maize



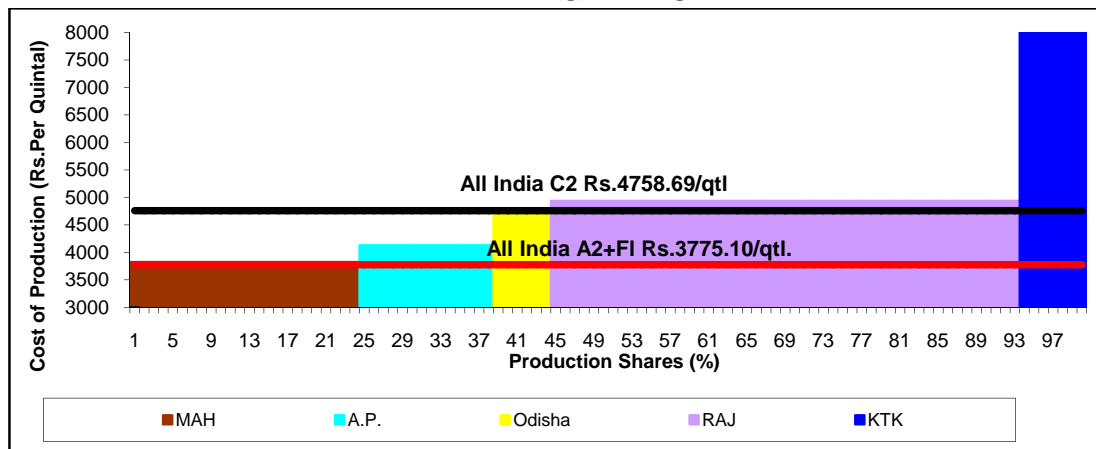
(e) Ragi



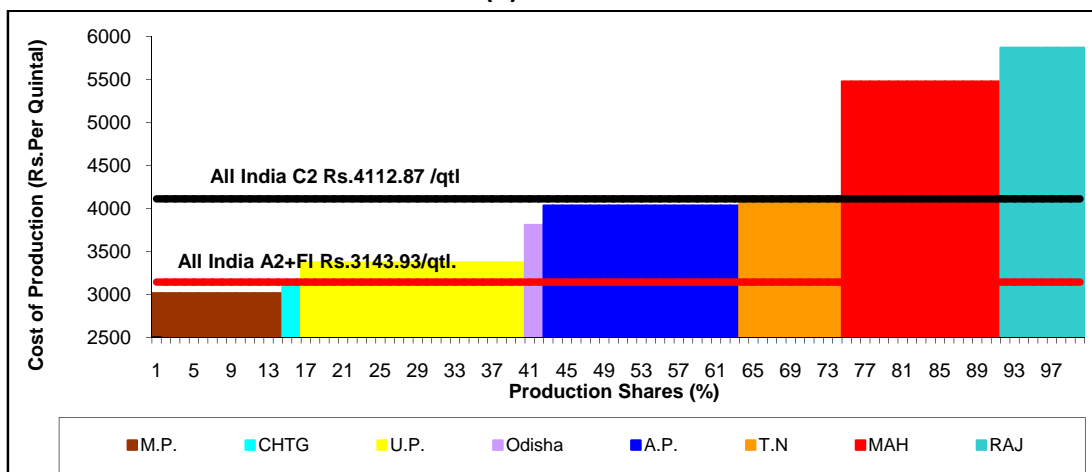
(f) Tur



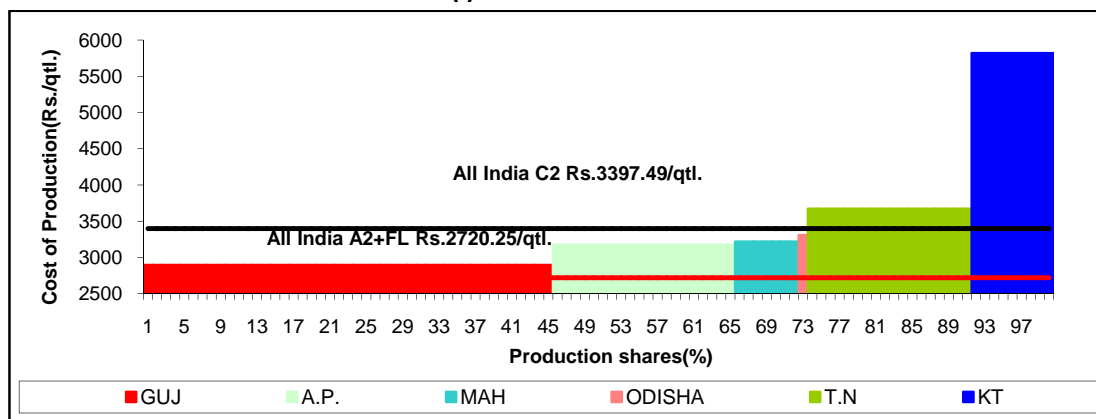
(g) Moong



(h) Urad

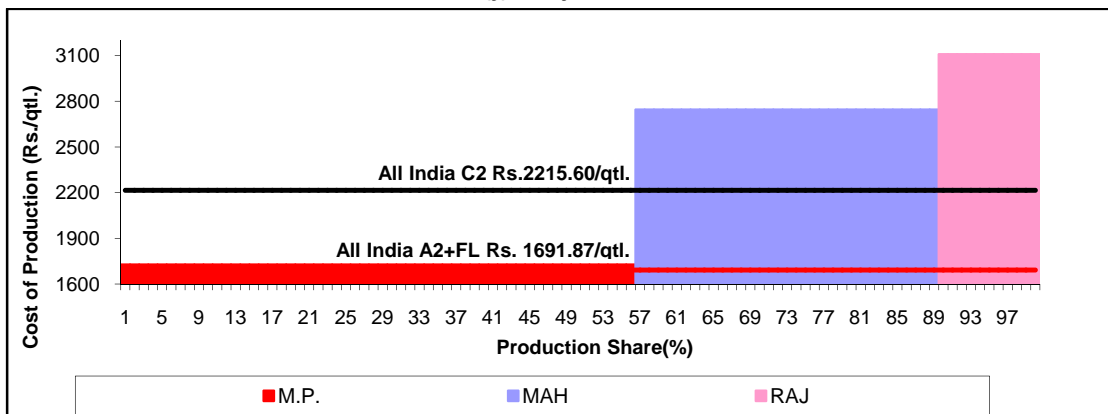


(i) Groundnut

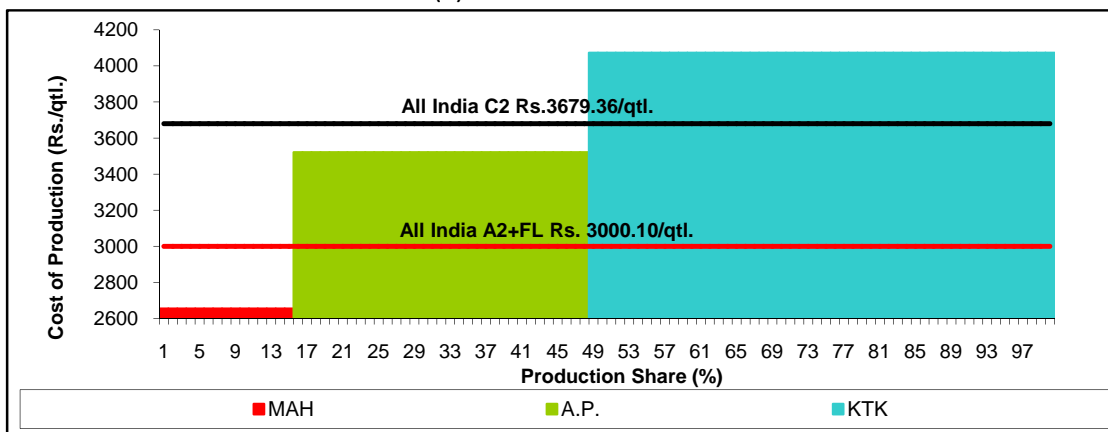




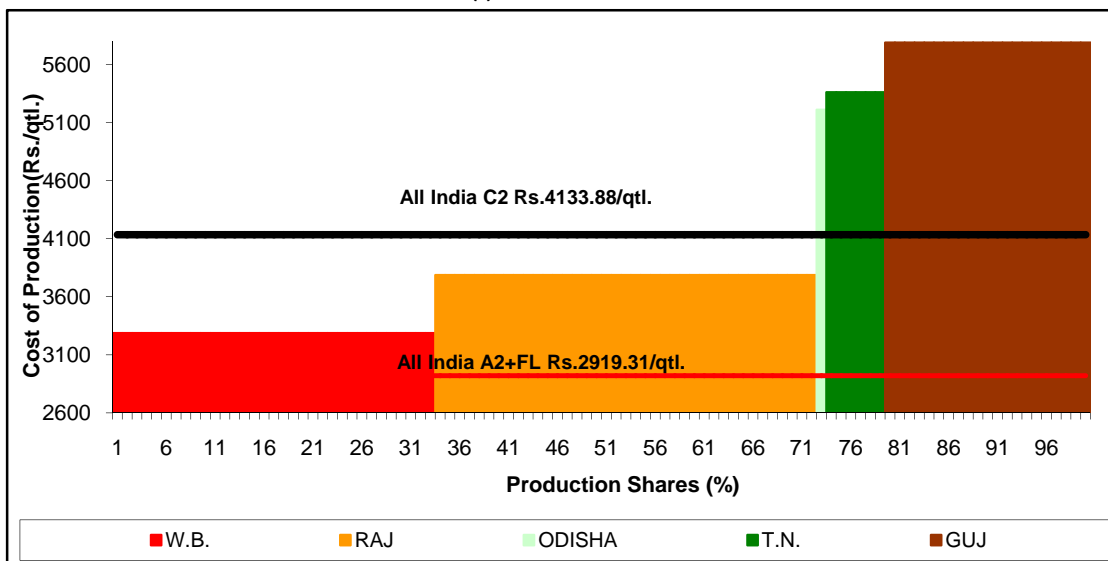
(j) Soyabean

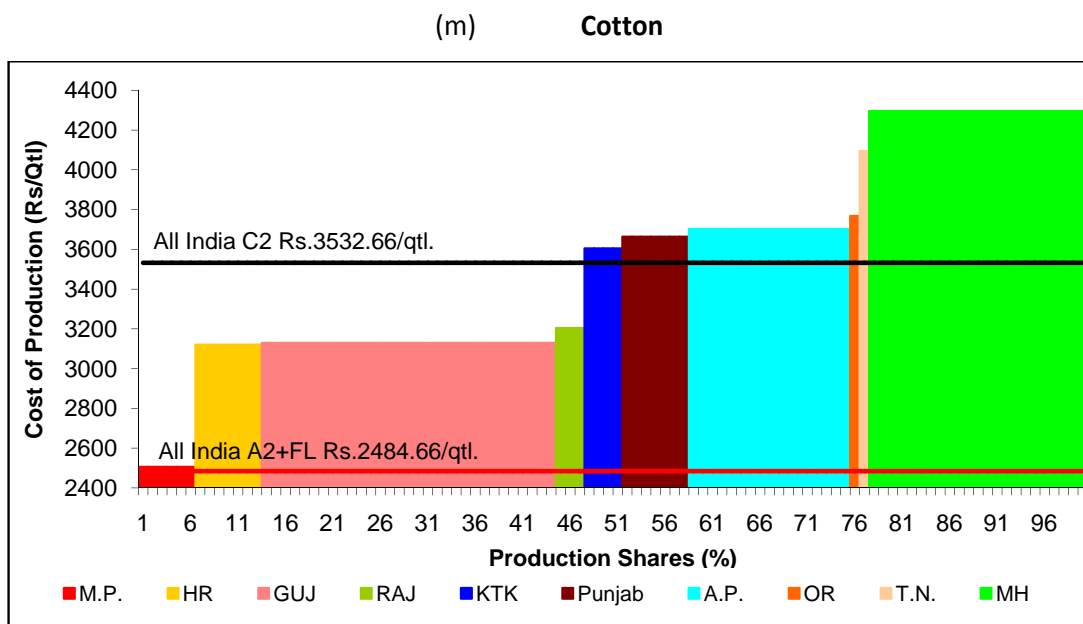


(k) Sunflower



(l) Sesamum





### Inter crop price parity

4.12 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 should be in line with the emerging patterns of demand in the country and export potential in line with their comparative advantage. 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, returns ratio over C2 on jowar is 13 percent (but 63 percent over A2+FL); on bajra 58 percent; ragi (-) 133 percent (but 64% over A2+FL) relative to paddy. Paddy and maize are close to each other on profitability over C2 cost. However, pulses are much more profitable than paddy. And, in the oilseed sector, groundnut, sunflower and nigerseed are losing out in relation to paddy in terms of returns but soyabean and sesamum have more return ratio than paddy. Cotton has maximum returns over C2 as well as A2+FL in relation to paddy.

*Cotton has maximum 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 (2008-09 to 2010-11)**

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	89	97
Jowar	63	13
Bajra	78	58
Ragi	64	-133
<b>PULSES:</b>		
Tur	150	201
Moong	109	145
Urad	128	162
<b>OILSEEDS:</b>		
Groundnut	70	49
Soyabean	107	125
Sunflower	28	-37
Sesamum	147	222
Nigerseed	98	74
<b>Cotton</b>	150	243

### Terms of Trade analysis

- 4.13 The domestic terms of trade between agriculture and non-agriculture is one of the terms of reference for CACP in recommending its MSP policy. The terms of trade data are being compiled by the DES as prices received over prices paid by the farmers. The prices paid by the farmers are collected for three broad categories of goods for final consumption, intermediate consumption and for capital consumption. The index of terms of trade has remained relatively stable, and in fact, marginally favored agriculture in recent years. Terms of trade data available up to the year 2009-10 (provisional) are given in annex table 4.5. 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 from 100.8 in 2005-06 to 136.5 in 2011-12 (with 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 as the base for current estimates is as old as 1980-81.

*Index of terms of trade has marginally favored agriculture in recent years*



## Chapter 5

### Productivity: Different Dimensions

#### An Aerial View of Growth in Productivity

##### A. Land Productivity

- 5.1 Global competitive advantage on a sustainable basis is greatly influenced by prices. One way to reduce real prices of commodities is to increase their total factor productivity (TFP) much faster than demand. Land productivity, though a partial component of TFP, is a critical factor influencing real prices of agricultural products. It would therefore be interesting to see how productivity of important kharif crops impacts cost of production. For this, at first the long term annual growth rates of area, production and land productivity of major kharif crops during the decades of 1980s, 1990s and 2000s are considered. The annual growth during the decades of 1980s, 1990s and 2000s represent simple average annual growth in each year during the period from 1980-81 to 1989-90, 1990-91 to 1999-2000 and 2000-01 to 2011-12 respectively. The summary of these growth levels in area, production and yield along with relevant coefficient of variation (CV) is presented in table 5.1.

*Shrinkage in area under oilseeds such as groundnuts, sunflower and nigerseed is a cause of concern*

5.2 Based on growth rates thus worked out, the following salient points emerge:

- i. Groundnut stands out in terms of improvement in its land productivity in double digits in the decade of 2000s, faster than growth in its production which indicates shrinkage in its acreage. However, these high growth rates need to be taken with caution due to their high CV.
- ii. Shrinkage in area under oilseeds such as groundnuts, sunflower and nigerseed is a cause of concern, given that India imported huge quantity of about 10 million MT of edible oils, valued at Rs 56000 crore during 2011-12 (Nov-Oct.). As cotton cultivation is more remunerative compared to groundnut, it appears that groundnut is losing area to cotton in many places. It may be relevant to add here that Gujarat commands around 40 percent share of country's groundnut production, and cotton is doing quite well in the state of Gujarat compared to Maharashtra, due to higher irrigation ratio and higher yields of cotton in Gujarat vis-à-vis Maharashtra.

