

Price Policy for Kharif Crops

The Marketing Season 2015-16



Commission for Agricultural Costs and Prices

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Preface and Acknowledgements

The report 'Price Policy for Kharif Crops : The Marketing Season 2015-16' is brought out in pursuance of the mandate of the Commission for Agricultural Costs and Prices (CACP). While recommending Minimum Support Prices (MSP) of various kharif crops for the ensuing marketing season, the Commission has taken into account several factors, ranging from cost of production to demand and supply, price trends in domestic and international markets, inter-crop price parity, the likely impact of recommended MSPs on consumers and rational utilization of natural resources like land and water. In doing this, the Commission has delved into several inter-related issues such as labour productivity and water productivity. Augmenting water productivity will lead to higher production per drop of water by formulating suitable pricing policy of water to reflect its scarcity. In addition, based on simulation exercise, MSP of sunflower is directly linked to its basic 'oil content' to enhance resource use efficiency. This will incentivize cultivators to adopt better farming practices and processors to invest in modern technology.

I take this opportunity to express my gratitude to farmers and also their Associations, millers, senior officers from Central and State Governments who provided valuable insights into various aspects of kharif crops.

This report is the nectar of enormous analyses undertaken by the Commission level officers, ably supported by Advisers, Joint Director, Dy Director, Assistant Directors and other officers/staff. Their contribution to this report is no less than mine.

The Commission is of the considered opinion that the recommendations contained in this report would steer the system towards greater certainty, stability and rationality and will go a long way in putting kharif crops on a higher trajectory of growth.

(Dr. Ashok Vishandass)

27th March, 2015



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Acronyms

S. No.	Description
A ₂	Actual paid out cost
A ₂ +FL	Actual paid out cost plus imputed value of family labour
APEDA	Agricultural and Processed Food Products Export Development Authority
BE	Budget Estimates
C ₂	Comprehensive Cost including imputed rent and interest on owned land and capital
CACP	Commission for Agricultural Costs and Prices
CAP	Cover and Plinth
C&F	Cost and Freight
CBoT	Chicago Board of Trade
CIF	Cost, Insurance and Freight
CIPI	Composite Input Price Index
CoP	Cost of Production
CS	Comprehensive Scheme of Studying Cost of Cultivation of Principal Crops in India
CSO	Central Statistics Office
DAC	Department of Agriculture and Cooperation
DARE	Department of Agricultural Research and Education
DCP	Decentralized Procurement
DES	Directorate of Economics and Statistics
DFPD	Department of Food and Public Distribution
DGCIS	Directorate General of Commercial Intelligence and Statistics
DGFT	Directorate General of Foreign Trade

S. No.	Description
DIPP	Department of Industrial Policy and Promotion
DTA	Domestic Tariff Area
ECA	Essential Commodities Act
EDI	Electronic Data Interchange
EU	European Union
F&V	Fruits and Vegetables
FAI	Fertilizer Association of India
FAO	Food and Agriculture Organization
FAQ	Fair Average Quality
FCI	Food Corporation of India
FFPI	FAO Food Price Index
FOB	Free on Board
FPO	Farmer Producer Organizations
GCA	Gross Cropped Area
GCF	Gross Capital Formation
GDP	Gross Domestic Product
GoI	Government of India
GR	Gross Returns
GVO	Gross Value of Output
HSDO	High Speed Diesel Oil
IMD	Indian Meteorological Department
IPGA	India Pulses and Grains Association
IPP	Indices of Prices Paid
IPR	Indices of Prices Received
KMS	Kharif Marketing Season
LCS	Land Custom Stations
MEP	Minimum Export Price
MSP	Minimum Support Price
MSR	Marketed Surplus Ratio
MT	Million Tonnes
NAFED	National Agricultural Cooperative Marketing Federation of India Limited
NCAER	National Council of Applied Economic Research
NSS	National Sample Survey
NSC	National Seeds Corporation
NWR	Negotiable Warehouse Receipts

Acronyms

S. No.	Description
OEA	Office of Economic Adviser
OGL	Open General License
OWS	Other Welfare Schemes
p.a.	per annum
PDS	Public Distribution System
PRI	Panchayati Raj Institution
PSS	Price Support Scheme
Q1, Q2, Q3, Q4	Quarters pertaining to Calendar Year (unless otherwise specified)
Qtl	Quintal
SCH	Single Cross Hybrid
SEAI	Solvent Extractors' Association of India
SEZs	Special Economic Zones
SRW	Soft Red Winter
TE	Triennium Ending
ToT	Terms of Trade
TPDS	Targeted Public Distribution System
TRQ	Tariff Rate Quota
US	United States
USDA	United States Department of Agriculture
VLSC	Village Level Support Centre
VVOF	Directorate of Vanaspati, Vegetable Oils and Fats
WDRA	Warehousing Development and Regulatory Authority
WPI	Wholesale Price Index
wrt	with respect to
WTO	World Trade Organization



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Summary of Recommendations

S.1 The Commission is mandated to take into account the cost of production, overall demand-supply, domestic and international prices, inter-crop price parity, terms of trade between agricultural and non-agricultural sectors, the likely effect of the price policy on the rest of the economy, besides ensuring rational utilization of production resources like land and water while recommending Minimum Support Prices (MSPs). Based on the analyses undertaken within its mandate, the Commission makes the following non-price and price policy recommendations for kharif crops for the marketing season 2015-16.

Efficacy of Procurement

- S.2 Eastern belt of the country gets neglected in so far as procurement is concerned. For instance, there was almost negligible procurement of rice in Assam during TE 2013-14, even though it contributed 4.6 percent in the total rice production. The situation in other eastern states such as Bihar, West Bengal is somewhat better than that of Assam but not good enough when these states are compared with Punjab. Low procurement and weak marketing infrastructure has affected the market prices in these states which have been lower than MSPs. The perpetual neglect in procurement needs to be corrected on priority. The Commission recommends strengthening of market infrastructure and procurement system in the eastern belt to the level prevailing in the states of Haryana and Punjab.
- S.3 Burgeoning stocks of rice and wheat with FCI lead to increase in economic costs of procurement and thus escalate food subsidy bill. Excess stocks 'locked-in' with FCI reduce per capita availability of grains and consequently push the prices upwards due to avoidable supply constraint. To address this problem, FCI ought to devise a conscious policy on liquidation of stocks as and when these exceed buffer norms, either in global market or domestic market (OMSS).

Restructuring of NAFED

S.4 Large surplus of cereals in contrast to huge deficit of pulses and oilseeds (edible oils) presents a sort of paradox which can be mitigated by putting in place a credible procurement machinery for pulses and oilseeds. NAFED has not been performing its main objective function of procurement of oilseeds and pulses over the years which deters farmers from diversifying to pulses and oilseeds. A large number of farmers in Gujarat, just as an example, sold groundnut in 2014, at least 10 percent lower than the MSP, bears a testimony to this. It shakes the confidence of farmers in price support mechanism and explains in great measure their reluctance to diversify from paddy/wheat to oilseeds and pulses, the crops in which the country is deficient. There is an urgent need to restructure NAFED to enable them to accomplish their objective function. This will help farmers to diversify to pulses and oilseeds and will reduce skewedness in production pattern.

Right to Sell at MSP

S.5 Two most important procurement agencies of the Government of India namely FCI and NAFED were set up with the main objectives of procuring notified commodities at MSP, if and when the market prices go below MSP. These agencies have been in the existence for over 50 years and 30 years respectively. Yet, the benefits of MSP bypass a large section of farmers, rendering the pricing policy and procurement operations ineffective. As per Situation Assessment Survey (NSS 70th Round), only 2.57 million households were benefitted directly from procurement of paddy during 2012. The procurement of oilseeds and pulses is far worse. NAFED, for instance, procured only 3.21 percent of Kharif oilseeds in the last season. This calls for giving wide publicity about MSP and procurement agencies on radios, television and vernacular languages in popular local dailies, at least 15 days before the start of procurement operations so as to reach farmers far and wide. Furthermore, to instill confidence among farmers on procurement of their produce, a legislation conferring on farmers the right to sell their produce to the Government at MSP be brought out.

Reducing Import Dependence

S.6 In the backdrop of high import-dependence on Indonesia and Malaysia for edible oils, promoting oil palm in the country would benefit domestic farmers instead of those of Indonesia and Malaysia. In addition, this would be a land saving strategy as through the current mix of oilseeds, 4 million MT of domestic production of edible oils is being produced by using about 15.80 million hectares of land. This much quantity of palm

oil could be produced from just 1 million hectares. It is recommended that CACP's Report on 'Oil Palm: Pricing for Growth, Efficiency & Equity, Towards a Rational Pricing Policy for Fresh Fruit Bunches and Potential Solution for India's Burgeoning Edible Oil Imports' be implemented in the long term interest of the country.

Rationalization of Fertilizer Subsidy

S.7 The government currently spends over Rs.73,000 crores per annum on account of subsidy on fertilizers. Against subsidized administered price of urea at Rs.5360 per tonne, it is sold, at times, at Rs.9000 per tonne (Box-1.1 in Chapter-1) which is not helping poor farmers for whom subsidy is intended. If cash is transferred directly to the farmers on per hectare basis in lieu of fertilizer subsidy, it will eliminate black marketing/smuggling of urea, besides effecting an annual saving of Rs. 12178 crores. However, this Scheme can be implemented only after complete computerization of land records in the states. Therefore, all states need to be persuaded to undertake this exercise, if not already done.