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

(Percent)

S. N.	Crop		1980s			1990s			2000s		
			A	P	Y	A	P	Y	A	P	Y
1	Rice	Growth	0.8	6.6	5.4	0.7	2.1	1.4	-0.1	2.0	1.9
		CV	3.1	15.8	13.5	2.4	6.9	4.8	3.1	9.1	7.8
2	Jowar	Growth	-1.1	2.3	3.2	-3.4	-0.9	1.9	-3.9	-2.7	1.5
		CV	4.2	9.9	10.8	13.3	19.2	11.8	13.7	9.0	11.1
3	Bajra	Growth	1.4	13.9	8.8	-1.8	5.4	5.6	0.7	13.7	9.3
		CV	8.4	28.3	23.2	6.2	19.7	17.5	7.4	24.9	21.3
4	Maize	Growth	0.4	7.5	6.6	0.8	2.2	1.4	2.7	6.5	3.6
		CV	2.2	16.7	15.6	3.1	10.7	8.3	10.7	23.3	13.6
5	Ragi	Growth	-1.0	1.4	2.0	-3.4	-1.2	2.1	-2.0	2.8	3.3
		CV	4.9	9.0	7.2	12.1	7.8	8.9	13.4	18.8	14.8
6	Tur	Growth	2.9	5.3	2.1	0.7	2.0	2.0	1.7	1.1	-0.5
		CV	8.4	14.0	7.6	3.0	12.4	11.8	8.1	11.2	8.9
7	Moong	Growth	2.8	7.9	4.6	-2.2	-0.6	0.7	3.1	14.5	9.5
		CV	7.5	17.7	12.8	8.9	13.0	10.5	9.9	29.5	22.9
8	Urad	Growth	2.4	8.3	5.6	-1.4	-1.4	0.1	1.0	3.5	2.1
		CV	7.8	22.0	14.9	8.0	10.6	5.9	7.9	14.3	10.2
9	G'nut	Growth	2.3	7.2	3.6	-2.3	-2.4	-0.3	-1.8	10.7	11.2
		CV	8.6	22.0	14.3	7.9	13.0	13.4	8.1	22.1	22.2
10	Sunflower	Growth	42.9	46.2	2.5	3.1	3.2	0.8	-2.5	-0.4	3.4
		CV	65.8	62.2	17.4	22.0	23.7	8.2	32.7	33.4	13.7
11	S'bean	Growth	18.5	24.0	5.4	11.0	16.4	4.7	4.2	7.3	3.1
		CV	49.4	57.5	14.6	32.4	41.1	12.3	19.1	30.1	15.7
12	S'mum	Growth	0.3	9.0	8.7	-3.7	-3.4	1.3	2.0	8.5	5.5
		CV	6.8	20.4	19.7	17.9	18.1	9.9	9.4	20.1	14.9
13	Nigerseed	Growth	1.1	9.5	6.9	-2.0	-1.8	0.1	-2.3	-1.9	0.0
		CV	6.3	18.7	14.7	7.5	12.5	7.4	10.1	13.5	8.5
14	Cotton	Growth	-0.4	7.0	7.4	1.4	2.1	0.5	3.1	7.8	4.4
		CV	6.6	18.7	20.4	9.4	14.8	6.9	13.9	32.3	23.7

Note: Decades of 1980s, 1990s & 2000s relate to period from 1980-81 to 1989-90, 1990-91 to 1999-2000 & 2000-01 to 2011-12 respectively.  
CV: Coefficient of Variation.



- iii. Advent of Bt cotton in 2002-03 led to a sort of “cotton revolution” with production growth of about 8 percent per annum during 2000s, which is the resultant effect of annual growth in yield levels in excess of 4 percent (made possible by containment of the pest attacks and thus helped in augmenting yields) and area expansion at an average growth of over 3 percent per annum during the corresponding period.
- iv. Bajra and moong witnessed impressive annual growth at 9 percent each in their respective yield levels during the decade of 2000s. The growths in their respective production levels outstrip growth in the corresponding yield levels.
- v. On *a priori* basis, one would expect subdued prices to follow high growth in production of moong at a high rate of 14.5 percent per annum during decade of 2000s but this is not visible in price trends, mainly for two reasons. Firstly, share of moong in total production of pulses (TE 2011-12) is 8.4 percent and therefore contribution of its growth in total pulses production would be only 1.2 percent. Secondly, other pulses (pulses as a group being deficient in domestic supply) are close substitutes of moong. It is also pertinent to note that fluctuations in production of this pulse are high at about 30 percent during decade of 2000s.
- vi. Negative growth in yield level of Tur during 2000s, a major kharif pulse in the country, is a cause of concern. Given shortage of pulses in the country as also in oilseeds, a suitable incentive structure and an effective hedging of risk in pulse cultivation needs to be devised.
- vii. Maize and soyabean, each registered a growth in production of more than 6 to 7 percent per annum during the decade of 2000s. However, distinguishing characteristics of the two is that area expansion under soyabean is faster at an average annual growth of over 4 compared to less than 3 percent per annum under maize.

## B. Water Productivity

- 5.3 According to the existing practice, production per unit of area is taken into consideration to compare land productivity of a given crop across states. Based on this, Punjab with yield rate of 5.8 tonnes/ha during TE 2011-12 emerges more efficient compared to West Bengal which has 3.9 tonnes/ha of yield of paddy. However, this criterion captures only one dimension of land productivity. But since paddy is water guzzling crop, it becomes imperative to look at its water intake. This is important as land, water and power are increasingly becoming scarce in India with high opportunity costs. Therefore, the real resource cost of growing paddy in different regions cannot be correctly compared unless land productivity is seen in conjunction with its water intake. An attempt has been made in this direction and water productivities of key paddy producing states have been derived in table 5.2.

*It takes 4000 litres of water to produce 1 kg of rice*

**Table 5.2: Water Productivity for Production of one kg of Rice in key Paddy Producing States**

Major States	T E 2011-12			Av. duration of the crop (in months)	Irrigation required			Water Requirement for 1 kg of paddy {col. (8)/ (4)}*100	Water Requirement for 1 kg of rice {col.(9)*1.5}	Water Productivity (Kg of rice/lakh litre of water) {{Col. (4)*1000*0.667}/ col.{8}}	Efficiency gap (%)
	Paddy Production (Million Tonnes)	Share in all-India Production (%)	Land Productivity of paddy (Tonnes/ Ha)		No. of irrigations	Av. height of irrigated water column (cm)	Qty of water (lakh litre/ha) {col.(6)* (7)}				
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Andhra	18.93	13.03	4.62	4.5	17.5	5.5	96.3	2083	3124	32	13
Assam	6.79	4.68	2.71	4.0	10.0	5.5	55.0	2026	3039	33	11
Bihar	6.93	4.77	2.22	4.5	12.0	5.5	66.0	2974	4461	22	39
Chhattis	8.15	5.61	2.19	4.5	13.0	5.5	71.5	3265	4897	20	45
Haryana	5.43	3.74	4.42	4.8	18.0	7.5	135.0	3054	4581	22	41
Karnata	5.92	4.08	4.05	4.5	14.0	5.5	77.0	1902	2853	35	5
Odisha	9.78	6.73	2.32	4.5	13.0	5.5	71.5	3076	4614	22	41
<b>Punjab</b>	16.31	11.23	5.79	5.0	26.0	8.0	208.0	3593	<b>5389</b>	<b>19</b>	50
TN	9.46	6.51	4.77	4.5	20.0	5.5	110.0	2308	3462	29	22
UP	18.41	12.68	3.28	5.0	17.0	6.5	110.5	3368	5052	20	46
<b>W.Bengal</b>	21.00	14.46	3.95	4.5	13.0	5.5	71.5	1809	<b>2713</b>	<b>37</b>	0
All-India / Weighted Average	145.19	87.5	3.38	4.6	15.4	5.9	93.8	2665	3988	24	35

Sources: Deduced by CACP based on information received from Directorate of Rice Research, Hyderabad, CRRI, Cuttack and discussions with State Governments

Note : 1. Efficiency gap of a state is defined as (1- water productivity of the state/highest water productivity)\*100

2. 1 ha. = 100 meter length X 100 meters width =10,000 sq. meters and 1 meter = 100 cms. Since 1 cubic meter of water = 1000 litres, therefore 1 ha would require 1 lakh litres of water for 1 cm. height.

*Punjab is less efficient to the tune of 50 percent compared to West Bengal in terms of water productivity*

5.4 It may be seen from table 5.2 that water requirement for production of one kg of rice varies a great deal from state to state, with all-India weighted average of 3988 litre. Punjab consumes the highest quantity of water of 5400 litre for producing one kg of rice in contrast to the lowest of 2700 litre in West Bengal. This irrigation water comes mainly from groundwater. It is evident from table-5.2 that water productivity of Punjab at 19 kg/lakh litre is half of West Bengal's 37 kg/lakh litre. Equivalently, Punjab consumes almost double water compared to West Bengal for producing every kilogram of rice. Thus, Punjab is less efficient to the tune of 50 percent compared to West Bengal in terms of water productivity. It raises an issue of comparative advantage of where to propagate paddy cultivation. Punjab is most efficient in terms of land productivity of paddy, but least efficient in terms of water productivity. In contrast, West Bengal is most efficient from water consumption for paddy cultivation. And if one considers the real cost of irrigation (massive power subsidy and falling water table in Punjab, which is two to three time more than in West Bengal), Punjab will become even less efficient producer of rice vis-à-vis West Bengal. It is, therefore, imperative to get our water and power pricing policies right so that paddy production

follows the comparative advantage, based on natural resources endowments, which can be sustainable in the long run. India could be 50 percent short of its water requirement by 2030, as projected by the IWRG<sup>21</sup>. Given that paddy is a water guzzling crop, its long term development must ensure that it is in line with availability of sufficient water and concomitant requirement of power for extracting water from ground.

## Cost of Production & Yield Rates

- 5.5 As noted earlier, MSP is recommended not solely on the basis of costs, though it is duly factored in while recommending price policy. In spite of this, various stakeholders often demand increase in MSP of various agricultural commodities on the ground of monotonously increasing cost of production year after year. The answer to contain increasing cost of production lies in enhancing yield levels as, on *a priori* basis, one would expect an inverse relationship between real cost of production and yield rates.
- 5.6 To statistically test this hypothesis of an inverse relationship between real cost of production and yields, cost and yield data of various kharif crops, drawn from CS Scheme for 2000-01 to 2010-11 across the key producing states of the relevant crops, are analyzed by fitting the following 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

The crop-wise elasticities are presented in table-5.3.

**Table 5.3 : Impact of Variation in Yield on CoP (%)**

Crop	Elasticity	Crop	Elasticity
Paddy	-0.211 *	Jowar	-0.031 #
Maize	-0.583 *	Moong	-0.416 *
Tur	-0.494 *	Nigerseed	-0.650 *
Soyabbeans	-0.540 *	Ragi	-0.533 *
Groundnut	-0.394 *	Sesamum	-0.412 *
Cotton	-0.418 *	Sunflower	-0.255 *
Bajra	-0.063 #	Urad	-0.472 *

Note: Asterisk (\*) denotes elasticities are significant at 95% level of confidence and # indicates not significant in statistical sense of the term

- 5.7 It can be inferred from table 5.3 that cost of production of paddy can be brought down by about 2 percent if its yield is improved by 10 percent. The impact of yield enhancement on cost reduction is more pronounced in case of other crops. The cost could be reduced by 5 to 7% (in cases of maize, ragi, tur, urad,

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

<sup>21</sup> International Water Resources Group

soyabeans, and nigerseed), and 4% (moong, groundnut, sesamum and cotton) if their respective yield levels increase by 10 percent. Scatter diagrams {charts-5.1 (i) to (xiv)}, based on panel data for various kharif crops (across states and over these years), also depict such an inverse relationship.

**Charts 5.1 (i) to (xiv) : Relationship Between Cost of Production and Yield levels of Various kharif Crops, Based on panel data of various States for 2000-01 to 2010-11 (Constant prices 2010-11 =100)**

Chart-5.1 (i) :Paddy

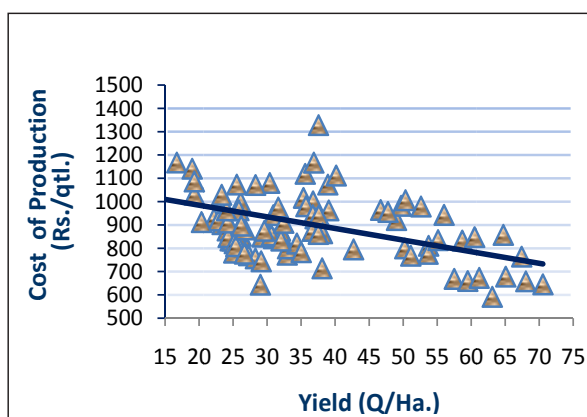


Chart-5.1 (ii) :Maize

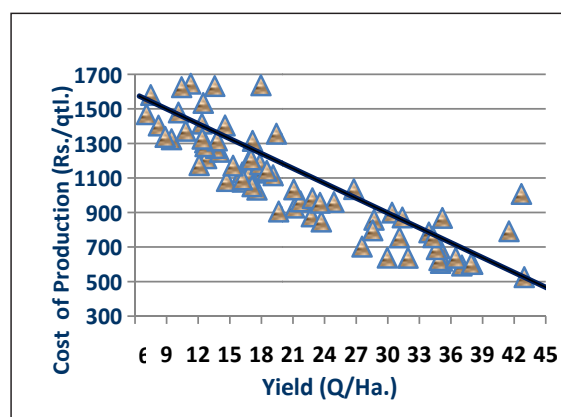


Chart-5.1 (iii) :Bajra

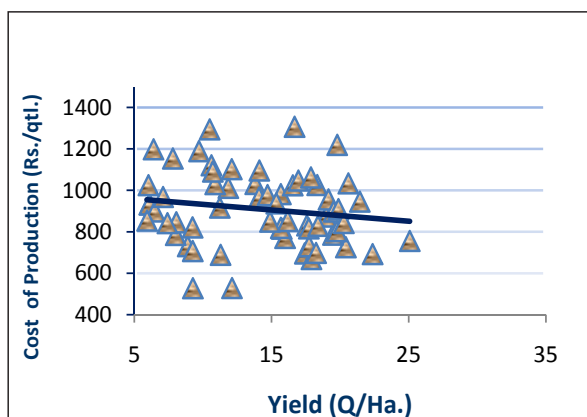


Chart-5.1 (iv) :Jowar

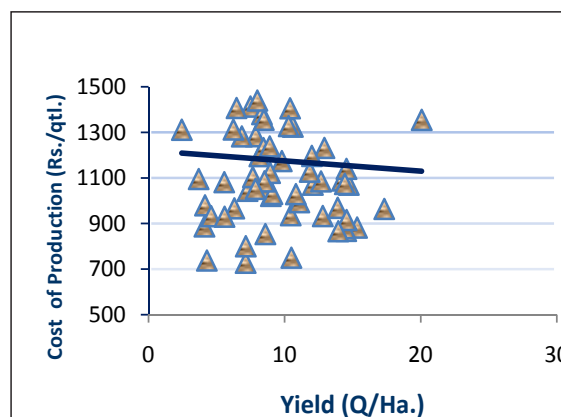


Chart-5.1 (v) : Ragi

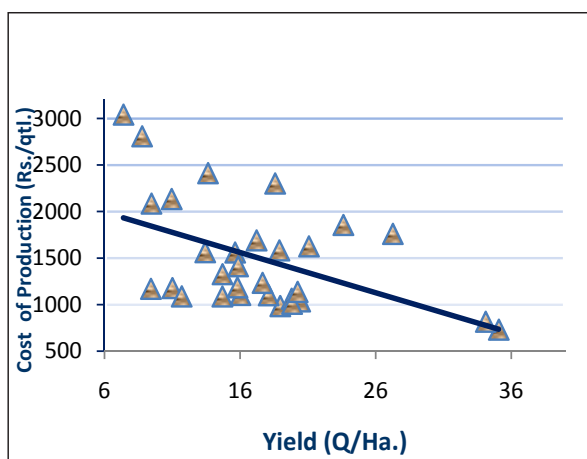


Chart-5.1 (vi) :Urad

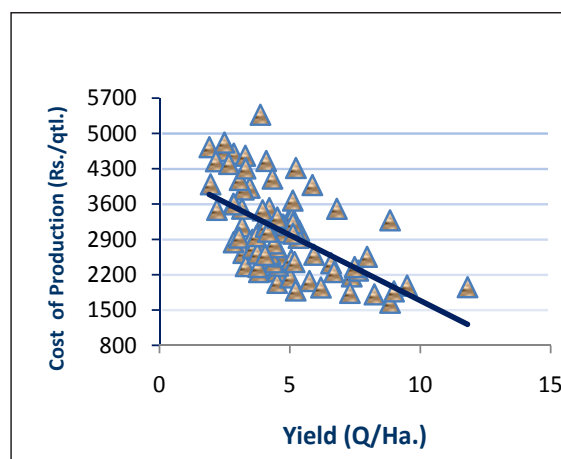


Chart-5.1 (vii) : Moong

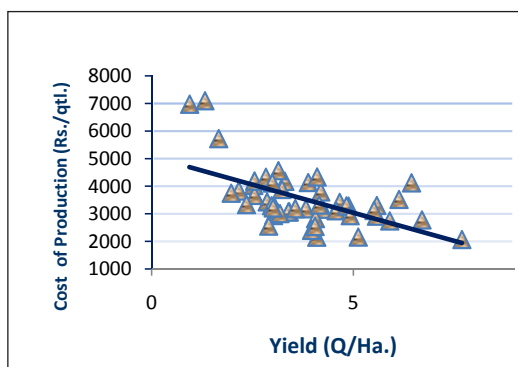


Chart-5.1 (viii) :Tur

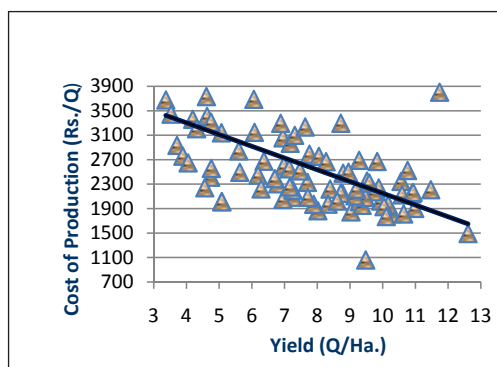


Chart-5.1 (ix) : Groundnut

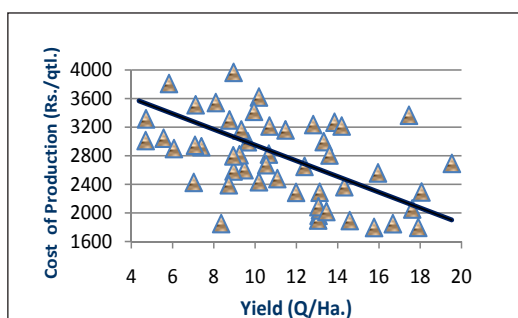


Chart-5.1 (x) : Soyabeans

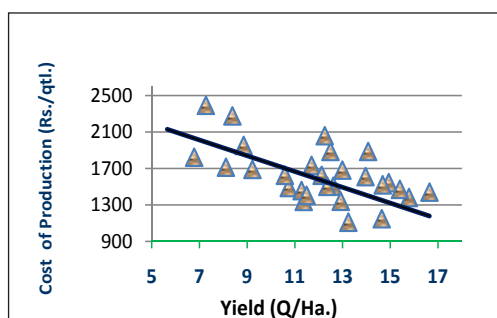


Chart-5.1 (xi) : Sunflower

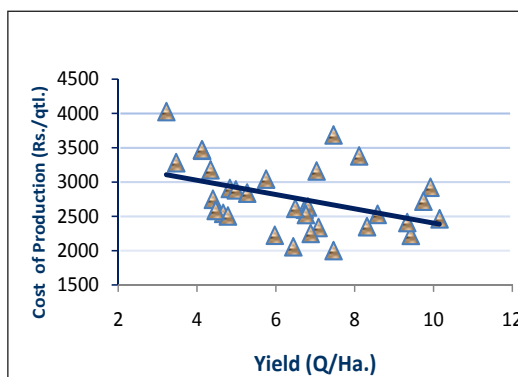


Chart-5.1 (xii) :Sesamum

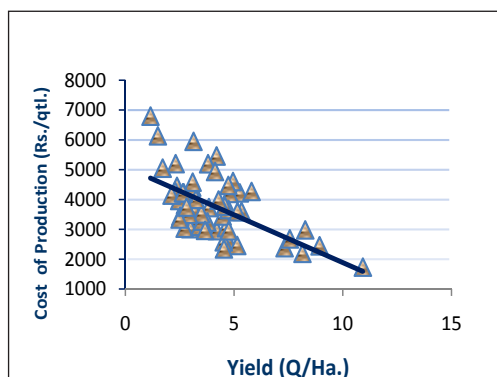


Chart-5.1 (xiii) : Nigerseed

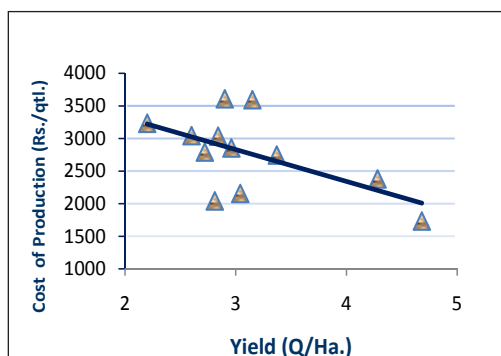
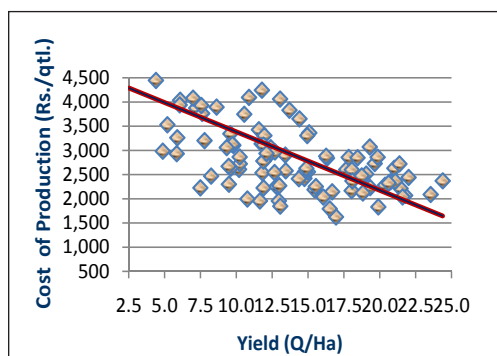


Chart-5.1 (xiv) : Cotton





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

5.8 Productivity plays a key role in enhancing competitiveness in a globalised scenario. It is, therefore, imperative to envision India's position *vis-à-vis* other major producing countries (of kharif crops) on land productivity scale. This would help in "benchmarking" productivity standards, and set our targets accordingly with a view to gain greater competitiveness in production of those crops. With this end in view, India's position *vis-à-vis* other leading countries producing these crops is tracked and is presented in table-5.4.

**Table 5.4: Benchmarking of Important Crops, TE 2011-12**

S.N	Crop	Yield (TE 2011-12) (Average All-India) (Tn/ Ha)	Benchmarking States TE 2011-12	Benchmarking Countries TE 2011	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	3.40	Punjab (5.79, 11.27%) TN (4.77, 6.34%), AP (4.62, 11.84%)	China (6.61, 28.3%) Vietnam (5.37, 5.8%) Indonesia (5.0, 9.3%) India (3.38, 20.6%)	48.9	12.4
2.	Jowar	0.92	MP (1.42, 9.1%) AP (1.24, 5.7%)	Argentina (4.37, 5.66%) USA (4.10, 14.18%) Mexico (3.75, 11.53%) India (0.92, 12.4%)	78.9	67.5
3.	Maize	2.35	Tamil Nadu (4.77, 6.23%) AP (4.4, 17.46%) West Bengal (3.91, 1.82%)	USA (9.72, 37.68%) China (5.49, 20.93%) Brazil (4.10, 6.33%) India (2.51, 2.35%)	74.2	50.9
4.	Barley	2.33	Punjab (3.59, 2.94%) Haryana (3.46, 9.06%) Rajasthan (2.84, 51.1%)	France (6.3, 7.75%) Germany (6.1, 7.67%) Canada (3.24, 6.07%) India (2.31, 1.15%)	63.3	43.0
5.	Tur	0.67	Bihar (1.61, 1.59%) Haryana (1.03, 0.92%) Gujarat (0.98, 9.68%)	Myanmar (1.28, 20.1%), India (0.68, 64.3%)	46.9	-25.8

S.N	Crop	Yield (TE 2011-12) (Average All-India) (Tn/ Ha)	Benchmarking States TE 2011-12	Benchmarking Countries TE 2011	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)
6.	Groundnut	1.24	TN (2.41, 13.8%) Rajasthan (1.66, 8.9%) Gujarat (1.5, 38.0%)	China (3.42, 39.83%) India (1.35, 17.64%) Nigeria (1.25, 8.33%)	63.7	29.5
7.	Sunflower	0.66	Uttar Pd. Incl (2.23, 2.0%) Haryana (1.76, 3.05%) Punjab (1.74, 4.29%)	France (2.42, 5.03%) China (1.85, 5.15%) Argentina (1.65, 8.05%) India (0.63, 1.92%)	74.0	7.9
8.	Soyabean	1.19	Rajas (1.39, 9.8%), Maha (1.21, 30.0%), MP (1.17, 55.4%)	Brazil (2.9, 26.82%) USA (2.89, 35.4%) Argentina (2.45, 17.70%) India (1.2, 4.67%)	58.6	52.1
9.	Cotton	0.50	Tamil Nadu (0.94, 1.96%) Gujarat (0.66, 32.49%) Rajasthan (0.51, 3.96%)	China (1.28, 27.33%) Brazil (1.19, 5.25%) Pakistan (0.72, 8.93%) India (0.49, 23.91%)	61.7	26.6

**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.

Sources: DES for col. (3) & (4); FAO for col.(5).

5.9 It may be noted that India's land productivity is way behind those of benchmark countries in all crops mentioned in table 5.4 and efficiency gaps lie in the range of 47 percent in Tur to 79 percent in jowar. More importantly, efficiency gaps are quite significant even in such crops as paddy, maize and cotton in which India has export competitiveness. Even best performing states of the country lag behind benchmark countries in terms of land productivities of various crops mentioned in table-5.4, except tur. To enhance the productivity levels

in major states and thus at all-India level, it may be useful to examine the best international farming practices, the factors (both natural and man-made) that have helped benchmark countries/states achieve high levels of productivity and replicate those practices/factors in concerned states, after taking its agro-climatic conditions and other relevant factors into consideration.

## Drivers of Productivity

5.10 It has been statistically established (table-5.3) that real cost of production can be reduced by increasing land productivity. To explore as to what drives land productivity, various causal factors are tested. Basically these factors fall in three categories: (a) gross returns over  $A_2 + FL$  of the crop under question in real terms in period  $t-1$  as a proxy to price incentives; (b) technology factors such as fertilizers or seeds consumption per hectare, or percent area irrigated, etc.; and (c) Nature represented by monsoon rainfall. The impact of each one of this is explored by undertaking simple linear regression analyses. Based on this approach, elasticity of various kharif crops are estimated and presented in table-5.5.

**Table-5.5: Drivers of Yield- Kharif Crops**

Crop	Elasticities								Manure	
	Gross Returns in preceding year at constant prices (2010-11=100)		Fertilizer (Quantity)		% Area Irrigated		Monsoon Rainfall			
Paddy	0.185	*	0.153	*	0.247	*	0.232	*		
Maize	0.068	*	0.721	*			0.243	*		
Jowar			0.368	*			0.165	**	0.110	*
Bajra	0.177	*					0.285	*		
Ragi	0.024	*								
Tur			0.164	*	0.048	#			0.003	#
Moong	0.076	**	0.193	*						
Urad	0.208	*	0.060	**						
Groundnut	0.028	#			0.057	#				
Soyabean					0.064	*				
Cotton	0.190	*	0.502	*	0.167	*				
Sunflower			0.765	*			0.534	*		
Sesamum			0.200	*						

Notes:

Asterisk (\*) & double asterisk (\*\*) denote that elasticity is Statistically significant at 95% and 90% level of confidence respectively

# : Not significantly different from zero in statistical sense of the term.

Blank cells either indicate that the corresponding variable was not found appropriate to explain variability in yield levels or relevant data not available.

Nigerseed is not included due to non-availability of requisite data on various parameters

*Drivers of productivity are gross returns, consumption of fertilizers and area under irrigation*

- 5.11 The results of the regression analyses show that farmers respond to gross returns over  $A_2 + FL$ . For instance, yields of paddy, bajra, urad and cotton can increase by 2 percent each if their respective gross returns in the preceding year increase by 10 percent. Consumption of fertilisers impacts yield of majority of crops analysed and its impact is more pronounced in case of maize, sunflower and cotton (5 to 8 percent) compared to about 2 percent each in cases of paddy, tur, moong and seasmum. Area under irrigation impinges significantly in case of paddy, cotton and soyabeans in that order. However, these are preliminary results and their elasticity, as a measure of impact of the causal factors on yield, may change depending upon formulation of regression equations.
- 5.12 Irrigation is an important input that drives productivity, yet gap between irrigation potential created and ultimate irrigation potential is quite high at 29.14 million hectares (table 5.6).

**Table 5.6: Gap in Irrigation potential Created and Outlays Required to Attain Full Potential**

1	Ultimate Irrigation potential (million ha)	140.00
2	Irrigation potential created so far (million ha)	110.86
3	Irrigation potential utilised (million ha)	88.44
4	Irrigation Utilised as <b>percentage</b> of irrigation potential created	79.78
5	Irrigation Utilised as <b>percentage</b> of Ultimate irrigation potential	63.17
6	Gap between irrigation potential created and Ultimate irrigation potential (million ha) {row(1)-row(2)}	29.14
7	Untapped surface irrigation potential out of untapped potential irrigation as in row (6) (million ha)	13.00
8	Untapped minor surface irrigation potential out of untapped potential irrigation as in row (6) (million ha)	10.00
9	Investment required to attain Ultimate Potential (@ Rs2.5 lakh / ha for surface irrigation & @ Rs 1 lakh/ha for minor surface irrigation) (Rs. Lakh Crore)	4.25
10	Outlays for 12th Plan (2012-17) (Rs. Lakh Crore)	0.55

Note: There is about 6.2 million ha of groundwater potential for which no government intervention may be required.

Source: Calculated by the Commission based on information gathered from Ministry of Water Resources & Central Water Commission

- 9.13 A back of envelope calculation indicates that an amount of over 4 lakh crore will be required to realize full potential of irrigation in the country. Against this, only about half lakh crore is provided in the 12th Five year plan. At this rate, it may take another eight Five Year Plans to fully accomplish ultimate potential of the irrigation in the country. Here, it may be pertinent to add that input subsidy in relation to public investment in agriculture is almost six times high. It is imperative to switch emphasis to investments (irrigation) from food and fertilizer subsidy as former is more cost effective.

*At current level of outlays for irrigation, it may take another eight Five Year Plans to realize full potential of irrigation in the country*

- 9.14 Empirical studies do indicate that quality of seeds significantly impinge on land productivity as was demonstrated by HYV, for instance, during Green Revolution period. Due to limitation of non-availability of authentic data on quality of seeds, regression analyses could not be undertaken to estimate impact of quality of seed on land productivity. However, it may be seen from table 5.7 that public investment (expenditure) in R & D, a proxy to quality of seed, is quite low in the country compared to what is being invested by private agencies.

**Table-5.7: Public and Private Investment in Agriculture R & D, 2012-13**  
(Rs. crores)

Organization	Investment /Expenditure
DARE (Govt. of India)	4622 (RE)*
Monsanto	8360
Du Pont	4400

\* Includes both Plan and non-Plan

Sources: For DARE, Department of Agriculture and Research, New Delhi, for Monsanto: [www.monsanto.com](http://www.monsanto.com), for Du Pont, telephonic discussions with their concerned officer at Hyderabad.

- 5.15 The need is to substantially augment public investment in R&D so as to discover and propagate new varieties of seed and ramp up land productivity in a big way, thereby contain cost of production. This will go a long way to make Indian agriculture globally competitive and agriculture sector as an attractive enterprise.
- 5.16 To recapitulate, the following points emerge from the foregoing analyses:
- Productivity enhancement does lead to reduction in costs of production and this may improve global competitiveness.
  - Paddy cultivation is a water guzzling crop and takes about 5400 litre of water for producing one kilogram of rice in Punjab compared to 2700 litre in West Bengal (WB). Thus WB, a major paddy producing state, is far more efficient compared to Punjab, from the point of view of water productivity. Given projection made by IWRG that India will be 50 percent short of water by 2030, our long term development must ensure that it is in line with availability of sufficient water and its cost. It is recommended to accord high priority in evolving such varieties which use less water, and get our water pricing policies right so that paddy cultivation follows a sustainable trajectory of growth with cost effectiveness on long term time basis.
  - Irrigation and seeds are two important inputs that drive productivity. However, public investment in irrigation and agriculture research is quite low. To increase land productivity, public investment in agri R & D (seeds) and irrigation need to be enhanced substantially to hasten adoption of modern technology.
  - Efficiency gaps in India's yield levels compared to those of benchmark countries are quite substantial. To improve our productivity levels, there is a need to study the best international farming practices, deepen the understanding of factors that have helped benchmark countries to accomplish such levels of productivity with a view to replicate those practices/factors, wherever possible given Indian agro-climatic conditions.