Water Productivity

S.8 Water is increasingly becoming scarce in India with high opportunity costs. It is, therefore, imperative to augment the water productivity i.e. water intake per kilogram of production. West Bengal, just as an example, consumes 2605 litres of water to produce a kilogram of rice compared to 5337 litres being guzzled by Punjab. The efficiency gap with respect to consumption of water in Punjab (the most efficient in terms of land productivity) is over 51 percent. This shows that the most efficient state in terms of land productivity is not the most efficient if other factor of production viz. water is factored into.

S.9 The country's farm sector alone accounts for 83 percent of all water use and therefore judicious use of water in agriculture will have significant impact on the overall availability of water. However, most state governments have been content with subsidising electricity for pumping irrigation water, which leads to inefficiencies. The Commission recommends economy in water use in agriculture by fixing quantitative ceilings on per hectare use of both water and electricity. If some farmers are able to use water /electricity less than the ceilings fixed for them, they should be rewarded by cash incentive equivalent to unused units of water /power at the rates of their domestic resource costs. This would encourage farmers to use drip irrigation and would enhance production per drop of water.

Low Labour Productivity: Farm Mechanization

- S.10 Low labour productivity in agriculture just at 17 percent compared to that of non-agriculture sector is exacerbated by migration of 44 lakh agricultural labourers every year. To respond to this, traditional farming occupations need to be replaced by widespread adoption of farm mechanization. For this purpose, a Scheme to develop a cooperative based 'Custom Hiring Model' under which a variety of machines for different farming operations be offered on rent. While doing this, care should be taken to customize the machines according to domestic requirement because imported machinery is not always suited for Indian crop architecture.

Benchmark Districts

- S.11 District-wise analyses show that certain districts stand out in terms of their productivities which needs to be emulated to make optimal utilization of scarce land. For instance, Kolhapur, Satara and Sangli in Maharashtra have far higher productivity of soyabean than all-India average. While these districts may have certain advantages in terms of natural endowment, they could be following different farming practices and applying better inputs which need to be explored separately. 'Village Level Support Centre' (VLSC) be developed for small/marginal farmers by State Governments in consultation with PRIs to provide services ranging from modern scientific cultivation practices, improved seed varieties, soil testing services to dissemination of information on weather and markets. This will help augmenting productivity levels, containing the cost of production and enhancing returns to farmers.

International Competitiveness

- S.12 Import duty ought to escalate from raw material to finished product i.e. raw material should attract low duty which should increase for intermediate goods and be further increased for finished product. However, it attracts a sort of inverted duty structure in so far as oilseeds/edible oils are concerned. It is high at 30 percent for raw material i.e. oilseeds and low at 7.5 percent for crude oil and in between at 15 percent for finished product i.e. refined oil. The Commission recommends that import duty for oilseeds be fixed at 5 percent instead of current 30 percent, be raised to 10 percent and 17.5 percent in cases of crude and refined oil respectively. It will address, to some extent, the issue of blending of relatively less expensive imported oil (palm oil) with domestically produced oils viz. groundnut, soyabean and sunflower. It is imperative to continuously monitor domestic and international price trends and identify the trigger points to tweak tariff rates so that these remain relevant and rational in changing global scenario.

Price Policy Recommendations

S.13 Taking its terms of reference into consideration, the Commission recommends the MSPs for fourteen kharif crops for the KMS 2015-16 as given in the Table-S.1.

Table-S.1: MSPs Recommended for KMS 2015-16

(Rs./quintal)

S.N.	Crop	Projected Costs, 2015-16			Recom- mended MSP for KMS 2015-16	Justification	MSP (Market- ing Season)		Gross Margins (over A ₂ +FL w.r.t. MSP now being recommended (Percent)
		A ₂	A ₂ +FL	C ₂			2014- 15	2013- 14	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	Paddy Common	780	1020	1324	1410 (3.7)	Excessive stocks with FCI. Recommended MSP fully covers cost.	1360 (3.8)	1310 (4.8)	38.2
2	Paddy grade A	-	-	-	1450 (3.6)		1400 (4.1)	1345 (5.1)	
3	Jowar-hybrid	1170	1467	1929	1570 (2.6)	Even though both domestic and international prices are subdued, a nominal increase in MSP is recommended due to increase in input cost.	1530 (2.0)	1500 (0.0)	7.0
4	Jowar-Maldandi	-	-	-	1590 (2.6)		1550 (2.0)	1520 (0.0)	
5	Bajra	535	893	1154	1275 (2.0)	Recommended MSP fully covers cost.	1250 (0.0)	1250 (6.4)	42.8
6	Ragi	1196	1688	2069	1650 (6.5)	Recommended MSP is in response to both high domestic prices and costs.	1550 (3.3)	1500 (0.0)	-3.7
7	Maize	696	941	1223	1325 (1.1)	Even though both domestic and international prices are subdued, a nominal increase in MSP is recommended due to increase in input cost. Recommended MSP fully covers cost.	1310 (0.0)	1310 (11.5)	40.8
8	Tur (Arhar)	2453	3237	4272	4425 (1.7)	Recommended MSP fully covers cost.	4350 (1.2)	4300 (11.7)	36.7
9	Moong	2714	3993	5025	4650 (1.1)	To keep inter-crop parity within kharif pulses.	4600 (2.2)	4500 (2.3)	16.5
10	Urad	2529	3455	4483	4425 (1.7)		4350 (1.2)	4300 (0.0)	28.1
11	Groundnut	2584	3314	4195	4030 (0.8)	Even though both domestic and international prices are subdued, a nominal increase in MSP is recommended due to increase in input cost.	4000 (0.0)	4000 (8.1)	21.6
12	Sunflower seed	2846	3282	4114	3800 # (1.3)		3750 (1.4)	3700 (0.0)	15.8

S.N.	Crop	Projected Costs, 2015-16			Recommended MSP for KMS 2015-16	Justification	MSP (Marketing Season)		Gross Margins (over A_2 +FL) w.r.t. MSP now being recommended (Percent)
		A_2	A_2 +FL	C_2			2014-15	2013-14	
13	Soyabean (Yellow)	1527	1770	2418	2600 (1.6)	Recommended MSP fully covers cost.	2560 (0.0)	2560 (14.3)	46.9
14	Soyabean (Black)	\$	\$	\$	\$		2500 (0.0)	2500 (13.6)	-
15	Sesamum	2765	4132	5189	4700 (2.2)	To maintain inter-crop parity.	4600 (2.2)	4500 (7.1)	13.7
16	Nigerseed	2119	3146	4068	3650 (1.4)	Recommended MSP is in response to both high domestic prices and costs.	3600 (2.9)	3500 (0.0)	16.0
17	Cotton (Medium Staple)	2228	2753	3767	3800 (1.3)	Even though both domestic and international prices are subdued, a nominal increase in MSP is recommended due to increase in input cost. Recommended MSP fully covers cost.	3750 (1.4)	3700 (2.8)	38.0
18	Cotton (Long staple)	-	-	-	4100 (1.2)		4050 (1.3)	4000 (2.6)	-

\$: Based on discussions with the senior officers and scientists of major soyabean producing states namely Madhya Pradesh, Maharashtra and Rajasthan, it emerged that soyabean (black) is not being produced in any of these states for quite some time. The cost of production of soyabean (black) reported in CACP's reports on "Price Policy for Kharif Crops", various issues, pertained to soyabean (yellow). In view of this, the Commission recommends that MSP of soyabean (black) not be fixed.

: Corresponding to oil content of 35 percent.

Note : Figures in parentheses represent increases in MSP over the previous year.

Incentivising Efficiency: Linking MSP of Sunflower seeds with Its Oil Content

- S.14 Based on efficiency consideration, the Commission recommends that MSP of sunflower be directly linked to the basic 'oil content' of 35 percent and farmers be given an additional Rs.14.90 per quintal for every 0.25 percent point increase in the oil content beyond this level. This will incentivize cultivators to adopt better farming practices and processors to invest in modern technology.
- S.15 Implementation of the recommendation on linking MSP of sunflower with its oil content requires installation of apparatus/equipment in procurement centres to objectively measure the oil content. The Commission is aware of the fact that such equipments are not commonly seen in mandis/procurement centres, possibly due to its low demand. However, this should not be construed as its non-availability. The equipment is not highly sophisticated and can be procured/ made to order with a little extra effort.