## 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 recently made a concerted effort to 'getting the prices right', especially in its last kharif and rabi reports. The priority for this report is now to 'getting the markets right' so that farmers can fully exploit the markets for their produce, both domestic and international, to maximize their returns while support prices extend them a floor price. In doing so, the Commission has taken into account the following factors which are part of 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.

#### Overall Demand and Supply

- 6.2 The year 2012-13 is expected to show some downward fluctuation on the supply side with most of kharif crops. But the stock-to-use ratios seem comfortable in

*Urgent need to liquidate central pool stocks at last year's MSP plus 5 percent taxes if any*

*Emphasis on crop diversification from cereals to pulses & oilseeds & Removal of market distortions*

the case of most of the major crops except maize, tur (as estimated by IPGA) and cotton (as estimated by CAB). Total grain stocks with public agencies are estimated to touch 90 million tonnes on July 1, 2013 (almost 2.8 times the buffer stock norms of 32 million tonnes and much higher than the available covered stocking capacity of only 53 million tonnes). Despite these ballooning stocks, domestic inflation in wheat and rice is high (in January 2013, wheat and rice prices were higher by 21 percent and 17 percent respectively over January, 2012). This is mainly due to the fact the Government has emerged as the largest buyer and hoarder of foodgrain stocks. Considering the high carrying costs of surplus stocks, there is an urgent need to liquidate at least 15 million tonnes of stocks (of rice & wheat) in domestic and/or foreign markets to prepare for the next incoming crops. This has to be done at last year's MSP plus 5 percent taxes if any. Failing this, there is likely to be severe 'crisis of plenty' inflicting high economic costs on the system.

- 6.3 In the case of oilseeds (edible oils) and pulses, India still remains a large importer, indicating that demand exceeds supplies by large margin. India imported a record US\$ 9.7 billion (Rs 46,242 crore) worth of edible oils in 2011-12 (47.5 percent jump from last year) and US\$ 1.8 billion (Rs 8767 crore) worth of pulses (an increase of 16.4 percent as compared to last year). During the first ten months of FY 2012-13, India has already imported US\$ 9.6 billion of edible oil and US\$ 1.9 billion of pulses. The right strategy should be to shift policy focus from cereals to these crops by providing them attractive price incentives along with supportive marketing/procurement infrastructure, besides better technologies (seeds), so that farmers allocate larger irrigated area for these crops and adopt best technologies/farm practices to raise their production.
- 6.4 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. An exercise was undertaken to study the degree of market distortions prevalent in the paddy/rice markets in 18 states. States' policies that impact on paddy/rice market in India were classified into six parameters. States were ranked on the basis of the extent to which prevalent state policies impacted on the market. According to this exercise Gujarat was most market friendly and Chhattisgarh, the most distorted state with respect to paddy/rice market in India. Efficient and well-functioning markets are an urgent need to enhance agricultural growth, efficient use of resources and bringing prosperity to farmers. Therefore, the focus should be on 'getting the markets right'.

## Global Scenario

- 6.5 India is a net exporter of agricultural commodities with agricultural exports constituting 11.9 percent of India's total exports and agricultural imports

constituting only 3.4 per cent of India's total imports in 2011-12. India's comparative trade advantage is also reflected in the share in total global exports of agri products at 2.1 percent in 2011 – higher than India's share in global merchandise exports at 1.7 percent in 2011. However, it needs to be appreciated here that India's agri-trade policy has been relatively restrictive and unstable. The success of the agri-sector against this backdrop, therefore, deserves all the more credit and signifies that a more supportive and liberal trade policy can help propel growth and prosperity in rural areas.

- 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. In several commodities, our domestic prices are below fob prices indicating our trade competitive advantage. 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 emerged as the largest exporter of rice in 2012, as per FAO. 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 7.5 percent duties respectively but exports are banned. Logically, the import duty is graduated from low on raw material to highest on refined product. 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. 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 Agricultural Special Safeguards.

*Need for a  
supportive,  
stable and liberal  
agri-trade policy*

## Costs of Production and Profitability

- 6.7 Actual C2 and A2+FL costs for the kharif crops are now available for the year 2010-11. At all India level gross rate of returns, i.e., relative profit over A2+FL 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 are sunflower and ragi. Analyzing inter crop price parity reveals that paddy and maize are close to each other on profitability over C2 cost; cotton, pulses, soyabean & sesamum are much more profitable than paddy while groundnut, sunflower and nigerseed are losing out in relation to paddy. The projected costs (C2 and A2+FL) of major kharif crops for the 2013-14 season are estimated to be: Rs 961.46/ql & Rs 1234.06/ql for paddy; Rs 1269.18/ql & Rs 1648.41/ql for jowar, Rs 767.58/ql & Rs 1002.84 for Bajra, Rs 859.55/ql & Rs 1112.37 for maize, Rs 1338.2 & Rs 1687.05 for Ragi; Rs 3089.87/ql & Rs 3957.67/ql for



*Gross returns over A2+FL, fertilizer consumption, irrigation ratio, monsoon rainfall are found to drive yield levels*

Tur; Rs 3775.1/ql & Rs 4758.69/ql for Moong; Rs 3143.93/ql & Rs 4111.87/ql for Urad; Rs 2720.25/ql & Rs 3397.49/ql for Groundnut; Rs 1691.87/ql & Rs 2215.6/ql for Soyabean; Rs 3000.1/ql & Rs 3679.36/ql for Sunflower; Rs 2919.31/ql & Rs 4133.89/ql for Sesamum; Rs 2279.05/ql & Rs 3628.41/ql for Nigerseed and Rs 2484.66/ql & Rs 3532.66/ql for Cotton.

## Drivers of Productivity

- 6.8 A prudent response to ever increasing costs of production lies in productivity enhancement. Chapter 5 empirically establishes the existence of an inverse relationship between yield rates and real cost of production. An attempt has been made to assess the water productivity for production of rice in various states. Punjab consumes the highest quantity of water of 5400 liters for producing one kg of rice in contrast to almost half by West Bengal at 2700 litre. It raises the issue of comparative advantage of where to propagate paddy cultivation. Punjab is most efficient in terms of land productivity of paddy, but least efficient in terms of water productivity. And if one considers the real cost of irrigation (massive power subsidy and falling water table in Punjab, which is two to three times more than in West Bengal), Punjab will become even less efficient producer of rice vis-à-vis West Bengal. It is, therefore, imperative for Punjab to diversify to demand driven crops like oilseeds and pulses which, in any case, use less water.
- 6.9 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. As efficiency gaps in India's yield levels compared to those of benchmark countries are quite substantial, an attempt needs to be made to study best international farming practices and adapt them to Indian conditions after factoring in agro-climatic and soil conditions.

## 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 sold, and prices paid for products that are bought by peasantry, have remained somewhat stable during the last five years. The index is prepared by DES, and it shows movement marginally in favor of agriculture.

### **Commission's recommendation for MSP Policy for kharif crops to be marketed in 2013-14:**

- 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 2013-14) and their Justification (Rs/qlt)**

Crops	MSP (Marketing season)				Projected Costs		Domestic Average wholesale price 2012-2013 (Dec-Feb)	International Price 2012-2013 (Dec-Feb)	Demand- Supply Stocks to Use Ratio	MSP Recommended by CACP Marketing Season 2013-14
	2012-13		2011-12		A2 +FL	C2				
	2012-13	2011-12	2010-11	2013-14						
Paddy	1250 (15.7)	1080 (8.0)	1000 (0.0)	1234	961	1180	1300	Excessive stocks	1310 (4.8)	
Paddy Grade A	1280 (15.3)	1110 (7.8)	1030 (0.0)	--	--	--	--	--	1345 (5.1)	
Jowar-Hybrid	1500 (53.1)	980 (11.4)	880 (4.8)	1648	1269	1580	1555	--	1500 (0.0)	
Jowar-Maldandi	1520 (52.0)	1000 (11.1)	900 (4.7)	--	--	--	--	--	1520 (0.0)	
Bajra	1175 (19.9)	980 (11.4)	880 (4.8)	1003	768	1340	--	--	1175 (0.0)	
Ragi	1500 (42.9)	1050 (8.8)	965 (5.5)	1687	1338	1800	--	--	1500 (0.0)	
Maize	1175 (19.9)	980 (11.4)	880 (4.8)	1112	860	1350	1650	Low	1310 (11.5)	
Tur (Arhar)	3850 (4.1)	3700* (5.7)	3500* (52.2)	3958	3090	3275	3580	Comfortable	3850 (0.0)	
Moong	4400 (10.0)	4000* (9.0)	3670* (33.0)	4759	3775	5000	5590	Towards low	4500 (2.3)	
Urad	4300 (13.2)	3800* (11.8)	3400* (34.9)	4112	3144	4225	3500	Comfortable	4300 (0.0)	
Groundnut	3700 (37.0)	2700 (17.4)	2300 (9.5)	3397	2720	5050	5000	--	4000 (8.1)	
Sunflower	3700 (32.1)	2800 (19.1)	2350 (6.1)	3679	3000	3420	3500	--	3700 (0.0)	
Soyabeen (Black)	2200 (33.3)	1650 (17.9)	1400 (3.7)	2216	1692	3200	3240	--	2500 (13.6)	
Soyabeen (Yellow)	2240 (32.5)	1690 (17.4)	1440 (3.6)	--	--	--	--	--	2560 (14.3)	
Sesamum	4200 (23.5)	3400 (17.2)	2900 (1.8)	4134	2919	7360	--	--	4500 (7.1)	
Nigerseed	3500 (20.7)	2900 (18.4)	2450 (1.9)	3628	2279	3480	--	--	3500 (0.0)	
Cotton (MS)	3600 (28.6)	2800 (12.0)	2500 (0.0)	3533	2485	4200	3600	Low	3700 (2.8)	
Cotton (LS)	3900 (18.2)	3300 (10.0)	3000 (0.0)	--	--	--	--	--	4000 (2.6)	

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 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 54



6.12 The Commission feels that these recommendations would lead to better incentive structures, particularly for oilseeds, pulses and coarse cereals, which have been hitherto somewhat neglected. This would lead to diversification of the cropping patterns in line with emerging demand patterns in the economy. It would also lead to a better utilization of water resources which are becoming increasingly scarce. In case of paddy, particularly, the Commission has been conservative in recommending an increase in MSP as last year itself a major realignment of paddy prices was done by raising MSP by 15.7 percent. The MSP for paddy is now touching export parity prices and any further increase may make Indian common rice lose its export competitive edge leading to more accumulation of stocks at home. What is needed is a major overhaul in the functioning of paddy/rice markets by rationalizing taxes/bonuses, encouraging milling capacities and marketing infrastructure especially in the eastern belt. That would go a long way to help farmers realize better rewards and promote efficiency & growth within a seamless unified all India market.

**(Ashok Gulati)**

CHAIRMAN

**(Ashok Vishandass)**

MEMBER

25<sup>th</sup> March, 2013

**(Anandi Subramanian)**

MEMBER SECRETARY



A close-up, slightly low-angle shot of a sunflower field. The sunflowers are in full bloom, with bright yellow petals and large, dark brown, textured centers. The leaves are large, green, and serrated. The background is filled with more sunflowers, creating a dense field. The lighting is bright, suggesting a sunny day.

## **Annex Tables**







**Table - 2.1**  
**All India Estimates of Area of Agricultural Commodities**

(Million hectares)

Crops		2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13*
Rice	Kharif	39.34	39.60	39.45	40.79	37.60	38.03	40.12	38.37
	Rabi	4.32	4.21	4.46	4.74	4.32	4.83	3.88	3.79
	Total	43.66	43.81	43.91	45.53	41.92	42.86	44.01	42.16
Wheat		26.48	27.99	28.04	27.75	28.46	29.07	29.86	29.43
Barley		0.63	0.65	0.60	0.71	0.62	0.71	0.64	0.76
Jowar	Kharif	3.76	3.74	3.50	2.89	3.24	3.07	2.62	2.41
	Rabi	4.90	4.73	4.26	4.64	4.55	4.31	3.63	3.82
	Total	8.67	8.47	7.76	7.53	7.79	7.38	6.25	6.23
Bajra		9.58	9.51	9.57	8.75	8.90	9.61	8.78	8.78
Maize	Kharif	6.76	6.96	7.12	6.89	7.06	7.28	7.38	7.08
	Rabi	0.83	0.93	1.00	1.28	1.20	1.27	1.40	1.27
	Total	7.59	7.89	8.12	8.17	8.26	8.55	8.78	8.36
Ragi		1.53	1.18	1.39	1.38	1.27	1.29	1.18	1.18
Coarse Cereals	Kharif	22.70	22.39	22.62	20.83	21.31	22.15	20.75	18.62
	Rabi	6.36	6.31	5.87	6.62	6.37	6.29	5.67	5.85
	Total	29.06	28.71	28.49	27.45	27.68	28.43	26.42	24.47
Cereals	Kharif	62.04	62.00	62.07	61.62	58.91	60.18	60.88	56.99
	Rabi	37.17	38.52	38.36	39.12	39.14	40.18	39.42	39.07
	Total	99.21	100.52	100.43	100.74	98.05	100.36	100.29	96.06
Tur (Arhar)		3.58	3.56	3.73	3.38	3.47	4.37	4.01	3.79
Moong		3.11	3.19	3.73	2.84	3.07	3.51	3.43	2.73
Urad		2.97	3.07	3.19	2.67	2.96	3.26	3.30	3.26
Gram		6.90	7.49	7.54	7.89	8.17	9.19	8.30	8.93
Pulses	Kharif	10.68	10.68	11.49	9.81	10.58	12.32	11.19	9.64
	Rabi	11.68	12.52	12.14	12.29	12.70	14.08	13.27	14.22
	Total	22.36	23.19	23.63	22.09	23.28	26.40	24.46	23.86
Foodgrains	Kharif	72.72	72.67	73.56	71.43	69.49	72.50	72.07	66.63
	Rabi	48.85	51.04	50.51	51.40	51.84	54.27	52.69	53.29
	Total	121.57	123.71	124.07	122.83	121.33	126.76	124.75	119.92
Groundnut	Kharif	5.74	4.78	5.31	5.29	4.62	4.98	4.32	3.82
	Rabi	1.00	0.83	0.98	0.88	0.86	0.88	0.95	1.04
	Total	6.74	5.61	6.29	6.16	5.48	5.86	5.26	4.87
Soyabean		7.71	8.33	8.88	9.51	9.73	9.60	10.11	10.63
Sunflower	Kharif	0.92	0.86	0.76	0.66	0.57	0.32	0.26	0.32
	Rabi	1.42	1.30	1.15	1.15	0.91	0.61	0.47	0.56
	Total	2.34	2.16	1.91	1.81	1.48	0.93	0.73	0.87
Sesamum		1.72	1.70	1.80	1.81	1.94	2.08	1.90	1.70
Nigerseed		0.41	0.47	0.41	0.39	0.38	0.37	0.36	0.29
R&M		7.28	6.79	5.83	6.30	5.59	6.90	5.89	6.20
Safflower		0.36	0.38	0.32	0.29	0.29	0.24	0.25	0.16
Nine Oilseeds	Kharif	17.37	16.77	17.95	18.53	17.97	18.23	18.42	18.06
	Rabi	10.49	9.74	8.74	9.03	7.99	9.00	7.89	8.26
	Total	27.86	26.51	26.69	27.56	25.96	27.22	26.31	26.32
Cotton		8.68	9.14	9.41	9.41	10.13	11.24	12.18	11.77
Jute		0.76	0.79	0.81	0.79	0.81	0.77	0.81	0.77
Mesta		0.14	0.14	0.15	0.12	0.09	0.10	0.10	0.09
Jute & Mesta		0.90	0.94	0.96	0.90	0.91	0.87	0.90	0.86
Sugarcane		4.20	5.15	5.06	4.42	4.17	4.88	4.04	5.06

(Contd..)