CHAPTER-1 An Overview

Chapter 1

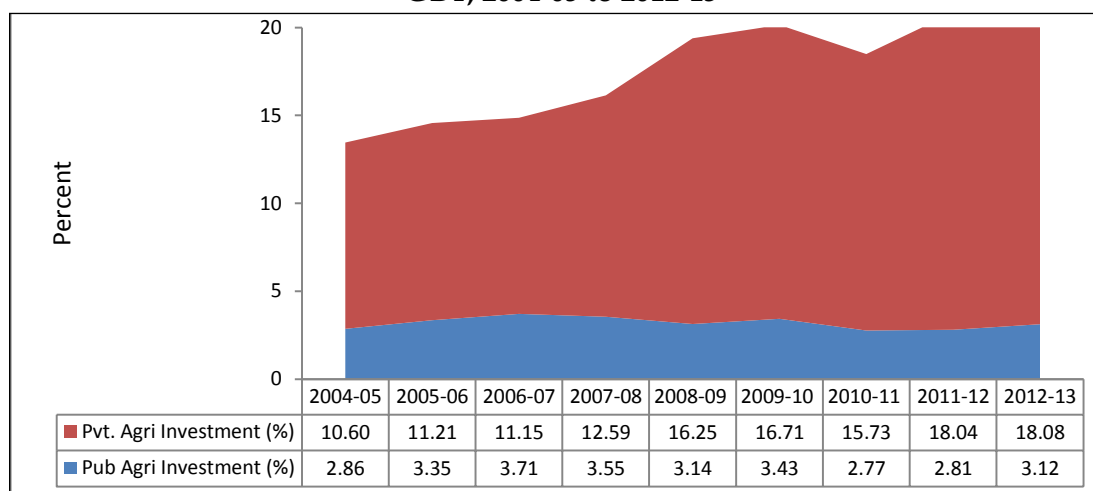
Performance of Agricultural Sector

- 1.1 India is set to produce 257.07 million tonnes of foodgrains in 2014-15, 3 percent lower than 265.57 million tonnes achieved in 2013-14. In fact, production of major crops, except sugarcane, is expected to be lower in varying magnitudes during 2014-15 due to deficient monsoon rainfall in the country by 12 percent. The production of rice is expected to be 103.04 million tonnes, coarse cereals at 39.83 million tonnes, pulses at 18.43 million tonnes, nine major oilseeds at 29.8 million tonnes and cotton at 35.15 million bales in 2014-15. In terms of percent downfall, the production of rice is expected to be lower by 3.4 percent, coarse cereals by 8 percent, pulses by 7 percent, oilseeds by 9 percent and cotton by 2 percent during 2014-15 compared to what were achieved during 2013-14. Vagaries of weather impacted not only loss in productivities but also area coverage (except cotton) and consequently their production. However, area under cotton increased by 8.45 percent during 2014-15. Agri-GDP is likely to post just 1.1 percent growth in 2014-15 compared to 3.7 percent achieved in 2013-14. Robust production of sugarcane, which has 94 percent of area irrigated, demonstrates the way of becoming independent of sub-optimal monsoon. This gives a signal to ensure investment in irrigation so as to minimize the impact of sub-optimal performance of monsoon on crop output.
- 1.2 Area under most of the kharif crops, particularly coarse cereals, pulses and oilseeds has declined during 2014-15 due to deficient and delayed rainfall. The erratic rainfall and dry spells have impacted the productivity, leading to decline in expected production of Kharif foodgrains at 123.78 million tonnes in 2014-15 which is 4 percent lower than the production of 129.24 million tonnes in 2013-14. Rice production is expected to be 90 million tonnes in kharif 2014-15 compared to 92 million tonnes in kharif 2013-14. The production of Kharif coarse cereals, pulses and oilseeds in 2014-15 is 29 million tonnes, 5.5 million tonnes and 20 million tonnes respectively against 31 million

tonnes, 6 million tonnes and 23 million tonnes in 2013-14. Groundnut production shows a major fall of 25 percent at 6 million tonnes during Kharif 2014-15 as against 8 million tonnes in Kharif 2013-14 because of the low price realization in the wake of bumper harvest of the crop during 2013-14. Cotton production in 2014-15 has fallen by 3 percent at 35 million bales (of 170 Kg each) from 36 million bales during 2013-14. The production shares of kharif crops during TE 2014-15 are depicted in Annex Charts-1.1 (i) to (xiv).

- 1.3 Share of Gross Capital Formation (GCF) of Agriculture and Allied Sector in the total GCF has fallen from 11 percent in 2002-03 to 7 percent in 2012-13. This trend is in line with the falling share of agri-GDP in the total GDP. However, considering that a high percentage of population is dependent on agriculture for its livelihood, there is a need to increase the agri-investment for improving the growth in agriculture. Though agri-GCF as percent of agri-GDP has increased from 13 percent in 2004-05 to 21 percent in 2012-13, the growth has been mainly in the private investment which has increased from 11 percent in 2002-03 to 18 percent in 2012-13 (Chart-1.1). Public investment in agriculture needs to be improved for achieving higher growth in agriculture sector.

Chart-1.1: Investment in Agriculture (Private and Public) as Percent of Agri GDP, 2004-05 to 2012-13



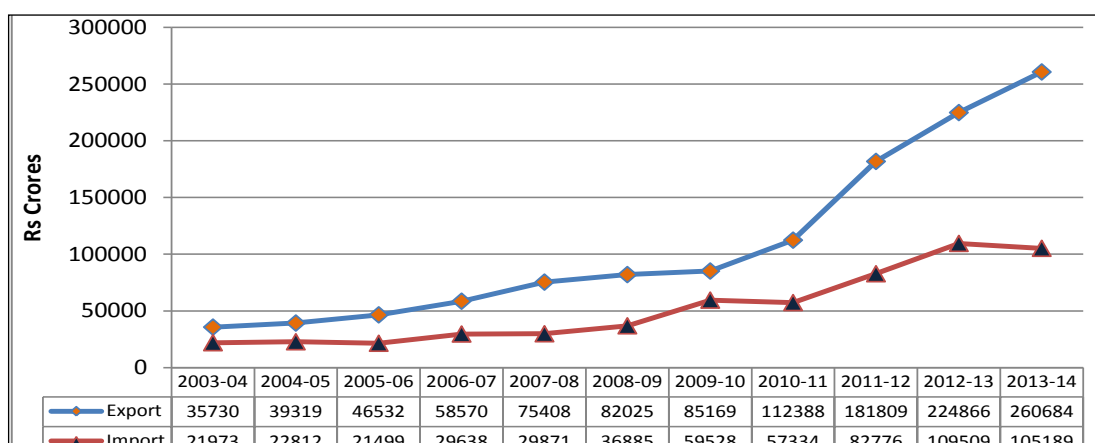
Source: CSO, GoI

India's Agriculture Trade Scenario

- 1.4 Indian agriculture is globally competitive as revealed by Balasa index which is 1.6 for agriculture compared to less than unity for Indian industry and this explains India being a net exporter of agricultural commodities (Chart-1.2). The competitiveness of

Indian agriculture can be tapped even more to the benefit of farmers by a stable, predictable and rational agricultural trade policy which has been discussed in detail in Chapter-5.

Chart-1.2: India's Exports and Imports of Agri-Commodities, 2003-04 to 2013-14

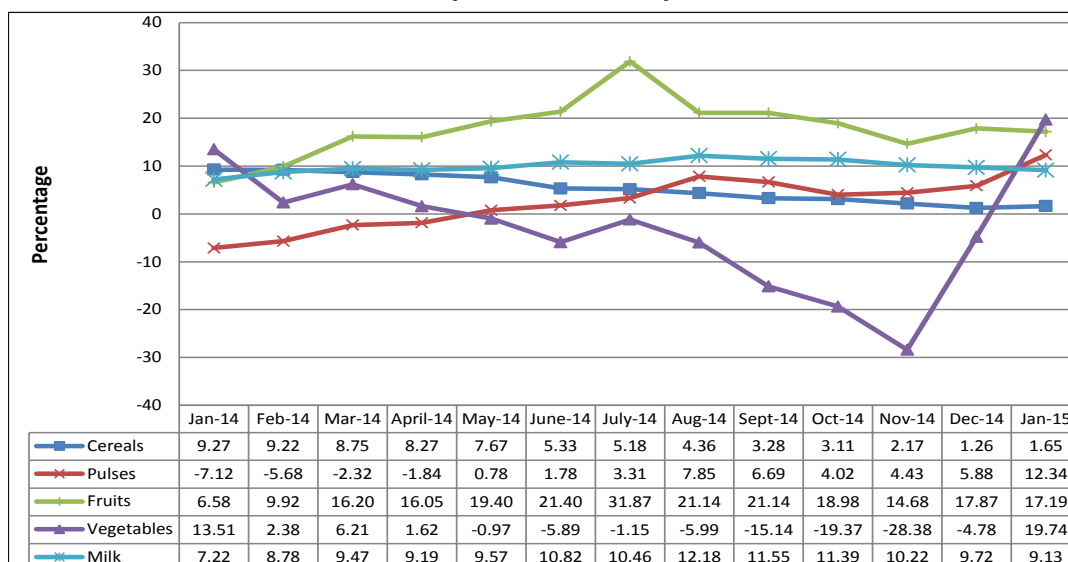


Source: DGCIS, GoI

Contribution of Primary Food Articles to Inflation

- 1.5 There was an overall deflation in January 2015 over December 2014 in terms of WPI as the rate of inflation fell from 0.11 percent in December 2014 to -0.39 in January 2015. However, food inflation rose from 5.20 percent in December 2014 to 8 percent in January 2015. The major contributors to this was vegetables, fruits, milk and pulses. Inflation in fruits and milk has declined from 17.87 percent and 9.72 percent in December 2014 to 17.19 percent and 9.13 percent respectively in January 2015. It follows that major contributors to food inflation are fruits & vegetables and pulses whereas contribution of cereals is negligible (Chart-1.3).

Chart-1.3: Inflation, January 2014 to January 2015 (WPI Based)



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

Excessive Stocks with the Central Pool

1.6 The total buffer stock norms in central pool will now be 21.04 million tonnes, 41.12 million tonnes, 30.77 million tonnes and 21.41 million tonnes as on 1st April, 1st July, 1st October and 1st January, respectively, as per the revised norms notified by the Government of India in January, 2015 (Table 1.1).