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

**Table - 2.1**  
**All India Estimates of Production of Agricultural Commodities**

(Million tonnes)

Crops		2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13*
Rice	Kharif	78.27	80.17	82.66	84.91	75.92	80.65	92.75	90.69
	Rabi	13.52	13.18	14.03	14.27	13.18	15.33	12.56	11.11
	Total	91.79	93.35	96.69	99.18	89.09	95.98	105.31	101.80
Wheat		69.35	75.81	78.57	80.68	80.80	86.87	94.88	92.30
Barley		1.22	0.65	1.20	1.69	1.35	1.66	1.62	1.82
Jowar	Kharif	4.07	3.71	4.12	3.05	2.76	3.44	3.32	2.58
	Rabi	3.56	3.44	3.81	4.19	3.94	3.56	2.69	2.68
	Total	7.63	7.15	7.93	7.25	6.70	7.00	6.01	5.26
Bajra		7.68	8.42	9.97	8.89	6.51	10.37	10.28	8.15
Maize	Kharif	12.16	11.56	15.11	14.12	12.29	16.64	16.49	15.59
	Rabi	2.55	3.54	3.85	5.61	4.43	5.09	5.27	5.46
	Total	14.71	15.10	18.96	19.73	16.72	21.73	21.76	21.06
Ragi		2.35	1.18	2.15	2.04	1.89	2.19	1.93	1.78
Coarse Cereals	Kharif	26.74	25.61	31.89	28.54	23.83	33.37	32.46	28.51
	Rabi	7.33	8.31	8.86	11.49	9.72	10.32	9.58	9.96
	Total	34.07	33.92	40.75	40.04	33.55	43.68	42.04	38.47
Cereals	Kharif	105.01	105.78	114.55	113.45	99.75	11.40	125.21	119.19
	Rabi	90.21	97.30	101.46	106.45	103.70	112.52	117.02	113.37
	Total	195.22	203.08	216.01	219.90	203.45	123.92	242.23	232.57
Tur (Arhar)		2.74	2.31	3.08	2.27	2.46	2.86	2.65	2.75
Moong		0.95	1.12	1.52	1.03	0.69	1.80	1.71	1.27
Urad		1.25	1.44	1.46	1.17	1.23	1.77	1.83	1.74
Gram		5.58	6.33	5.75	7.06	7.48	8.22	7.70	8.57
Pulses	Kharif	4.86	4.80	6.40	4.69	4.20	7.12	6.06	5.48
	Rabi	8.50	9.40	8.36	9.88	10.46	11.12	11.03	12.09
	Total	13.36	14.20	14.76	14.57	14.66	18.24	17.09	17.58
Foodgrains	Kharif	109.87	110.57	120.96	118.14	103.95	121.14	131.27	124.68
	Rabi	98.70	106.71	109.82	116.33	114.16	123.64	128.05	125.47
	Total	208.58	217.28	230.78	234.47	218.11	244.78	259.32	250.14
Groundnut	Kharif	6.30	3.29	7.36	5.62	3.85	6.64	5.13	3.77
	Rabi	1.70	1.57	1.82	1.55	1.58	1.62	1.84	2.01
	Total	7.99	4.86	9.18	7.17	5.43	8.26	6.96	5.78
Soyabean		8.27	8.85	10.97	9.91	9.96	12.74	12.21	12.96
Sunflower	Kharif	0.46	0.37	0.46	0.36	0.21	0.19	0.15	0.17
	Rabi	0.98	0.86	1.00	0.80	0.64	0.46	0.37	0.41
	Total	1.44	1.23	1.46	1.16	0.85	0.65	0.52	0.58
Sesamum		0.64	0.62	0.76	0.64	0.59	0.89	0.81	0.75
Nigerseed		0.11	0.12	0.11	0.12	0.10	0.11	0.10	0.08
R&M		8.13	7.44	5.83	7.20	6.61	8.18	6.60	7.36
Safflower		0.23	0.24	0.22	0.19	0.18	0.15	0.15	0.09
Nine Oilseeds	Kharif	16.77	14.01	20.71	17.81	15.73	21.92	20.69	19.45
	Rabi	11.21	10.28	9.04	9.91	9.15	10.56	9.11	10.01
	Total	27.98	24.29	29.76	27.72	24.88	32.48	29.80	29.47
Cotton\$\$		18.50	22.63	25.88	22.28	24.02	33.00	35.20	33.80
Jute##		9.97	10.32	10.22	9.63	11.23	10.01	10.74	10.56
Mesta##		0.87	0.96	0.99	0.73	0.59	0.61	0.66	0.57
Jute & Mesta##		10.84	11.27	11.21	10.37	11.82	10.62	11.40	11.13
Sugarcane		281.17	355.52	348.19	285.03	292.30	342.38	361.04	334.54

(Contd..)

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

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

**Table - 2.1**  
**All India Estimates of Yield of Agricultural Commodities (Concluded)**

(Kgs per hectare)

Crops		2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13*
Rice	Kharif	1990	2024	2095	2081	2019	2121	2312	2363
	Rabi	3127	3129	3146	3011	3053	3174	3235	2934
	Total	2102	2131	2202	2178	2125	2239	2393	2415
Wheat		2619	2708	2802	2907	2839	2989	3177	3136
Barley		1938	1006	2000	2394	2172	2357	2517	2405
Jowar	Kharif	1082	992	1177	1055	853	1119	1267	1070
	Rabi	726	727	894	904	865	827	741	701
	Total	880	844	1021	962	860	949	962	844
Bajra		802	886	1042	1015	731	1079	1171	928
Maize	Kharif	1799	1661	2123	2048	1740	2285	2234	2201
	Rabi	3076	3792	3855	4387	3694	4003	3765	4287
	Total	1938	1913	2336	2414	2024	2540	2478	2519
Ragi		1534	1002	1550	1477	1489	1705	1641	1514
Coarse Cereals	Kharif	1178	1144	1410	1371	1119	1507	1564	1531
	Rabi	1152	1316	1511	1735	1525	1641	1689	1702
	Total	1172	1182	1431	1459	1212	1536	1591	1572
Cereals	Kharif	1693	1706	1845	1841	1693	189	2057	2092
	Rabi	2427	2526	2645	2721	2649	2800	2969	2902
	Total	1968	2020	2151	2183	2075	1235	2415	2421
Tur (Arhar)		765	649	827	671	713	655	662	724
Moong		304	351	364	360	225	513	498	465
Urad		419	470	440	427	418	543	555	535
Gram		808	845	763	895	915	895	928	960
Pulses	Kharif	456	450	557	478	397	578	541	569
	Rabi	727	751	689	804	823	790	831	850
	Total	597	612	625	659	630	691	699	737
Foodgrains	Kharif	1511	1522	1644	1654	1496	1671	1822	1871
	Rabi	2020	2091	2174	2263	2202	2278	2430	2354
	Total	1716	1756	1860	1909	1798	1931	2079	2086
Groundnut	Kharif	1097	689	1386	1063	835	1335	1188	985
	Rabi	1702	1879	1857	1764	1830	1846	1938	1929
	Total	1187	866	1459	1163	991	1411	1323	1188
Soyabean		1073	1063	1235	1041	1024	1327	1208	1219
Sunflower	Kharif	496	426	605	540	378	608	566	544
	Rabi	692	661	870	696	697	748	783	736
	Total	615	567	764	639	574	701	706	667
Sesamum		372	363	422	354	303	429	426	439
Nigerseed		261	258	268	297	266	290	269	290
R&M		1117	1095	1000	1143	1183	1185	1121	1188
Safflower		627	637	688	642	621	617	580	553
Nine Oilseeds	Kharif	965	836	1154	961	875	1203	1123	1077
	Rabi	1068	1055	1034	1097	1146	1174	1155	1213
	Total	1004	916	1115	1006	958	1193	1133	1120
Cotton		362	421	468	403	403	499	491	488
Jute		2362	2342	2271	2207	2492	2329	2389	2456
Mesta		1136	1212	1188	1141	1122	1115	1248	1180
Jute & Mesta		2176	2159	2102	2071	2349	2192	2268	2327
Sugarcane		66930	69033	68812	64553	70021	70091	89416	66082

\* : Second Advance Estimates

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



**Table - 2.2**  
**Availability of Kharif Crops**

A: Rice Availability and Use					B: Wheat Availability and Use				
(in million tonnes)					(in million tonnes)				
	2009-10	2010-11	2011-12	2012-13		2009-10	2010-11	2011-12	2012-13
Beginning Stock ^	19.62	24.27	26.86	30.71	Beginning Stock ^	13.43	16.13	15.36	19.95
Production #	89.09	95.98	105.31	101.80	Production #	80.68	80.80	86.87	94.88
Imports	0.00	0.00	0.00	0.00	Imports	0.22	0.27	0.03	0.00
Total Supply	108.71	120.25	132.17	132.51	Total Supply	94.33	97.20	102.26	114.83
Exports	2.10	2.80	8.50	7.00	Exports	0.06	0.07	0.75	4.00
Consumption	83.90	91.27	93.18	93.50	Consumption	78.14	81.76	81.56	81.85
Total Use	86.00	94.07	101.68	100.50	Total Use	78.20	81.83	82.31	85.85
Ending Stock	22.72	26.19	30.49	32.01	Ending Stock	16.13	15.36	19.95	28.98
Stock to Use Ratio (%)	26.41	27.84	29.99	31.85	Stock to Use Ratio (%)	20.62	18.78	24.24	33.76

Notes: # : Production figures are from DAC; for 2012-13 as per 2nd Advance Estimates

^ : Beginning stock (1st July) is as per Deptt. of Food & PD

Sources : NCAER, DAC, Food Bulletin

C: Maize Availability and Use					D: Tur/Arhar Availability and Use				
(in million tonnes)					(in million tonnes)				
	2009-10	2010-11	2011-12	2012-13		2009-10	2010-11	2011-12	2012-13
Beginning Stock ^	0.75	0.45	0.60	1.13	Opening Stocks	0.10	0.15	0.56	0.68
Production #	16.72	21.73	21.76	21.06	Production #	2.46	2.86	2.65	2.75
Imports	0.00	0.00	0.00	0.00	Imports	0.39	0.35	0.47	0.28
Total Supply	17.47	22.18	22.36	22.19	Total Supply	2.95	3.36	3.68	3.71
Exports	1.90	2.80	3.00	2.50	Exports	0.00	0.00	0.00	0.00
Consumption	15.12	18.78	18.23	19.14	Consumption	2.80	2.80	3.00	2.80
Total Use	17.02	21.58	21.23	21.64	Total Use	2.80	2.80	3.00	2.80
Ending Stock	0.45	0.60	1.13	0.55	Ending Stock	0.15	0.56	0.68	0.91
Stock to Use Ratio (%)	2.64	2.78	5.32	2.53	Stock to Use Ratio (%)	5.36	20.00	22.67	32.50

Notes: # : Production figures are from DAC; for 2012-13 as per 2nd Advance Estimates

^ : Beginning stock is as per NCAER

Sources : NCAER, DAC

Notes: # : Production figures are from DAC; for 2012-13 as per 2nd Advance Estimates;

^ 2012-13 figures are up to September 2012

Sources : DAC, DGCIIS, IPGA

## Availability of Kharif Crops

**E: Urad & Moong Availability and Use**

	2009-10	2010-11	2011-12	2012-13
Opening Stocks	0.22	0.28	0.97	1.30
Production #	1.93	3.56	3.40	3.01
Imports	0.71	0.43	0.43	0.29
Total Supply	2.86	4.27	4.80	4.60
Exports	0.00	0.00	0.00	0.00
Consumption	2.58	3.30	3.50	3.50
Total Use	2.58	3.30	3.50	3.50
Ending Stock	0.28	0.97	1.30	1.10
Stock to Use Ratio (%)	10.85	29.39	37.14	31.43

Notes: # : Production figures are from DAC, for 2012-13 as per 2nd Advance Estimates;  
Import figures from DGCI; Opening stock of 2009-10 from IPGA

Sources : DAC, DGCI, IPGA

**F: Tur/Arhar Availability and Use**

	2009-10	2010-11	2011-12	2012-13
Opening Stocks	0.10	0.01	0.27	0.23
Production	2.46	2.86	2.71	2.40
Imports	0.25	0.20	0.25	0.20
Total Supply	2.81	3.07	3.23	2.83
Exports	0.00	0.00	0.00	0.00
Consumption	2.80	2.80	3.00	2.80
Total Use	2.80	2.80	3.00	2.80
Ending Stock	0.01	0.27	0.23	0.03
Stock to Use Ratio (%)	0.36	9.64	7.67	1.07

Sources : India Pulses & Grains Association (IPGA)

**G: Urad Availability and Use**

	2009-10	2010-11	2011-12	2012-13
Opening Stocks	0.06	0.11	0.47	0.63
Production	1.23	1.76	1.81	1.60
Imports	0.47	0.40	0.25	0.20
Total Supply	1.76	2.27	2.53	2.43
Exports	0.00	0.00	0.00	0.00
Consumption	1.65	1.80	1.90	1.90
Total Use	1.65	1.80	1.90	1.90
Ending Stock	0.11	0.47	0.63	0.53
Stock to Use Ratio (%)	6.67	26.11	33.16	27.89

Sources : India Pulses & Grains Association (IPGA)

Note : Figures for table E may not correspond with table G and H as they are from Different sources.

**H: Moong Availability and Use**

	2009-10	2010-11	2011-12	2012-13
Opening Stocks	0.16	0.07	0.42	0.44
Production	0.69	1.80	1.57	1.25
Imports	0.15	0.05	0.05	0.15
Total Supply	1.00	1.92	2.04	1.84
Exports	0.00	0.00	0.00	0.00
Consumption	0.93	1.50	1.60	1.60
Total Use	0.93	1.50	1.60	1.60
Ending Stock	0.07	0.42	0.44	0.24
Stock to Use Ratio (%)	7.53	28.00	27.50	15.00

Sources : India Pulses & Grains Association (IPGA)

**Table - 2.2**  
**Availability of Kharif Crops**

**I: Supply-Demand Balance for Soyabean Oil**

**J: Supply-Demand Balance for Soyabean Oil**

(in million tonnes)					(in million tonnes)				
(July-June)	2010-11	2011-12	2012-13		(July-June)	2010-11	2011-12	2012-13	
Opening Stocks	0.17	0.13	0.40		Opening Stocks	0.17	0.10	0.12	
Production	2.04	1.95	2.07		Production	1.61	1.70	1.80	
Imports	0.80	1.20	1.85		Imports	0.80	1.20	1.85	
Total Supply	3.01	3.28	4.32		Total Supply	2.58	3.00	3.77	
Exports	0.00	0.00	0.00		Exports	0.00	0.00	0.00	
Consumption	2.88	2.88	2.97		Consumption	2.88	2.88	2.97	
Total Use	2.88	2.88	2.97		Total Use	2.88	2.88	2.97	
Ending Stock	0.13	0.40	1.35		Ending Stock	0.10	0.12	0.80	
Stock to Use Ratio (%)	4.51	13.89	45.45		Stock to Use Ratio (%)	3.47	4.17	26.94	

Notes: Opening stock for 2010-11 as per Agriwatch estimates; Production figures are as per VVOF

Source : VVOF (D/Food & PD); Agriwatch

Source : Agriwatch

**K: Cotton Availability and Use**

**L: Cotton Availability and Use**

(Oct-Sept)					(Million 480-Pound Bales)				
(Million 170 Kg Bales)	2009-10	2010-11	2011-12	2012-13		2009-10	2010-11	2011-12	2012-13
Opening Stocks	7.15	4.05	4.58	2.86	Opening Stocks		9.37	10.67	7.72
Production	30.50	33.90	35.30	33.40	Production		26.40	27.50	25.50
Imports	0.60	0.24	1.20	1.20	Imports		0.45	0.60	1.00
Total Supply	38.25	38.19	41.08	37.46	Total Supply		36.22	38.77	34.22
Exports	8.30	7.65	12.88	7.00	Exports		5.00	11.08	3.50
Consumption	25.90	25.96	25.34	27.00	Consumption		20.55	19.95	22.00
Total Use	34.20	33.61	38.22	34.00	Total Use		25.55	31.03	25.50
Ending Stock	4.05	4.58	2.86	3.46	Ending Stock		10.67	7.74	8.72
Stock to Use Ratio (%)	11.84	13.62	7.47	10.16	Stock to Use Ratio (%)		41.76	24.94	34.20

Source : CAB

Source : USDA

**Table 2.3**  
**NATURE & DEGREE OF MARKET DISTORTIONS - Paddy & Rice**

Sl No	State	Taxes/Levies (as % of MSP)	Rank	Bonus#	Rank	Proc as % share in prod	Rank	Stock Limits (tonnes)		Stock Limits Score			Rank	Levy On Rice	Rank	No. of Vital Market Reforms not done out of 7	Rank	Average Rank (col 4+6+8+14+16+18)/6	Final Ranks
		On Rice		On Paddy		Of Rice		On Paddy	On Rice	Paddy $((1/W)^*(1/R))$	Rice $((1/W)^*(1/R))$	Total (cols 11+12)							
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1	ANDHRA PRADESH	13.5	17	0	1	35.54	13	W - 75; R-15	0^	0.08	0.00	0.08	17	75	14	2	7	11.5	17
2	ASSAM	0	1	0	1	0.14	1	0	0	0.00	0.00	0.00	1	50	7	2	7	3.0	2
3	BIHAR	6.5	11	0	1	13.19	9	0	0	0.00	0.00	0.00	1	50	7	0	1	5.0	4
4	CHHATTISGARH	9.7	14	270	17	76.80	18	0	0	0.00	0.00	0.00	1	50	7	4	12	11.5	18
5	GUJARAT	0.5*	1	0	1	0.01	1	0	0	0.00	0.00	0.00	1	0	1	1	4	1.5	1
6	HARYANA	11.5	15	0	1	68.36	16	0	0	0.00	0.00	0.00	1	75	14	6	15	10.3	15
7	HIMACHAL PD	5	9	0	1	0.68	1	0	0	0.00	0.00	0.00	1	50	7	1	4	3.8	3
8	JHARKHAND	3.5	8	0	1	3.29	5	W - 100	W - 100	0.01	0.01	0.02	15	50	7	2	7	7.2	10
9	KARNATAKA	1.5	6	250	16	1.39	4	0	0	0.00	0.00	0.00	1	33.3	6	2	7	6.7	6
10	KERALA	1	4	450	18	17.84	11	0	0	0.00	0.00	0.00	1	0	1	0	1	6.0	5
11	MADHYA PD.	4.7	9	100 (Com); 100 (Gr A)	15	36.41	14	0	0	0.00	0.00	0.00	1	30	4	4	12	9.2	12
12	MAHARASHTRA	1.05	4	0	1	5.57	6	W - 200-350; R - 10-20	W - 200-350; R - 10-20	0.11	0.11	0.21	18	30	4	2	7	6.7	7
13	ODISHA	12	16	0	1	33.40	12	0	0	0.00	0.00	0.00	1	75	14	6	15	9.8	14
14	PUNJAB	14.5	18	0	1	75.77	17	0	0	0.00	0.00	0.00	1	75	14	5	14	10.8	16
15	TAMIL NADU	0	1	50 (Com); 70 (Gr A)	14	6.63	7	0	W - 200; R - 40	0.00	0.03	0.03	16	0	1	0	1	6.7	8
16	UTTAR PD.	8.5	13	0	1	14.09	10	0	0	0.00	0.00	0.00	1	60	13	7	17	9.2	13
17	UTTARAKHAND	7.5	12	0	1	63.61	15	0	0	0.00	0.00	0.00	1	75	14	1	4	7.8	11
18	WEST BENGAL	3	7	0	1	7.44	8	0	0	0.00	0.00	0.00	1	50	7	7	17	6.8	9

Notes: # - Termed 'production incentive' in Tamil Nadu; ^ - Stocking limit for rice in Andhra Pradesh is fixed only for rice mills and not on wholesalers and retailers, hence taken as zero; W - Wholesaler; R - Retailer\* - In Gujarat the market fee varies among districts in the range of 0-1%; the average market fee rate has been taken; \* Sources: FCI, DAC, DCA  
Detail given an explanatory Note

### Explanatory Note

#### Methodology of Ranking of States by the Nature and Degree of Distortions in Paddy/Rice Market

- 1 Since the exercise is confined to paddy/rice, only those states that provided cost data for paddy under the CS scheme were selected. These are 18 states namely, Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal.
- 2 States' policies that impacted on paddy/rice markets were classified into the following six parameters:
  - (i) Taxes/cesses charged (as percent of MSP) on rice by states;
  - (ii) Additional bonus on paddy announced by states;
  - (iii) Rice procured by states (as percent of rice production);
  - (iv) Stock limits fixed by states on rice and paddy;
  - (v) Levy rice imposed by states (as per cent of rice milled by millers) and
  - (vi) Extent of market reforms carried out by states (APMC Act).
- 3 In the case of market reforms, there are seven areas of vital areas which have been identified under the model APMC Act, 2003, that was formulated by the Ministry of Agriculture. These are:
  - (i) Establishment of private market yards/private markets managed by a person other than a Market Committee.
  - (ii) Establishment of private yards and direct purchase of agricultural produce from agriculturist by a person other than a Market Committee (Direct purchasing from producer).
  - (iii) Single registration / license for trade transaction in more than one market.
  - (iv) Provision of Contract Farming.
  - (v) Promote and encourage e-trading.
  - (vi) Single point levy of market fee.
  - (vii) Establishment of consumer/farmers market by a person other than Market Committee (Direct Sale by the producer to the consumers).
- 4 Data on each of the parameters relate to 2012-13; while procurement figures are up to 12.3.2013, market reforms are as of 28.2.2013. Data was obtained from FCI, DCA and DAC.
- 5 In the case of all parameters, except stock limits, a lower figure was indicative of lesser distortion and a 'freer' market. Thus states that charged no taxes/cesses, or imposed no bonuses or levy on rice were given a ranking of one. Again states whose rice procurement as a percentage of their respective rice production was lower got a better ranking, as it signified greater degree of freedom for private trade to operate.



- 6 However, in the case of stock limits, a lower stock limit imposed actually implied greater market control and therefore the inverse of stock limit was taken. Stock limits are imposed on mills, wholesalers and retailers by only 4 of the 18 states. Stock limits imposed on mills was not considered since it varied in accordance with the installed capacity of the mills, and further as in the case of Maharashtra could not be quantified. Hence the stock limits fixed for wholesalers and retailers only were considered. For example, in the case of Andhra Pradesh, the wholesaler limit was 75 tonnes and retailers 15 tonnes in case of paddy. The paddy stock limit was then derived by adding the inverse ratios of the stock limits on both wholesalers and retailers, that is  $[(1/75)+(1/15)]=0.08$ . Similarly the stock limit figure for rice was obtained. The two were then added to obtain the total stock limit on paddy and rice for the state, which was then ranked. States that had fixed no stock limits were given the first rank.
- 7 In the case of market reforms, states were ranked on the basis of the number of vital reforms out of the seven that were still needed to be carried out. Thus states like Bihar, which had repealed the APMC Act with effect from 1.9.2006, Kerala, which had no APMC Act, and Tamil Nadu, which had carried out all areas of reform, got zero scores and were given a ranking of one as their markets were 'free'. Market reforms are generally not commodity specific; except in Odisha, which had excluded paddy/rice under the first market reform, listed under para 3 (i) above. Hence this was considered as a reform that was required to be done for paddy/rice by Odisha and accordingly ranked. In Punjab, partial reforms were carried out with respect to market reforms (ii) and (vii) listed above, as only enabling provisions had been provided and hence was accordingly ranked.
- 8 A simple ranking was done of the 18 states on each of the six parameters. States were ranked from 1 to 18 with the first rank denoting the best. The Standard competition ranking method was used. Under this, states that tied were assigned the same rank, with the next ranking(s) skipped. So, if there were 3 states at rank 2, the next rank listed would be ranked 5. A simple average of the ranks for each state was then calculated. The states were then grouped in to 3 bands – Band 1-5 denoting the top five (green) states; Band 6-10 indicating the next five (amber) states; and Band 11-18 including the bottom eight (red) states. This exercise reveals the relative status of each state with respect to the level of 'market friendly' policies adopted. The average of ranks was then calculated to get the final ranking of the states. In cases where states had equal ranks, the state that fared better on carrying out market reforms got precedence and was given higher ranking; in case where states were tied on that score also, such as Karnataka and Maharashtra, the state with better ranking on any other parameter was ranked higher. Thus according to this exercise Gujarat was most market friendly and Chhattisgarh, the most distorted state with respect to paddy/rice market in India.

**Table 2.4(a)**  
**States/Centres where prices of kharif crops dipped below MSP**  
**during 2012-2013 marketing season**

(Rs per quintal)

State	Centre	MSP	Oct	Nov	Dec	Jan	Feb
<b>Paddy</b>		<b>1250</b>					
Andhra Pd.	Cuddaph			1022	1128		
	Krishna		1110	1168	1186	1228	
	Nellore		1114	1142	1139		
	Srikakulam		1206	1180			
Assam	Bangaigaon		931	1025			
	Barpeta		980	1031	897	1100	
	Darrang		957	895	918	954	
	Dibrugarh		890	800	800	750	750
	Nagaon		971	916	858	991	
Bihar	Aarah				1160	1150	
	Buxur				1155	1150	1200
	Darbhangha				1140	1130	1175
	Jainagar				1140	1100	1150
	Sasaram				1155	1165	1185
Chhattisgarh	Bastar		1065	1149	1208	1226	
	Bilaspur		1159	1199	1233		
	Kanker		1007	1162	1198	1190	
	Kawardha		1214	1152	1144	1158	
	Mahasamund		1108	1224	1237		
Chattisgarh	Bilaspur		1135	1155	1170		
	Jagdalpur		950	855	950	1050	925
Jharkhand	Deogarh		1088	1099	1090	1101	
	Gumla		965	956	963	975	
	Jamtara		1078	1070	1086	1053	
	Pakur		1012	1015			
Karnataka	Bangalore		1219			1090	
	Dharwad		1081	1086		1200	
	Hassan		1107	1094	1213		
	Madikeri		1093	1052	1212		
Madhya Pd.	Damoh		1031	1179		1224	
	Katni		1007	1012	1034	1123	
	Balaghat		1150	1150	1150	1150	1150
	Waraseoni		1100	1100	1150	1150	1150
Maharashtra	Gondia		1200	1150	1100		
	Latur		1011	1011	977	958	
	Nandurbar		933	1165			
	Osmanabad		1031	1029	1086	1066	
	Thane			1011	1149	991	
Odisha	Balasore		1022	1138	1184		
	Dhenkanal		1080	1189			
	Jajpur		1108	1195			
	Jharsuguda		1080	1147			
	Rayagada		1080	1158			
Uttar Pd.	Azamgarh		1084	1075	1071	1062	
	Balrampur		1076	1073	1082	1132	1140
	Bareilly		1059	1093	1087	1125	1150
	Gorakhpur		1060	1058	1070	1070	1125
	Shahjahanpur		1021	1013	1078	1115	1190
West Bengal	Birbhum		1076	1099	1042	1113	
	Burdwan		1167	1208	1207	1236	
	Coochbehar		1142	1103	1134	1113	
	Jhantipari		1080	1130	1060	1060	1100
	Midnapore(E)		1083	1081	1068	1028	

(Contd..)

**Table 2.4(a)**  
**States/Centres where prices of kharif crops dipped below MSP**  
**during 2012-2013 marketing season**

(Rs per quintal)

State	Centre	MSP	Oct	Nov	Dec	Jan	Feb
<b>Jowar</b>		<b>1500</b>					
Andhra Pd.	Guntur		1400		1400		
	Nandyal		1400	1400	1450		
Gujarat	Patan		1335	1362			
Karnataka	Dharwad		1250	1300	1110	1200	1475
	Bellary		1246	1277	1229	1272	1274
	Gokak		1040	1290	1300		
Madhya Pd.	Bhopal		1235	1265	1300	1251	1280
	Chhindwara		900	900	1000		
Maharashtra	Akola		1200	1200	1300	1200	1200
	Amarawati		1200	1300	1200	1200	1200
	Chalisgaon		1050	1200	1200		
	Nanded		1050	1200	1250	1250	1200
Rajasthan	Jaipur		1400	1400			
	Bikaner			1340	1400		
Uttar Pd.	Bahraich		1070	1060	1050	1035	1060
	Kanpur		1240		1145	1140	1240
	Varanasi			980	1020	1060	
<b>Bajra</b>		<b>1175</b>					
Gujarat	Patan		1112				
	Deesa		1140				
	Jamnagar		1165				
Haryana	Hissar		1100				
Karnataka	Bijapur		1135				
	Gulbarga		1135				
Madhya Pd.	Morena			905	1000		
Maharashtra	Dhule		1100				
	Pachora		1100				
Rajasthan	Alwar		1130				
	Jaipur		1080				
	Jodhpur		1100				
	Tonk		1080	1140			
Uttar Pd.	Agra		1060	1070	1075	1100	
	Chandausi				1095	1130	1130
	Hathras		980	1150			
	Jaswatnagar		1045	1100	1115		
	Varanasi			990	1025	1065	
<b>Maize</b>		<b>1175</b>					
Assam	Tezpur		1000				
	Tihu		1000				
Karnataka	Mandla		1080		950		
	Jamkandi		1000				
Punjab	Patiala		1000	1000	1000	1000	1000
Uttar Pd.	Bahraich		1165				
<b>Ragi</b>		<b>1500</b>					
Odisha	Ganjam		1180	1180	1180	1180	1180
	Berhampur		1180	1180	1180	1180	1180
Karnataka	Hassan				1100		

(Contd..)

**Table 2.4(a)**  
**States/Centres where prices of kharif crops dipped below MSP during 2012-2013**  
**marketing season**

(Rs per quintal)

State	Centre	MSP	Oct	Nov	Dec	Jan	Feb
<b>Tur</b>		<b>3850</b>					
Andhra Pd.	Vijayawada			3500	3800	3800	
Karnataka	Gulbarga				3615	3561	3575
Madhya Pd.	Bhopal			3500	3100	3400	3350
	Sagar			3600	3500		
Maharashtra	Akola			3800	3500	3650	3800
	Bhusaval			2600	3000	3000	2700
Uttar Pd.	Hapur			3500	3300	3450	3600
<b>Moong</b>		<b>4400</b>					
Andhra Pd.	Suryapeta			4317			
Karnataka	Gadag			4395	3800	4310	
Madhya Pd.	Bhopal			3700	3550	3550	3650
	Sagar			3000	3500		
Maharashtra	Akola				3700		
	Bhusaval				3200	3400	3100
Uttar Pd.	Hapur			4200	4200		
<b>Urad</b>		<b>4300</b>					
Andhra Pd.	Suryapeta			NR	3309		
	Vijayawada			3600	3500	3600	
	Vizianagaram			3100	3100		
Gujarat	Patan				3100	3165	
Karnataka	Gulbarga			3163	3134	3302	3206
Madhya Pd.	Bhopal			2800	2600	2801	2800
	Sagar			3000	3500		
Maharashtra	Bhusaval			4200	3700	3550	3000
	Mumbai						
Tamil Nadu	Virdhunagar			3700	3700	4000	3900
Uttar Pd.	Hapur			3350	3250	3350	3400
	Agra			4255	4270	4010	
<b>Sunflower Seed</b>		<b>3700</b>					
Andhra Pd.	Adoni			3300	3160	3000	3000
	Hyderabad				3425	3400	3500
	Kurnool			3689	3260	3400	3420
Karnataka	Gulbarga			3376	3243	3234	3501
	Raichur			3659	3649	3425	3444
Maharashtra	Khamgaon					3250	3250
	Latur			3300		3500	3600
Tamil Nadu	Virudhunagar			3500	3500	3500	3500
<b>Cotton</b>		<b>3600</b>					
Gujarat	Panchmahal		3127				
Andhra Pd.	Cuddapah				3571		
	Krishna			3500	3000		
	Nizamabad				3570		
	Prakasam			3571	3575		
	Srikakulam			3479			
	Vijayanagram			3300	3200		
Karnataka	Raichur				3550		
Maharashtra	Nandurbar			2498			

Source : Directorate of Economics & Statistics, /Agmarknet  
Ministry of Agriculture

Concluded.