Table-1.1: Buffer Norms of Foodgrains in the Central Pool

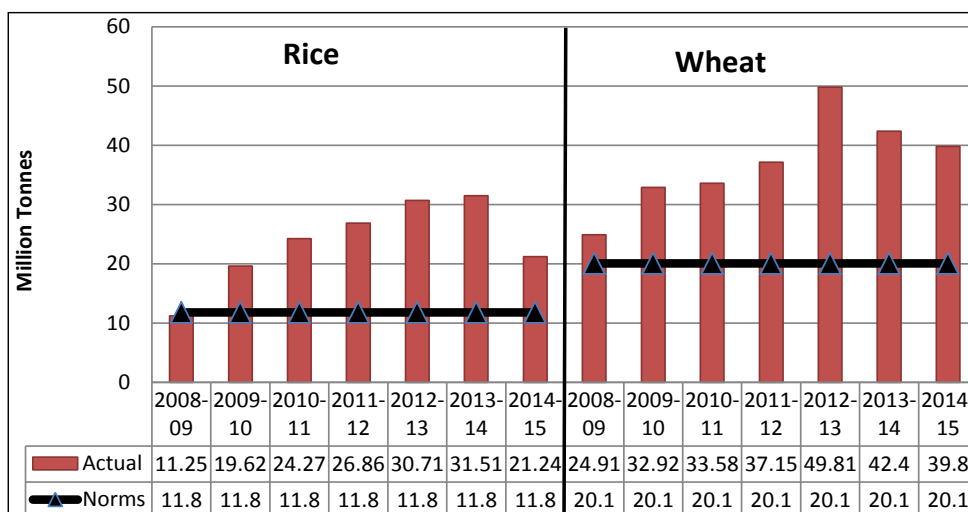
(Million Tonnes)

S.No.	As on	Total stocks	Of which, rice
(1)	(2)	(3)	(4)
1	1st April	21.04	13.58
2	1st July	41.12	13.54
3	1st October	30.77	10.25
4	1st January	21.41	7.61

Source: DFPD, GoI

1.7 The central pool stock of rice was 11.74 million tonnes against revised norms of 7.61 million tonnes as on 1st January 2015, which is 54 percent in excess of the stipulated norms. Stock position in respect of rice and wheat during 2008-09 to 2014-15 is at (Chart-1.4).

Chart-1.4: Central Pool Stocks with FCI, 2008-09 to 2014-15



Source: FCI

Note: Stocks are shown as on 1st July of each year.

- 1.8 Burgeoning stocks have their own opportunity cost, lead to increase in economic costs of procurement and thus higher food subsidy bill. Excess stocks 'locked-in' with FCI reduce per capita availability of grains and consequently push the prices due to artificial supply constraint. To address this problem, FCI ought to devise a conscious policy on liquidation of excess stocks either in global market or domestic market (OMSS).

Soil Health Card Scheme

- 1.9 The Soil Health Card Scheme which has been launched by the Government in January, 2015 envisages a Soil Health Card to every farmer. The card will carry crop-wise recommendations of nutrients/fertilizers required for the farm, making it possible for farmers to improve productivity by using appropriate inputs. This will help to assess the soil health at regular intervals so as to ensure that farmers apply the required nutrients while taking advantage of the nutrients already present in the soil. The card is used to assess the current status of soil health and to determine changes over a period of time that are affected by land use. Overall, this will enable farmers to appraise soil health and accordingly use soil nutrients which will give a boost to agriculture. It is necessary that adequate soil testing labs be set up or mobile soil testing facilities be made available even in remote areas which will go a long way in augmenting productivity levels.

Fertilizer Subsidies

- 1.10 Urea, the only controlled fertilizer, is sold at statutory notified uniform sale price (currently at a low of Rs.5360 tonne) and decontrolled Phosphatic and Potassic fertilizers are sold at indicative maximum retail prices (MRPs). As the price of urea has remained fixed while those of P & K have increased faster, the differential between the prices of urea and P & K fertilizers has widened leading to excess use of N at the cost of P&K fertilizers. For instance, the price of urea at Rs.5360/tonne (due to subsidy) is low in relation to about Rs.24,000 per tonne of DAP and Rs.16,700 per tonne of MoP. As against recommended doses of N:P:K in the ratio of 4:2:1, the actual consumption is highly skewed (Table-1.2). This has led to imbalanced use of soil nutrients which adversely affects productivity levels.

Table-1.2: Relative Consumption of Three Fertilizer Nutrients (N:P:K)

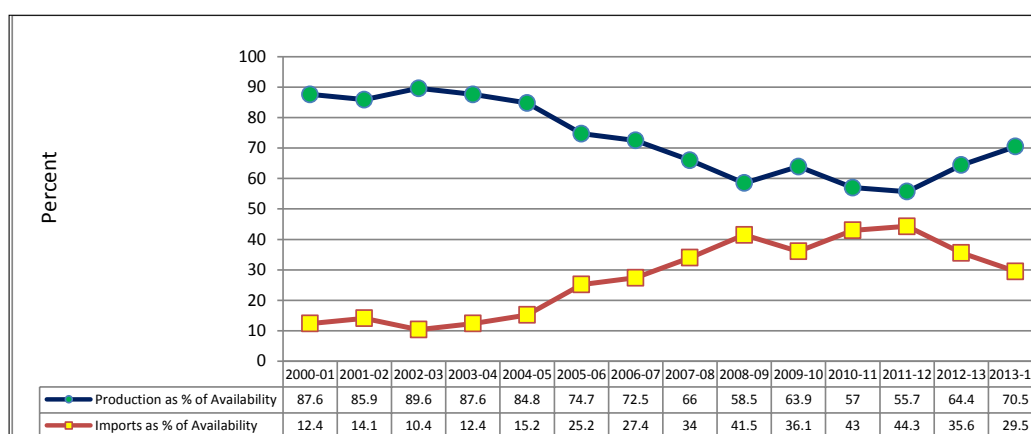
(Million Tonnes)

S.N.	Year	AP	Haryana	Punjab	Rajasthan	All India
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	2000-01	7:3:1	74:21:1	43:12:1	92:31:1	7:3:1
2	2007-08	4:2:1	40:11:1	34:9:1	34:13:1	6:2:1
3	2008-09	4:2:1	32:11:1	24:7:1	30:14:1	5:2:1
4	2010-11	4:2:1	21:7:1	19:6:1	25:12:1	5:2:1
5	2011-12	6:3:1	27:9:1	27:9:1	35:16:1	7:3:1
6	2012-13	7:3:1	61:19:1	62:19:1	45:17:1	10:3:1

Source: IFFCO and FAI

- 1.11 Inappropriate policy design of fertilizer pricing has also led to rising dependence on imports of fertilizers (Chart-1.5).

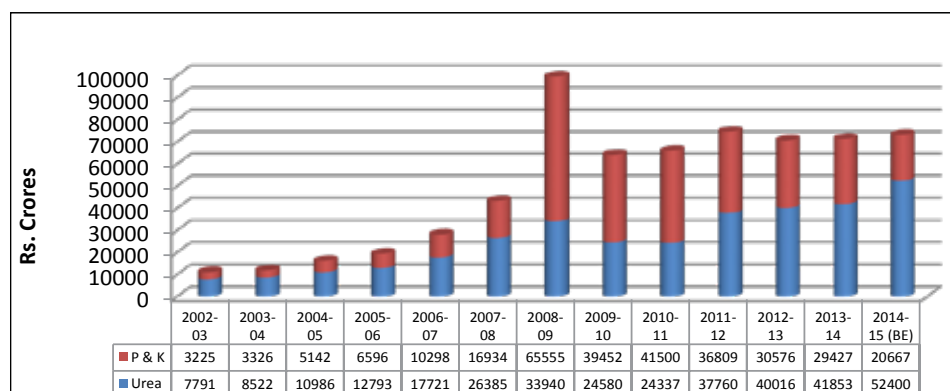
Chart-1.5: Rising Dependence on Imported Fertilizers, 2000-01 to 2013-14



Source: Department of Fertilizers, Government of India

- 1.12 Fertilizer subsidy has increased by around six times in the last 14 years from Rs 12,695 crore in 2001-02 to over Rs 73000 crore (Chart-1.6) in 2014-15, registering an average growth at 20 percent per annum. Increase in the fertilizer subsidy has primarily been due to increased consumption of fertilizers and sharp increase in prices of finished fertilizers. This has widened the gap between the normative delivered cost of fertilizers at the farm gate level and the actual prices paid by the farmer leading to bloated fertilizer subsidies.

Chart-1.6: Subsidy on Fertilizers, 2002-03 to 2014-15



Source: Department of Fertilizers, Government of India

- 1.13 Lower prices of urea in relation to those of other two nutrients not only cause distortion in its usage but also lead to black marketing (Box-1.1) and smuggling to neighbouring countries simply because of subsidized prices of urea in the country.

Box-1.1: Who Benefits from Fertilizer Subsidy?

“Urea nahi milene par kissan bhadke” (Farmers Agitated on non-availability of Urea) reported ‘Patrika’, published from Jabalpur (M.P), on 20.01.2015. According to this, farmers were distressed due to non-supply of urea as per their requirement at the price of Rs. 5360/- per tonne fixed by GOI. It was alleged that urea was being sold at prices higher than the price fixed by the GOI. Such a situation adversely affects crop productivity and consequently the returns on investments of farmers. The going rate of urea in Jabalpur was said to be Rs.450/- per bag of 50 kilograms i.e. Rs. 9000/- per tonne at that time. The point to be pondered is: **do farmers benefit from this kind of subsidy regime? If not, why not to redesign the policy on fertilizer subsidy?**

- 1.14 Within the existing framework, all farmers irrespective of their land holding sizes are entitled to subsidy on fertilizers. Given the inequity in the land distribution, a uniformly applicable subsidy is biased towards large land owners. To address the issue of non-availability of urea at administered prices to small and marginal

farmers and also its skewed distribution, a more efficient method is to provide direct subsidy to the farmers. Given the gross cropped area (GCA) of 195.1 million hectares and that the Government spends over Rs. 73,000 crores every year on account of fertilizers subsidy, annual per hectare subsidy works out to Rs.3742. In other words, the poorest farmer who has the smallest holding gets no more than Rs.3800/ha. per annum. If cash amount @ Rs. 4000/ha. is transferred in lieu of fertilizer subsidy to marginal farmers and to others in a graded system as indicated in Table-1.3, the total bill on account of subsidy can be contained to Rs. 60822 crores during 2015-16. Thus, a saving of Rs. 12178 crores would be made if we switch over to direct cash transfer to farmers in lieu of fertilizer subsidy.