**Table 2.4 (b)**  
**States/Centres where prices of kharif crops dipped below MSP**  
**during 2012-2013 marketing season**

(Rs per quintal)

State	Centre	MSP	Oct	Nov	Dec
<b>Paddy</b>		<b>1250</b>			
Assam	Nalbari		750-850	650-750	650-750
	Golpara		700-800	700-875	800-875
	Dibrugarh		850-950	800-900	850-1000
	Howly		800-950	750-850	750-850
	Boko		925-1050	850-1000	750-900
Gujarat	Sanand		1235		
Jharkhand	NA		1125	1150	
<b>Bajra</b>		<b>1175</b>			
Gujarat	Himatnagar		1113		
<b>Tur</b>		<b>3850</b>			
Gujarat	Himatnagar		3684	3569	
	Dahegaon		3011	3000	
	Dahod		3371	3582	3661
<b>Moong</b>		<b>4400</b>			
Gujarat	Himatnagar		3708		
<b>Urad</b>		<b>4300</b>			
Gujarat	Dahod		3490		3388
	Himatnagar		2617	2629	
	Rajkot		3510	3898	

Source : State Replies



**Table - 4.1**  
**State-wise Gross and Net returns on actual estimates of cost of cultivation of Kharif crops**  
**(Average of 2008-09 to 2010-11)**

<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	33287	50719	58862	25575	76.8	8143	16.1
Assam	16689	23100	22919	6229	37.3	-181	-0.8
Bihar	14205	19645	21170	6965	49.0	1526	7.8
Chhatisgarh	14318	21334	24299	9980	69.7	2965	13.9
Gujarat	22179	31147	49542	27363	123.4	18395	59.1
Haryana	26838	48070	68794	41957	156.3	20725	43.1
Himachal Pradesh	11412	17084	24235	12823	112.4	7151	41.9
Jharkhand	13655	18663	14114	459	3.4	-4549	-24.4
Kerala	29586	40241	52768	23183	78.4	12528	31.1
Karnataka	28849	41071	53492	24643	85.4	12422	30.2
Madhya Pradesh	14170	22741	30097	15927	112.4	7356	32.3
Maharashtra	33769	42291	33308	-461	-1.4	-8984	-21.2
Odisha	19516	28124	29506	9990	51.2	1382	4.9
Punjab	28327	49074	68559	40233	142.0	19486	39.7
Tamilnadu	33912	45945	51896	17984	53.0	5952	13.0
Uttar Pradesh	19880	30924	37798	17918	90.1	6874	22.2
Uttarakhand	18885	32868	39714	20829	110.3	6846	20.8
West Bengal	28569	38059	38507	9939	34.8	448	1.2
<b>ALL-INDIA wt.ave</b>	22986	33697	38741	15756	68.5	5044	15.0
<b>MAIZE</b>							
Andhra Pradesh	27834	40865	43172	15338	55	2307	6
Bihar	15635	21612	46329	30694	196	24717	114
Chhatisgarh	6312	8713	7835	1522	24	-878	-10
Gujarat	14315	18929	23036	8721	61	4108	22
Himachal Pradesh	10846	15888	15309	4462	41	-579	-4
Karnataka	15397	22466	29037	13640	89	6571	29
Madhya Pradesh	10838	14382	11233	394	4	-3149	-22
Rajasthan	17657	23442	23974	6318	36	533	2
Tamilnadu	26486	36975	45892	19406	73	8917	24
Uttar Pradesh	15961	23003	17210	1249	8	-5794	-25
<b>ALL-INDIA wt.ave</b>	16816	23607	27051	10236	61	3445	15

(Contd.)

**Table - 4.1**

**State-wise Gross and Net returns on actual estimates of cost of cultivation of Kharif crops (Average of 2008-09 to 2010-11)**

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>JOWAR</b>							
Andhra Pradesh	17385	26479	28012	10628	61	1534	6
Karnataka	8946	12411	11987	3041	34	-424	-3
Maharashtra	14242	22457	23404	9162	64	946	4
Rajasthan	8134	10592	10409	2275	28	-184	-2
Tamilnadu	10180	12860	13185	3005	30	326	3
Madhya Pradesh]	10535	14412	11971	1436	14	-2442	-17
<b>ALL-INDIA wt.ave</b>	13364	18800	19163	5799	43	362	2
<b>BAJRA</b>							
Gujarat	15150	20909	28898	13748	91	7990	38
Haryana	13054	20781	19747	6693	51	-1034	-5
Karnataka	7294	9332	7325	31	0.4	-2007	-22
Maharashtra	18085	24321	22677	4593	25	-1644	-7
Rajasthan	7993	11196	13043	5050	63	1847	16
Uttar Pradesh	12988	19272	17919	4932	38	-1353	-7
<b>ALL-INDIA wt.ave</b>	10678	15049	16360	5682	53	1312	9
<b>RAGI</b>							
Andhra Pradesh	30883	41899	35482	4599	15	-6416	-15
Karnataka	13879	25226	19842	5963	43	-5384	-21
Tamilnadu	15813	23301	29445	13632	86	6144	26
Maharashtra	18548	35470	22420	3872	21	-13050	-37
<b>ALL-INDIA wt.ave</b>	14853	26746	21405	6552	44	-5341	-20
<b>TUR</b>							
Andhra Pradesh	16708	26642	28021	11314	68	1379	5
Bihar	8403	14677	34754	26351	314	20077	137
Gujarat	15150	22043	36633	21484	142	14591	66
Karnataka	12690	19532	27525	14835	117	7994	41
Madhya Pradesh	10290	17823	25232	14942	145	7409	42
Maharashtra	25291	36743	45883	20592	81	9140	25
Odisha	7633	13052	17814	10181	133	4762	36
Tamilnadu	14275	18820	20963	6688	47	2143	11
Uttar Pradesh	10610	23801	32195	21585	203	8394	35
<b>ALL-INDIA wt.ave</b>	16876	26288	34194	17318	103	7906	30
<b>MOONG</b>							
Andhra Pradesh	7314	12874	16101	8787	120	3227	25
Karnataka	7351	9801	9177	1826	25	-624	-6
Maharashtra	14562	19702	22523	7961	55	2821	14
Odisha	6649	10386	12826	6178	93	2441	24
Rajasthan	7844	11037	15048	7204	92	4011	36
<b>ALL-INDIA wt.ave</b>	8953	12841	15632	6678	75	2791	22

(Contd.)

**Table - 4.1**  
**State-wise Gross and Net returns on actual estimates of cost of cultivation of Kharif crops (Average of 2008-09 to 2010-11)**

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>URAD</b>							
Andhra Pradesh	11667	20227	29419	17752	152	9192	45
Chhatisgarh	8414	12241	14046	5632	67	1805	15
Madhya Pradesh	10534	15725	19329	8796	83	3604	23
Maharashtra	13692	18452	18401	4709	34	-51	-0.3
Odisha	6828	11221	15147	8319	122	3925	35
Rajasthan	9331	12849	15580	6249	67	2731	21
Tamilnadu	9617	13917	19111	9495	99	5195	37
Uttar Pradesh	8135	12686	14970	6836	84	2285	18
<b>ALL-INDIA wt.ave</b>	<b>10346</b>	<b>15621</b>	<b>19412</b>	<b>9066</b>	<b>88</b>	<b>3791</b>	<b>24</b>
<b>GROUNDNUT</b>							
Andhra Pradesh	26941	39585	37660	10719	40	-1926	-5
Gujarat	23839	31692	39738	15899	67	8046	25
Karnataka	14967	19912	18117	3150	21	-1795	-9
Maharashtra	26397	35606	40970	14573	55	5364	15
Odisha	20392	29577	33355	12963	64	3778	13
Tamilnadu	25952	33919	33834	7882	30	-84	-0.2
<b>ALL-INDIA wt.ave</b>	<b>23675</b>	<b>32661</b>	<b>35062</b>	<b>11386</b>	<b>48</b>	<b>2400</b>	<b>7</b>
<b>SOYABEAN</b>							
Madhya Pradesh	12951	20495	26955	14003	108	6460	32
Maharashtra	18761	24622	24638	5877	31	17	0.1
Rajasthan	12238	17151	19008	6770	55	1856	11
<b>ALL-INDIA wt.ave</b>	<b>14708</b>	<b>21481</b>	<b>25500</b>	<b>10793</b>	<b>73</b>	<b>4020</b>	<b>19</b>
<b>SUNFLOWER</b>							
Andhra Pradesh	16337	18592	18549	2212	14	-43	-0.2
Karnataka	9231	12065	10261	1030	11	-1804	-15
Maharashtra	14119	19140	20722	6603	47	1582	8
<b>ALL-INDIA wt.ave</b>	<b>11822</b>	<b>14906</b>	<b>14087</b>	<b>2264</b>	<b>19</b>	<b>-819</b>	<b>-5</b>
<b>SESAMUM</b>							
Gujarat	12219	17851	22751	10532	86	4900	27
Odisha	7942	11840	12002	4060	51	161	1
Rajasthan	6071	9817	16221	10149	167	6403	65
Tamilnadu	11909	18711	20498	8590	72	1787	10
West Bengal	13987	20190	23136	9149	65	2946	15
<b>ALL-INDIA wt.ave</b>	<b>9617</b>	<b>14493</b>	<b>19310</b>	<b>9694</b>	<b>101</b>	<b>4817</b>	<b>33</b>
<b>NIGERSEED</b>							
Odisha	6125	9231	10249	4124	67	1018	11
<b>ALL-INDIA wt.ave</b>	<b>6125</b>	<b>9231</b>	<b>10249</b>	<b>4124</b>	<b>67</b>	<b>1018</b>	<b>11</b>

(Contd.)

**Table - 4.1**

**State-wise Gross and Net returns on actual estimates of cost of cultivation of Kharif crops (Average of 2008-09 to 2010-11)**

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>COTTON</b>							
Andhra Pradesh	28402	45692	54107	25705	91	8414	18
Gujarat	31242	46031	73555	42312	135	27524	60
Haryana	30387	42595	65126	34739	114	22531	53
Karnataka	18008	26946	38064	20056	111	11118	41
Madhya Pradesh	17005	30112	46662	29657	174	16551	55
Maharashtra	29493	40507	46520	17027	58	6012	15
Odisha	21102	31410	41490	20388	97	10080	32
Punjab	30094	54394	74381	44287	147	19987	37
Rajasthan	21629	35266	66412	44784	207	31147	88
Tamilnadu	37790	48951	61484	23695	63	12534	26
<b>ALL-INDIA wt.ave</b>	<b>28352</b>	<b>42143</b>	<b>57455</b>	<b>29103</b>	<b>103</b>	<b>15311</b>	<b>36</b>

**Table - 4.2**  
**Month-wise average daily wage rates for Agricultural Labour (Man)**  
**(Rupees)**

	A. P.	Assam	Bihar	Gujarat	Haryana	H. P.	Karnataka	Kerala	M. P.	Maharashtra	Odisha	Punjab	Rajasthan	T. N.	U. P.	W. B.
Labour Bureau (Daily Wage Rates)																
January, 2009	106.13	82.51	68.30	80.07	133.79	171.83	73.90	221.38	61.80	83.83	68.97	126.46	109.79	113.75	81.32	86.10
February	100.08	82.32	68.30	80.07	133.79	171.83	73.90	221.38	61.80	83.83	68.97	126.46	109.79	113.75	81.32	86.10
March	109.21	82.79	73.32	78.76	134.25	171.83	76.78	226.71	63.52	84.47	78.12	133.00	138.29	117.07	82.46	87.74
April	112.55	84.61	75.70	78.56	140.89	171.83	77.16	238.53	65.11	84.67	86.14	144.80	113.61	117.73	85.19	88.85
May	113.75	86.09	75.64	78.72	140.79	169.04	82.41	255.19	64.73	84.98	90.19	127.49	124.47	115.91	86.35	88.86
June	111.55	88.33	75.40	78.98	142.75	167.44	83.34	304.16	66.07	87.83	92.22	137.02	137.68	121.12	86.92	89.68
July	115.21	87.32	83.46	80.72	160.23	161.99	83.55	308.91	71.13	90.19	89.16	143.30	126.25	124.81	90.58	92.73
August	117.03	90.86	86.71	81.21	162.87	166.40	84.76	309.95	70.51	90.52	87.56	138.19	117.76	125.36	92.47	94.14
September	118.40	92.77	88.57	82.57	165.94	170.17	85.98	249.21	69.26	94.03	86.83	138.19	116.55	127.62	92.21	95.28
October	116.48	96.08	85.47	82.76	163.95	167.60	86.37	252.04	68.17	94.74	85.03	140.54	130.16	136.50	92.63	96.57
November	125.38	96.27	86.40	82.76	168.01	165.20	86.40	252.04	71.32	95.52	84.37	134.00	132.33	138.37	94.30	98.74
December	137.95	96.40	86.55	82.76	168.22	180.42	87.54	250.79	69.79	95.10	86.70	133.49	113.65	137.98	94.89	99.94
January, 2010	136.03	96.74	88.76	83.98	171.21	178.17	88.12	258.96	69.49	96.37	86.55	143.26	129.15	136.00	96.42	101.16
February	140.28	94.92	89.72	84.06	176.23	178.83	89.58	257.71	70.92	97.29	92.38	141.35	129.05	148.01	97.54	105.12
March	131.78	98.19	89.99	85.22	177.27	178.56	90.15	297.77	72.65	97.58	92.79	141.35	119.58	145.03	98.33	105.41
April	143.43	97.36	90.30	85.77	177.62	180.78	92.76	297.77	74.25	97.38	95.32	146.99	127.59	145.38	104.03	106.50
May	135.41	99.77	92.17	85.96	179.09	177.54	92.68	297.77	74.94	99.09	95.33	147.44	145.71	145.38	101.82	106.44
June	125.90	102.23	92.10	85.96	176.35	178.87	92.80	299.16	76.40	106.26	115.39	163.59	126.25	148.01	103.21	106.12
July	141.17	104.73	96.71	88.07	181.29	185.78	95.17	307.27	79.33	109.78	105.29	182.24	136.37	158.33	109.05	109.56
August	137.66	111.56	97.90	88.37	187.85	189.67	99.21	307.27	80.45	109.18	105.74	176.86	132.17	153.03	110.93	110.64
September	136.33	112.60	98.06	87.05	185.35	193.33	103.11	317.77	80.32	110.00	109.21	172.42	192.37	163.06	112.23	114.89
October	139.76	112.39	98.69	89.14	187.65	185.71	105.67	329.87	81.27	114.63	117.52	178.37	144.36	166.73	114.63	114.81
November	153.21	112.89	99.26	90.23	188.07	184.83	108.99	329.87	83.62	116.61	120.96	176.86	144.79	178.20	115.26	115.28
December	176.29	114.10	101.85	91.36	195.02	195.22	111.76	319.13	84.43	119.36	123.96	176.21	145.69	174.08	116.53	118.47
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

(Contd.)