Table-1.3: Cash Transfer in Lieu of Fertiliser Subsidy

S.N.	Size-class	Area Operated ('000 ha.)	Gross Cropped Area ('000 ha.)	Cash transfer proposed (Rs. /ha.)	Total cash transfer proposed {Col(4)*col.(5)} (Rs. Crores)
(1)	(2)	(3)	(4)	(5)	(6)
1	Marginal Farmers (< 1 ha.)	35410	43400	4000	17360
2	Small Farmers(1-2 ha)	35136	43064	3500	15072
3	Semi medium Farmers(2- ha)	37547	46019	3000	13806
4	Medium Farmers (4-10 ha)	33709	41315	2500	10329
5	Large Farmers (> 10 ha)	17379	21301	2000	4260
6	Total	159181	195100	-----	60822

Source: Agriculture Census, 2010-11 (Oct, 2012), Ministry of Agriculture, New Delhi {for col. (2) to (4)}

- 1.15 Cash transfer directly to the farmer in lieu of fertilizers will benefit them as they would be empowered to choose the fertilizer combination best suited to their soil texture without the influence of the distorted price relatives of NPK. This is a win-win situation where Government would be saving about Rs.12178 crores and farmers' would be empowered to decide for themselves as to which fertilizer to apply and in the process their distress and duress will also be mitigated. However, this Scheme can be effective only after complete computerization of land records in the states. Therefore, all states need to be persuaded to undertake this exercise if not already done.

Edible Oils and Pulses

- 1.16 India's imports of edible oils and pulses were valued at over Rs.67000 crores in 2014-15. Heavy dependence on the imports of these commodities is a sort of paradox. On one hand, the country is saddled with excess stocks of rice and wheat and on the other, deficient in oilseeds (also pulses). Lack of robust and dependable procurement machinery for oilseeds and pulses do not enthuse farmers to diversify towards these crops as NAFED has not been able to procure significant quantities of pulses and oilseeds. Unless some credible measures to strengthen procurement of these commodities are taken, farmers of other countries such as Indonesia and Malaysia will continue to benefit at the cost of Indian farmers.

Structure of the report

- 1.17 Chapter-2 of this report outlines the demand-supply scenario and efficacy of price policy. In Chapter-3, water productivity of paddy has been discussed to sensitize rational utilization of water to increase production per drop of water, besides appraising benchmarking districts, states and countries on land productivity scales. This Chapter also analyses labour productivity and seeks to establish an explicit link, based on simulation exercise, between the recommended MSP of sunflower and its oil content. Chapter-4 presents cost of production and returns of different kharif crops. Chapter-5 deals with domestic prices in relation to international prices and trade policies with a view to aligning with international trade. Finally, major highlights of all chapters, leading to the key price and non-price policy recommendations, are presented in Chapter-6.



CHAPTER-2

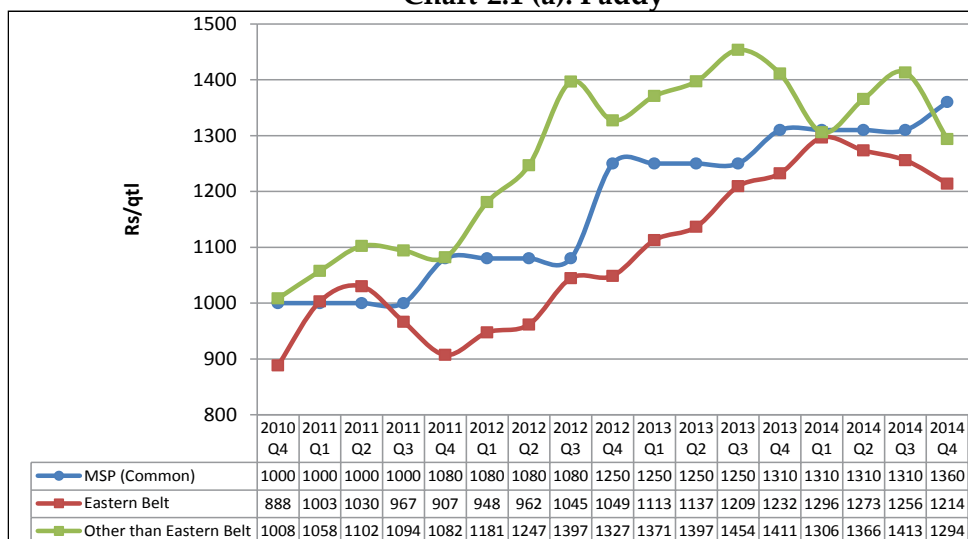
Demand-Supply and Procurement Operations

Wholesale Prices and MSP

2.1 Wholesale prices of kharif crops during 2010 to 2014 have been generally ruling above their respective MSPs, albeit with some aberrations, notable exceptions being paddy in eastern belt, maize and groundnut. Charts-2.1 (a) to (h) present the movement of wholesale prices vis-à-vis MSPs of paddy, maize, tur, moong, urad, groundnut, soyabean and cotton respectively.

Chart-2.1: Wholesale Prices vis-à-vis MSP, 2010 to 2014

Chart-2.1 (a): Paddy



Source: DES, Ministry of Agriculture, Govt. of India

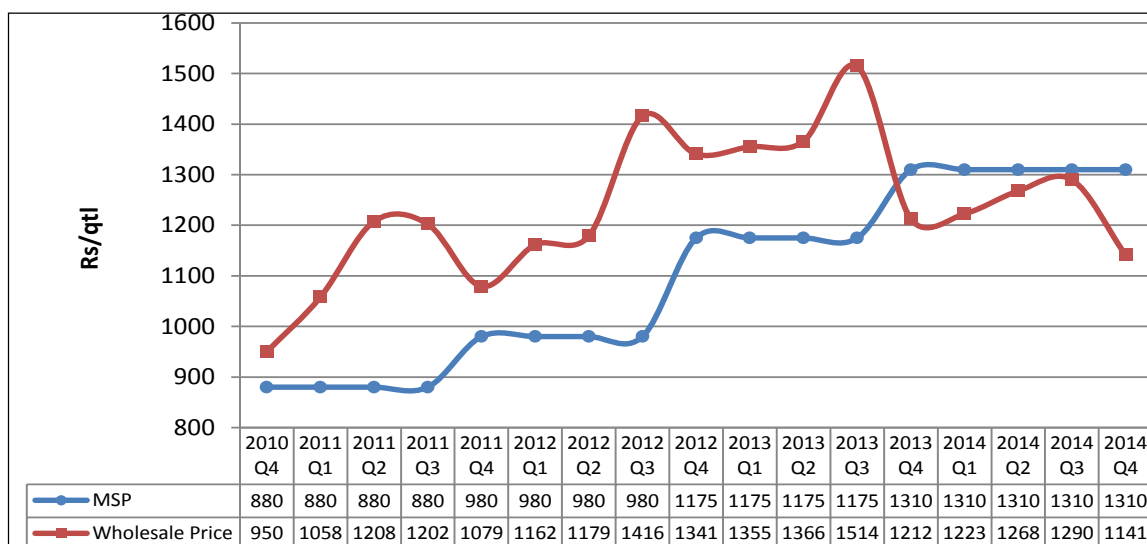
Note: i. Eastern Belt include Assam, Bihar, Odisha, UP and WB

ii. "Other than Eastern Belt" includes AP, Chhattisgarh, Gujarat, Karnataka, Kerala, Maharashtra, Punjab and TN

2.2. Chart-2.1(a) depicts low market prices of rice in eastern belt of Assam, Bihar and West Bengal compared to both MSP and prices prevailing in other states (other than eastern belt). This is mainly due to low procurement and weak marketing infrastructure in the eastern belt. This calls for upgradation and expansion of procurement system

along with necessary supporting market infrastructure in this region to the level prevailing in states like Haryana and Punjab.

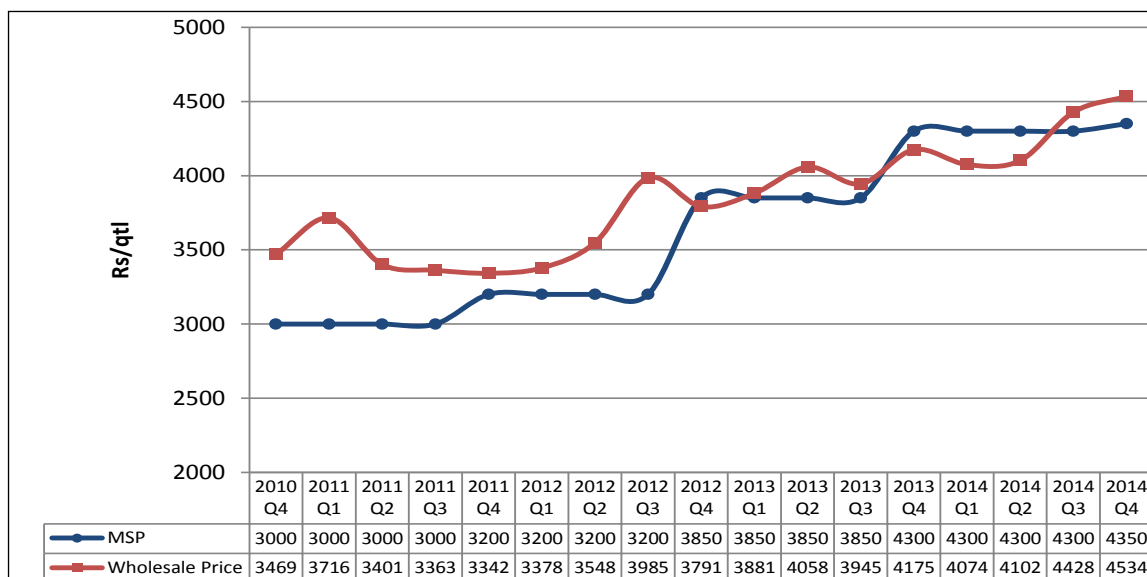
Chart-2.1 (b): Maize



Source: DES, Ministry of Agriculture, Govt. of India

Note: Average wholesale prices of AP and Karnataka

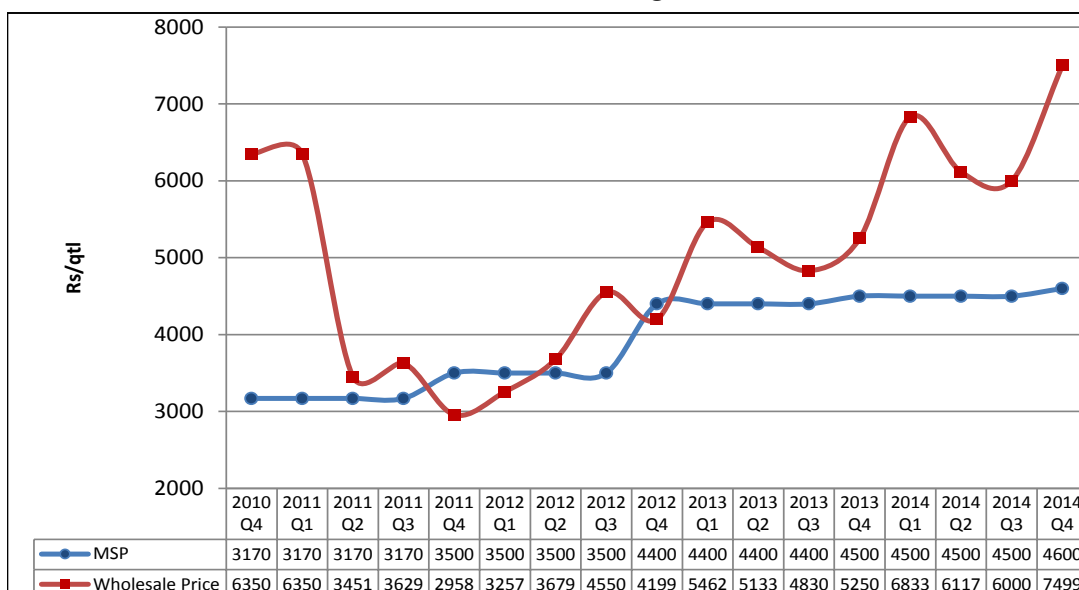
Chart-2.1 (c): Tur



Source: DES, Ministry of Agriculture, Govt. of India

Note: Average wholesale prices of AP and Karnataka

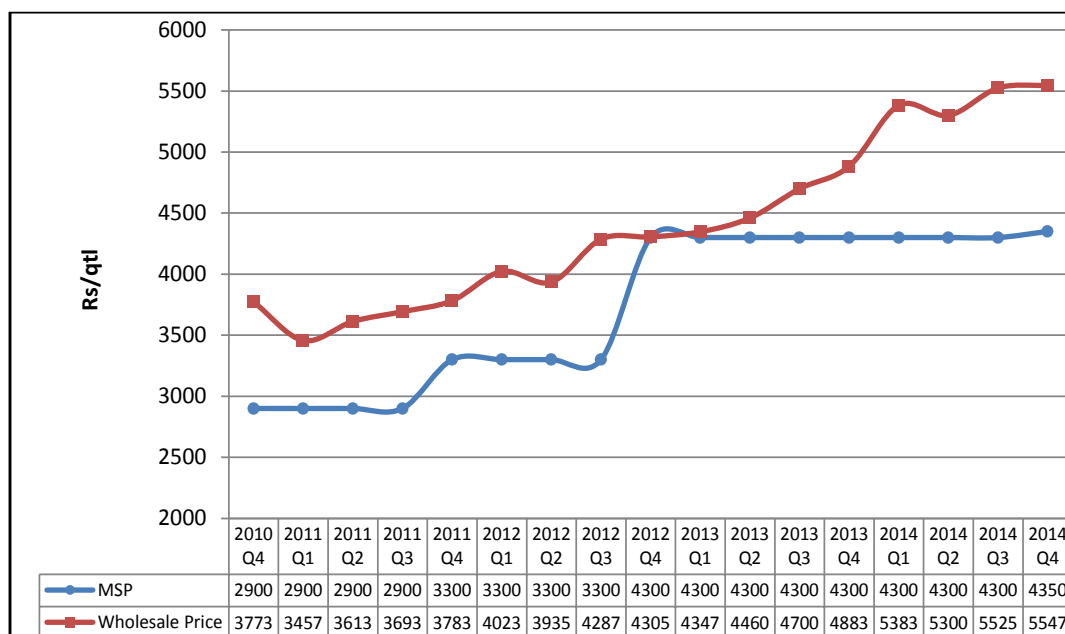
Chart-2.1 (d): Moong



Source: DES, Ministry of Agriculture, Govt. of India

Note: Average wholesale price in Rajasthan

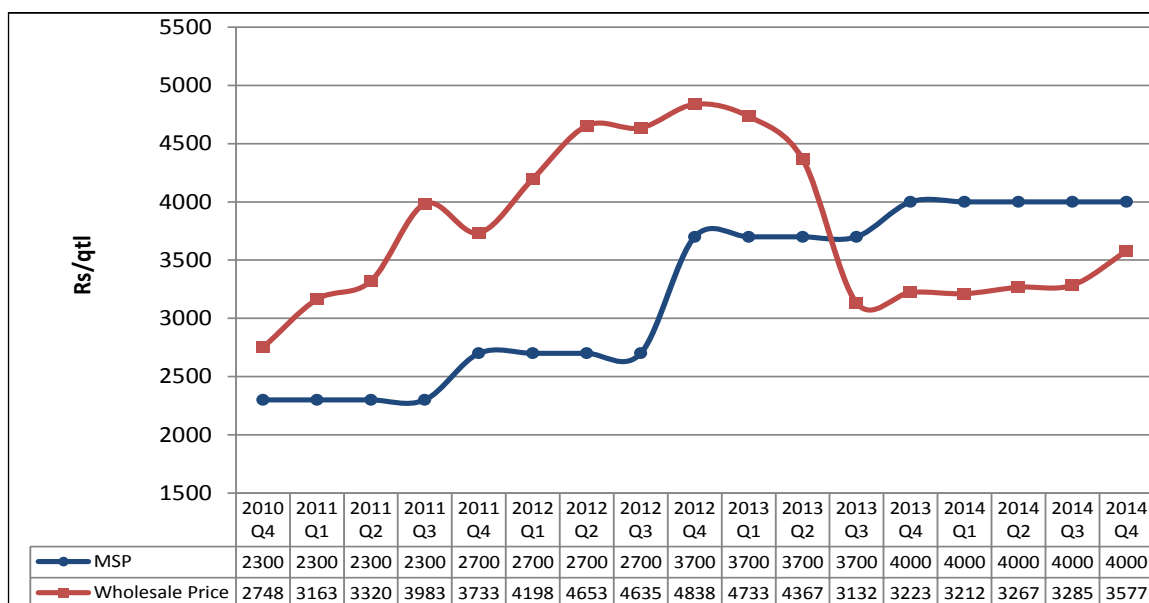
Chart-2.1 (e): Urad



Source: DES, Ministry of Agriculture, Govt. of India

Note: Average wholesale price in UP

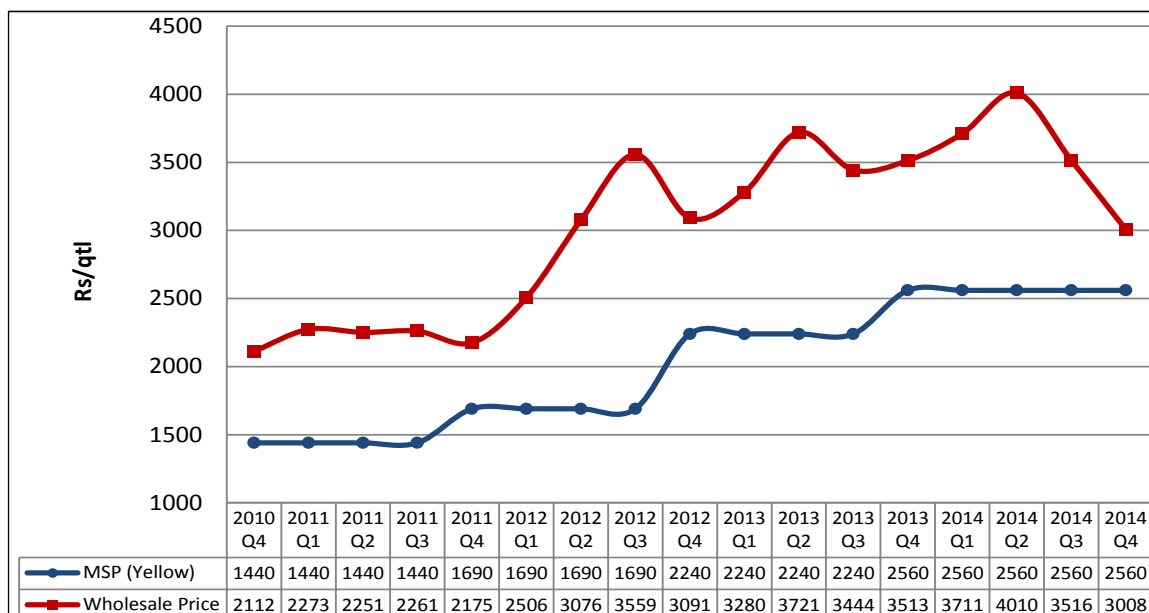
Chart-2.1 (f): Groundnut



Source: DES, Ministry of Agriculture, Govt. of India

Note: Average wholesale price in Gujarat.