**Table - 4.2**  
**Month-wise average daily wage rates for Agricultural Labour (Man)** **(Rupees)**

	A. P.	Assam	Bihar	Gujarat	Haryana	H. P.	Karnataka	Kerala	M. P.	Maharashtra	Odisha	Punjab	Rajasthan	T. N.	U. P.	W. B.
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
<b>% change of Dec., 2012 over Dec., 2011</b>	<b>27.50</b>	<b>13.84</b>	<b>33.61</b>	<b>11.69</b>	<b>10.61</b>	<b>12.10</b>	<b>30.54</b>	<b>22.74</b>	<b>22.98</b>	<b>19.56</b>	<b>0.75</b>	<b>44.51</b>	<b>43.49</b>	<b>20.04</b>	<b>30.32</b>	<b>22.69</b>

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
2009										
January	107.9	117.5	112.7	110.8	122.0	174.5	132.4	100.0	108.7	148.2
February	107.2	117.5	112.7	110.7	122.0	174.5	125.4	116.8	109.8	149.7
March	107.7	108.7	112.6	110.3	122.1	174.5	125.7	119.6	112.2	150.0
April	107.6	108.7	111.6	112.7	122.6	174.5	125.7	131.3	114.3	152.4
May	107.5	108.7	110.4	112.6	122.7	174.5	125.7	140.6	114.0	157.2
June	107.6	108.7	110.1	112.8	122.7	174.5	125.7	145.6	116.0	158.2
July	107.5	108.7	110.2	112.8	122.7	174.5	133.9	165.8	119.5	159.9
August	107.2	117.4	110.6	112.8	122.7	174.5	133.9	159.8	123.3	165.3
September	107.1	117.4	110.4	112.8	122.6	174.5	133.9	162.0	139.8	166.3
October	108.1	117.4	110.5	114.7	123.2	174.5	133.9	157.4	136.4	166.5
November	108.5	117.4	110.7	118.0	123.2	174.5	133.9	160.2	144.6	166.9
Dec., 2009	109.0	117.4	110.6	117.8	123.2	174.5	133.9	165.2	143.0	168.8
2010										
January	108.9	117.4	110.2	117.7	123.5	174.5	133.9	184.3	182.3	173.1
February	109.0	117.4	110.2	118.0	123.5	174.5	136.6	185.3	176.5	175.6
March	109.8	117.4	111.8	118.6	123.7	174.5	144.6	180.1	199.1	175.8
April	114.6	117.4	114.6	118.8	123.5	174.5	145.6	187.1	182.2	177.0
May	115.2	126.2	113.6	117.6	123.9	194.2	145.6	187.3	165.2	177.0
June	115.3	126.2	113.6	117.8	124.0	194.2	147.4	174.9	171.3	177.0
July	115.3	126.2	113.4	117.9	124.0	194.2	153.5	174.7	173.4	177.6
August	116.5	126.2	113.3	117.9	124.0	194.2	153.5	170.6	180.7	177.8
September	116.5	126.2	113.4	118.0	124.2	194.2	153.5	174.3	186.5	178.0
October	116.3	126.2	113.7	118.0	125.0	194.2	153.5	182.3	192.7	178.2
November	116.6	126.2	114.0	118.2	125.6	194.2	153.6	190.9	190.7	178.6
Dec,2010	116.3	126.2	113.9	118.1	125.6	194.2	153.6	203.0	190.1	178.5
2011										
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
Dec,2011	138.7	135.7	115.3	125.8	137.8	236.6	167.8	253.0	198.9	186.2
2012										
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	141.5	241.4	192.3	282.6	236.1	209.3
November	151.1	166.3	121.5	123	141.9	241.4	192.3	277.4	230.7	217.8
Dec,2012	150.9	166.3	122.1	123.2	143.6	241.4	192.3	278.1	238.2	221.3
% change of Dec., 12 over Dec.,11	8.80	22.55	5.90	-2.07	4.21	2.03	14.60	9.92	19.76	18.85

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

**Table - 4.4**

**Statewise Projected Cost of Production (C2 & A2+FL) for Kharif 2013-14 and their shares in Production in increasing order of Cost**

States	A2+FL	C2	Relative Shares in Production(%)	States	A2+FL	C2	Relative Shares in Production (%)
<b>Paddy</b>				<b>Maize</b>			
Himachal Pradesh	403.25	663.99	1	Andhra Pradesh	746.20	1028.97	24
Uttarakhand	630.25	974.62	1	Bihar	519.29	655.18	9
Andhra Pradesh	799.46	1030.01	13	Chhattisgarh	1447.30	1692.74	1
Gujarat	737.80	1031.88	2	Gujarat	592.64	860.38	5
Uttar Pradesh	756.22	1062.83	13	Himachal Pradesh	1075.03	1360.92	4
Punjab	769.62	1067.26	11	Karnataka	988.88	1181.79	23
Madhya Pradesh	743.18	1102.02	2	Madhya Pradesh	910.42	1152.97	7
Assam	890.84	1126.95	4	Rajasthan	871.74	1196.83	10
Chhattisgarh	883.44	1147.63	6	Tamil Nadu	918.41	1195.63	9
Odisha	933.65	1163.75	7	Uttar Pradesh	1078.60	1424.29	7
Karnataka	1001.46	1235.12	4	All India	859.55	1112.37	
Tamil Nadu	1090.14	1309.52	6	<b>Ragi</b>			
West Bengal	1104.16	1310.78	14				
Bihar	1101.22	1343.37	6	Karnataka	1413.59	1757.14	80
Kerala	1172.19	1404.37	1	Maharashtra	492.69	1141.15	8
Haryana	1064.55	1623.69	4	Tamil Nadu	1373.40	1577.31	13
Jharkhand	1365.54	1688.87	2	All India	1338.20	1687.05	
Maharashtra	2247.29	2677.10	3				
All India	961.46	1234.06					
<b>Jowar</b>				<b>Bajra</b>			
Andhra Pradesh	1268.16	1854.30	7	Gujarat	712.73	938.54	13
Karnataka	1564.16	1976.64	23	Haryana	628.65	1020.27	12
Madhya Pradesh	1043.60	1313.49	10	Karnataka	1375.55	1710.19	3
Maharashtra	1207.72	1586.51	48	Maharashtra	1099.13	1345.38	9
Rajasthan	1025.74	1279.57	8	Rajasthan	728.53	913.12	46
Tamil Nadu	1303.68	1659.25	5	Uttar Pradesh	733.06	976.66	18
All India	1269.18	1648.41		All India	767.58	1002.84	
<b>Tur</b>				<b>Urad</b>			
Bihar	1070.04	1083.48	1	Madhya Pradesh	2222.57	3013.83	14
Odisha	2793.23	3263.10	5	Chhattisgarh	2486.73	3145.55	2
Madhya Pradesh	2441.04	3415.06	12	Uttar Pradesh	2445.36	3371.39	24
Gujarat	3020.23	3637.23	10	Odisha	2793.90	3807.20	2
Uttar Pradesh	2781.27	3708.41	13	Andhra Pradesh	2988.87	4031.94	21
Karnataka	3093.42	4116.27	16	Tamil Nadu	3013.88	4079.57	11
Maharashtra	3146.15	4231.94	34	Maharashtra	4401.61	5473.92	17
Andhra Pradesh	4674.39	4676.76	8	Rajasthan	4941.45	5865.73	9
Tamil Nadu	4817.93	6008.87	1	All India	3143.93	4111.87	
All India	3089.87	3957.67					(Contd...)

**Table 4.4 (concluded)**  
**Statewise Projected Cost of Production (C2 & A2+FL) for Kharif 2013-14**  
**and their shares in Production in increasing order of Cost**

States	A2+FL	C2	Relative Shares in Production(%)	States	A2+FL	C2	Relative Shares in Production(%)
<b>Moong</b>				<b>Seasmum</b>			
Maharashtra	2974.57	3823.80	24	West Bengal	2561.61	3285.68	33
Andhra Pradesh	2935.06	4127.80	14	Rajasthan	2203.89	3786.03	39
Odisha	3592.44	4798.09	6	Odisha	3850.88	5208.84	1
Rajasthan	4069.11	4934.35	49	Tamil Nadu	4007.44	5359.26	6
Karnataka	6429.07	8091.21	7	Gujarat	4520.02	5786.58	20
All India	3775.10	4758.69		All India	2919.31	4133.89	
<b>Soyabean</b>				<b>Sunflower</b>			
Madhya Pradesh	1190.09	1727.71	56	Maharashtra	2142.56	2654.58	15
Maharashtra	2284.79	2745.42	33	Andhra Pradesh	2838.04	3520.99	33
Rajasthan	2460.86	3108.99	11	Karnataka	3347.34	4072.06	52
All India	1691.87	2215.60		All India	3000.10	3679.36	
<b>Groundnut</b>				<b>Cotton</b>			
Gujarat	2299.10	2897.73	45	Madhya Pradesh	1486.21	2505.93	6
Andhra Pradesh	2363.79	3175.55	20	Haryana	2160.77	3120.68	7
Maharashtra	2533.91	3219.68	7	Gujarat	2265.98	3129.76	31
Odisha	2570.02	3309.94	1	Rajasthan	2247.86	3204.66	3
Tamil Nadu	3039.45	3672.30	18	Karnataka	2422.61	3604.45	4
Karnataka	4978.90	5820.71	10	Punjab	2427.95	3663.26	7
All India	2720.25	3397.49		Andhra Pradesh	2296.42	3702.40	17
				Orissa	2979.12	3768.06	1
				Tamil Nadu	3367.08	4093.82	1
				Maharashtra	3256.19	4295.67	23
				All India	2484.66	3532.66	

**Table - 4.5**  
**Index of Terms of Trade Between Agriculture and Non-Agriculture Sectors**

Triennium Ending 1990-91=100

Year	Index of Prices Received (IPR)	Index of Prices Paid (IPP) for				Index of Terms of Trade (ITT)
		Final Consumption	Intermediate Consumption	Capital Formation	Combined Index	
<b>Weights</b>		<b>73.54</b>	<b>21.63</b>	<b>4.83</b>	<b>100</b>	
1981-82	54.9	54.4	88.5	56.9	61.9	88.7
1982-83	60.3	58.8	91.1	62.6	66.0	91.4
1983-84	64.2	64.2	91.0	67.4	70.1	91.6
1984-85	68.0	66.6	92.3	72.5	72.4	93.9
1985-86	70.4	69.5	94.3	76.4	75.2	93.6
1986-87	76.7	74.8	98.7	78.8	80.2	95.6
1987-88	86.0	84.6	102.3	82.5	88.3	97.4
1988-89	90.3	90.4	96.9	90.9	91.8	98.4
1989-90	97.5	97.6	99.2	100.6	98.1	99.4
1990-91	112.3	112.1	104.0	108.5	110.2	101.9
1991-92	130.8	124.9	119.4	127.2	123.8	105.7
1992-93	138.7	131.5	139.5	137.5	133.5	103.9
1993-94	151.4	143.9	152.9	147.3	146.1	103.6
1994-95	171.1	159.0	166.1	158.4	160.5	106.6
1995-96	182.9	173.4	174.2	176.1	173.7	105.3
1996-97	190.6	185.6	181.5	188.8	184.9	103.1
1997-98	205.9	195.7	192.0	196.7	194.9	105.6
1998-99	220.8	213.8	197.1	206.8	209.8	105.2
1999-00	219.8	217.1	203.9	212.6	214.0	102.7
2000-01	225.0	220.5	230.4	227.0	223.0	100.9
2001-02	235.3	226.4	235.2	240.4	229.0	102.8
2002-03	247.9	234.9	252.7	245.2	239.2	103.6
2003-04	251.2	245.2	259.1	255.7	248.7	101.0
2004-05	258.2	252.3	264.5	305.6	257.5	100.3
2005-06	275.8	266.0	277.1	310.5	270.6	101.9
2006-07	291.2	283.4	284.6	327.8	285.8	101.9
2007-08*	324.3	323.2	301.5	356.1	320.1	101.3
2008-09*	350.9	350.8	332.8	380.1	348.3	100.7
2009-10*	411.6	415.1	355.0	394.0	401.1	102.6

Source: Directorate of Economics and Statistics, Ministry of Agriculture, New Delhi

\* Provisional

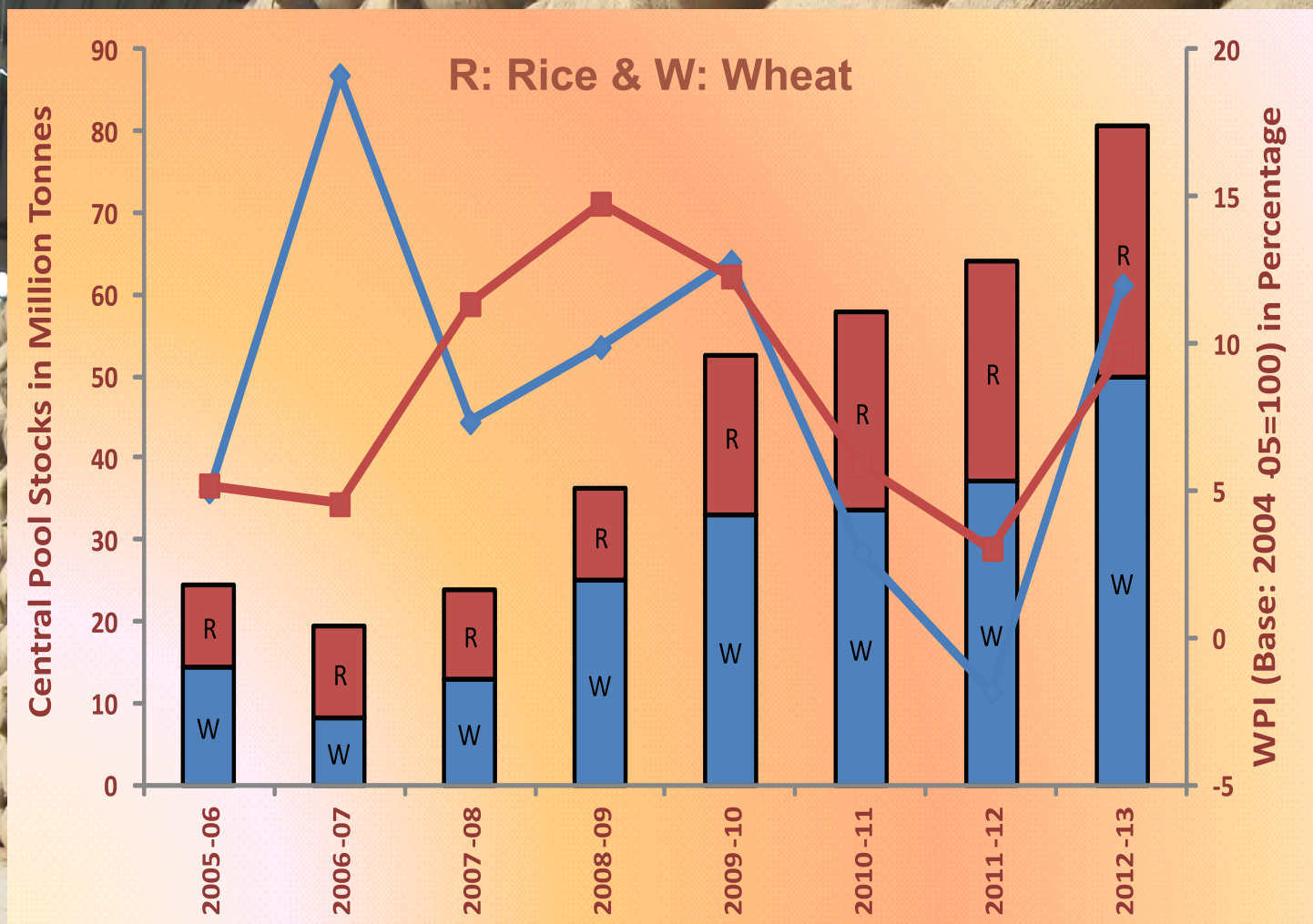


**Table - 6.1**  
**MSP Recommended by State Govts. for the Kharif Crops of 2013-2014**

State	Paddy (Common)	Paddy (Gr-A)	Jowar (Hybrid)	Jowar (Maldandi)	Bajra	Maize	Ragi	Moong	Urad	Tur	Groundnut- in-shell	Sesamum	Soya- bean (Yellow)	Soya- bean (Black)	Sunflower- seed	Niger- seed	Cotton	Cotton (Long Staple- Organic)	Cotton (Long Staple)	Cotton (Medium Staple)
Andhra Pd.	2547	2811	2334		2124	1937	2472	6849	6618	7010	5994	7847		3294	6119				7158	6575
Assam	1425	1470						3675	4800	3350		4400								
Anda. & Nico.	1200																			
Bihar	1614					1548														
Chhattisgarh	2050	2100				1250		6000	5200	6500	5000	5850	3150	3050	4600	4900				
Delhi																				
Gujarat	1300	1320	1600		1290	1330		4400	4300	4000	4000	4860						4100- 4600		3900- 4400
Haryana	1850				1400	1800														4200
Himachal Pd.	1250	1280	1500	1520	1175	1175	1500	3500	4300	3200	3700	4200	2240	2200	3700	3500			3900	3600
J & K	1800	2200				1750		6500	6500			10000								
Jharkhand	1394					1397		4707	4607	4010										
Karnataka																				
Kerala	1800	1850																		
Madhya Pd.	1600	1800	1700			1500				4200	3900	4600	2450			4050				4200
Maharashtra																				
Odisha	1700					1430		5200		3950	4000	4900				3700			5000	4500
Punjab	1750	1800				1700		5900	5700	5300	4900						4674			
Rajasthan			1800		1500	1500		4000	4500			4500					4500			
Tamil Nadu	2000	2100	1650		1600	1800	1800	5500	5200	5000	5000	6000			5000				4500	4000
Uttar Pd.	1810	2035	1655		1490	1480		4775	4565	4255	4025									
Uttarakhand																				
West Bengal	1430																			

Source : State Replies

# Challenge of Taming Prices & Bulging Stocks



सत्यमेव जयते

COMMISSION FOR AGRICULTURAL COSTS AND PRICES  
 Department of Agriculture & Cooperation  
 Ministry of Agriculture  
 Government of India  
 New Delhi  
 March 2013