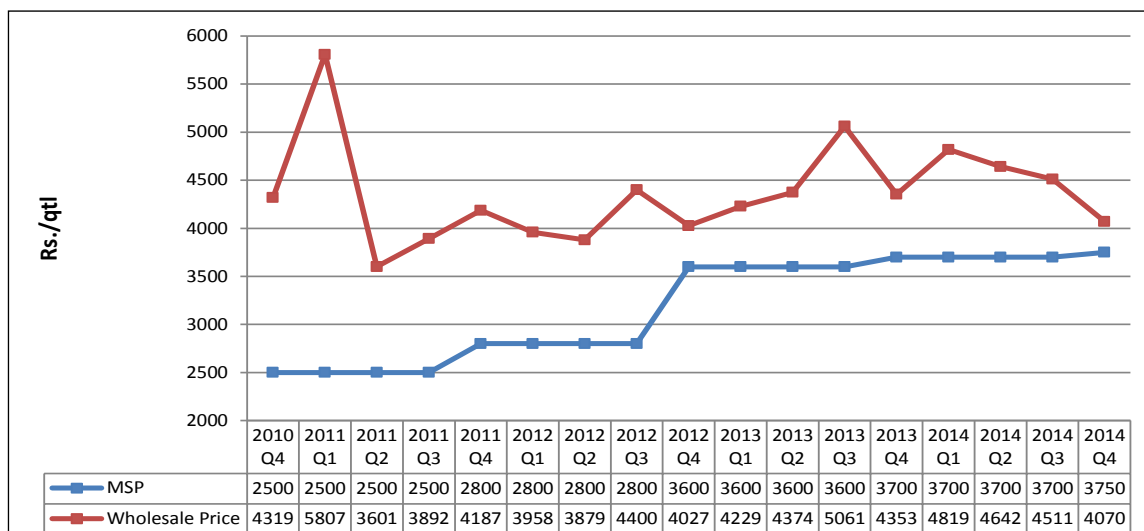
Chart-2.1 (g): Soyabean



Source: DES, Ministry of Agriculture, Govt. of India

Note: Average wholesale price in MP.

Chart-2.1 (h): Cotton



Source: DES, Ministry of Agriculture, Govt. of India

Note: Average wholesale price of AP and Gujarat.

2.3 China, the largest importer of cotton, has created cotton reserves of 11 million tonnes which is adequate for more than 15 months' of their consumption and is currently not importing cotton in a big way. This has led to huge stocks in the country. The cotton prices have declined not only in India but also globally. It appears that the cotton prices will remain under pressure till September, 2015. Under these circumstances, Government of India should support cotton farmers by strengthening the procurement machinery and undertaking MSP operations so as to ensure remunerative prices to farmers. At the same time, alternative avenues for exporting more cotton to countries like Bangladesh, Vietnam, Thailand, Indonesia, Pakistan and other East Asian countries be explored.

Procurement – Policy and Operation

2.4 Rice procurement has increased from 16 million tonnes in 2002-03 to 34 million tonnes in 2012-13 before declining to 32 million tonnes in 2013-14. Procurement as percentage of production is hovering between 23 percent (2002-03) to 32 percent (2012-13) with a decline to 30 percent in 2013-14. In 2014-15, 21.8 million tonnes of rice was procured as on 4th March 2015. The overall position regarding rice procurement over the years in the country as percentage of production and marketed surplus has been presented in Chart-2.2.

Chart- 2.2: Rice Procurement as Percent of Production & Marketed Surplus, 2000-01 to 2013-14

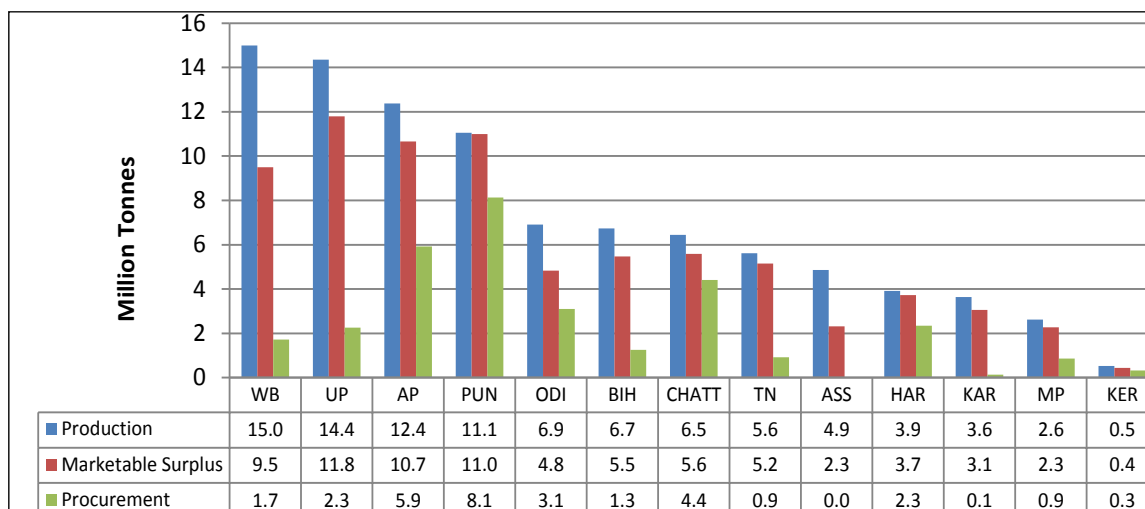


Source: DES, DFPD, Agricultural Statistics at a Glance, 2014

Note: MSR is available upto 2012-13

2.5 Out of 14 kharif crops for which the Government fixes MSPs, actual procurement is done mainly for only two crops viz. paddy and cotton. Chart-2.3 depicts state-wise production, marketed surplus and procurement of rice.

Chart- 2.3: State wise Rice Production, Marketed Surplus and Procurement, TE 2013-14



Source: DES, DFPD, Agricultural Statistics at a Glance, 2014

Note: Marketed Surplus for Chhattisgarh is not available therefore has been taken as same as MP

2.6 Eastern belt of the country gets neglected in so far as procurement of rice is concerned. For instance, there was almost negligible procurement of rice in Assam during TE 2013-14, even though it contributed 4.6 percent of the total rice production. The situation in other eastern states such as Bihar, West Bengal is somewhat better than that of Assam but not good enough when these states are compared with Punjab where 24.2 percent of rice was procured against its production of 11.3 percent during the corresponding period {(Charts-2.4(a) and (b)}. The instrument of pricing policy (MSPs) can achieve its objective only if it is backed by strong procurement machinery in all states. Therefore, the perpetual skewedness in procurement has to be corrected on priority.

Chart-2.4: Share of Major States in Rice Production and Procurement, TE 2013-14

Chart-2.4 (a) Rice Production

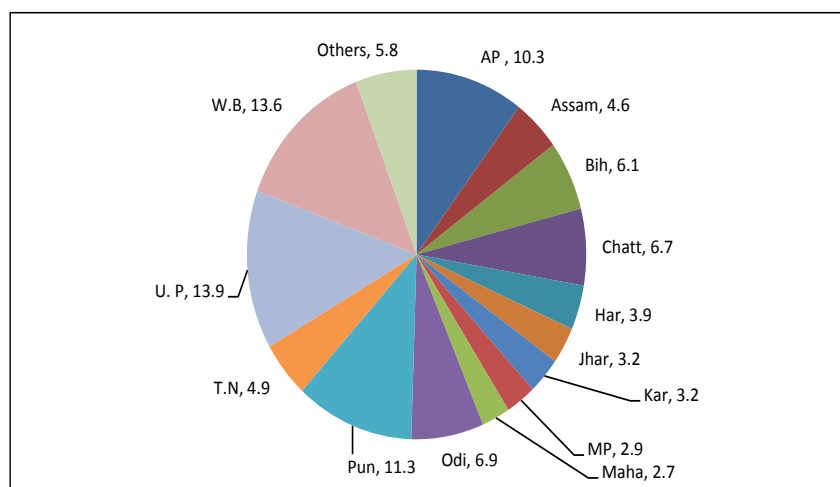
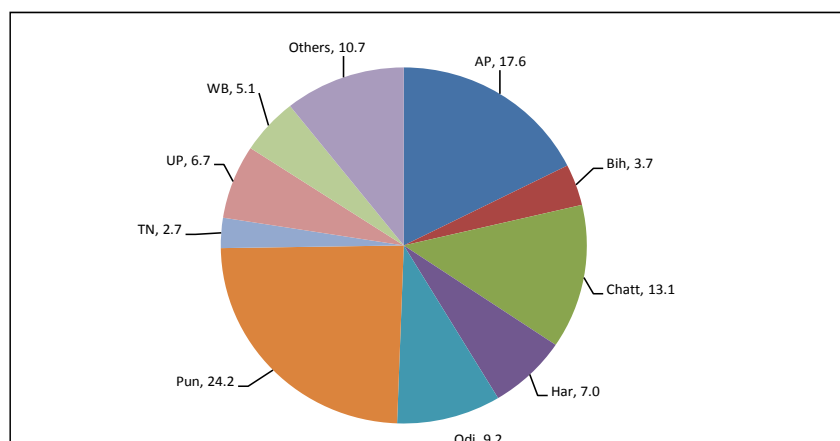


Chart-2.4 (b) Rice Procurement



Sources: DES and FCI

2.7 Currently, total oilseeds production is around 32 million tonnes and productivity at 10-11 quintal per hectare. There is a huge gap between the domestic demand and supply of edible oils in the country. Import of edible oils during 2013-14 was 10.5 million tonnes, valued at Rs.56,572 crores. To bridge the gap between domestic demand and supply, it is imperative that area under oilseeds be increased by encouraging diversification of land from foodgrains to oilseeds. A pertinent question arises as to why farmers are not wholeheartedly diversifying towards oilseeds and pulses. Based on CACP's interaction with a wide spectrum of farmers and also based on field visits, it emerged that farmers need a backup plan in the form of reasonably strong procurement machinery to be put in place to fall back upon when the prices fall below MSP. The fact that a large number of farmers in Gujarat sold groundnut in 2014, at least 10 percent lower than the MSP, bears a testimony to sub-optimal procurement machinery. This shakes the confidence of farmers in price support mechanism for crops other than paddy (and also wheat) and explains in great measure their reluctance to diversify from paddy/wheat to oilseeds and pulses, the crops in which the country is deficient. In view of this, there is an urgent need to strengthen the procurement machinery for pulses and oilseeds. A robust procurement machinery should be put in place to incentivize farmers to diversify to these commodities. The Commission recommends to radically restructure NAFED so as to enable it to accomplish its main objective function of procurement of pulses and oilseeds if and when market prices go below their respective MSPs.

Right to Sell at MSP

2.8 The two most important procurement agencies of Government of India namely FCI and NAFED were set up with the main objective of procuring notified commodities at MSP, if and when the market prices go below MSP. These agencies have been in the existence for over 50 years and 30 years respectively. Yet, the benefits of MSP bypass a large sections of farmers, rendering the entire dispensation of pricing policy and procurement operations ineffective. As per Situation Assessment Survey (NSS 70th Round), only 2.57 million households were benefitted directly from procurement of paddy for during the procurement season ending December, 2012. The situation of procurement of oilseeds and pulses is far worse. NAFED procured only 3.21 percent of Kharif oilseeds in the last season. This calls for giving wide publicity about MSP and procurement agencies on radios and vernacular languages in popular local dailies at least 15 days before the procurement starts so as to reach out to farmers far and wide. Furthermore, to instill confidence among farmers for procurement of their

produce, a legislation conferring on farmers the right to sell at MSP may be brought out.

Negotiable Warehouse Receipt System (NWRS)

- 2.9 Warehouses should be encouraged to be developed in the private sector with facility of Negotiable Warehouse Receipt System (NWRS) system of farmers. NWRS, currently regulated by Warehousing Development and Regulatory Authority (WDRA), allow transfer of ownership of a commodity stored in a warehouse without physical delivery which helps farmers getting loans from banks against these receipts and avoid distress sale. It would increase liquidity in the rural areas and encourage better price risk management in agriculture commodities. Pilot projects in certain states need to be taken up where NWRs can supplement procurement by FCI.

Statutory Levy on Millers and Dealers

- 2.10 Under ECA, 1955, states have been imposing levy on rice millers which has been limited to 25 percent w.e.f. October 2014. With a view to ensuring payment of remunerative prices to farmers at MSP or above and to improve outreach of procurement system, it has been decided now that the State Governments should not impose any levy on rice from the millers' w.e.f. 1st October, 2015. State Governments have been advised to amend their levy orders accordingly. This is a step in the right direction and would help 'getting the prices right'.

Stock Limits of Commodities on Millers, Dealers/Wholesalers and Retailers

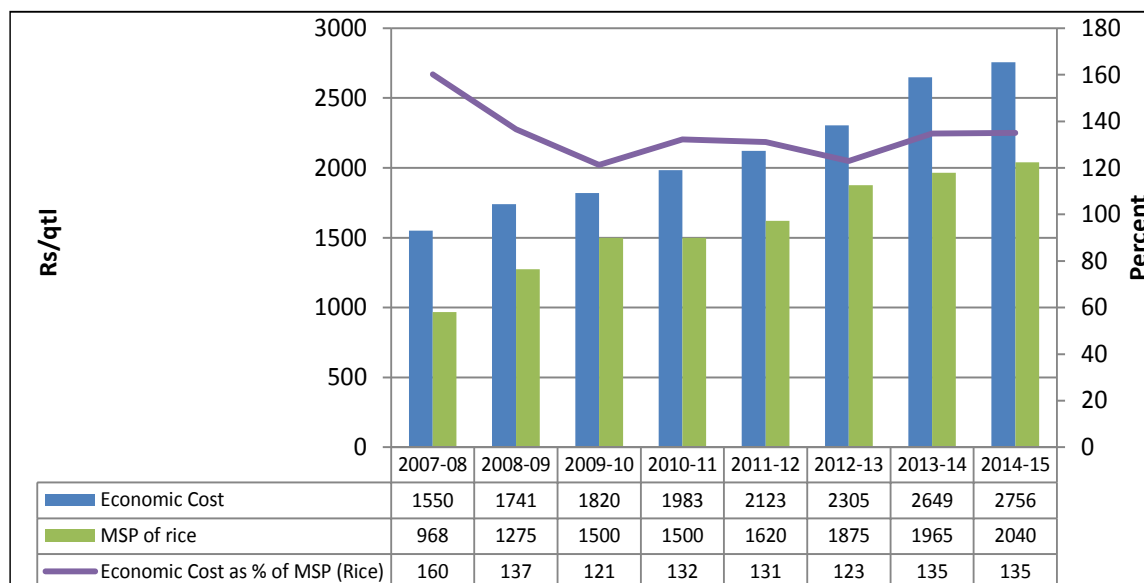
- 2.11 The Government amended ECA, 1955 and reintroduced the provision of quantitative restrictions on the stock limits. Stock limits constrain alternative markets to function to the advantage of the farmers. This essentially implies that farmers forgo potential opportunity of direct sale of their produce. For instance, corporates even under PPP, cannot buy freely from the farmers. Therefore, such stock limits should be done away with which will help 'getting the market right'.

Economic Cost of Procurement

- 2.12 Economic cost of procuring rice is 135 percent of its MSP in 2014-15 (Chart-2.5). One of the main factors attributing to this high economic cost is statutory taxes and other incidentals levied by the state Governments. These statutory levies / mandi

tax, VAT etc. are a major source of market distortion. The Commission recommends lowering these taxes/levies in the states to the level not exceeding 5 percent of MSP.

Chart-2.5: Economic Cost of Procurement of Rice, 2007-08 to 2014-15



Source: FCI

Futures Market

2.13 Small and marginal farmers, constituting 85 percent, have low marketable surplus. These farmers are not able to participate directly in the futures market due to lack of aggregators, long supply chain, huge cost of intermediation, lack of proper market information and awareness. Policy framework for Farmers Groups, Co-operative institutions, RRBs, NGOs, State Agricultural Marketing Boards, Warehousing Corporations and Commodity Development Boards need to be allowed and encouraged to act as aggregators as they work in the rural areas and thus have close interaction, association and trust of farmers. Futures market through aggregator can help small farmers in getting the right prices.

Recapitulation

2.14 To wrap up, the following important points are noteworthy:

- Lower procurement and weak marketing infrastructure in major paddy producing eastern belt have affected the market prices which are generally lower than MSP.

This calls for strengthening the procurement system in the eastern belt to the level prevailing in Punjab and Haryana.

- ii. The robust procurement machinery for pulses and oilseeds should be put in place to incentivize farmers to diversify to pulses and oilseeds. The commission recommends to radically restructure NAFED so as to enable it to accomplish its main objective function of procurement of pulses and oilseeds as and when market prices go below their respective MSPs.
- iii. The two most important procurement agencies of Government of India namely FCI and NAFED were set up with the main objective of procuring notified commodities at MSP, if and when the market prices go below MSP. These agencies have been in the existence for over 50 years and 30 years respectively. Yet, the benefits of MSP bypass a large sections of farmers, rendering the entire dispensation of pricing policy and procurement operations ineffective. As per Situation Assessment Survey (NSS 70th Round), only 2.57 million households were benefitted directly from procurement of paddy for during the procurement season ending December, 2012. The situation of procurement of oilseeds and pulses is far worse. NAFED procured only 3.21 percent of Kharif oilseeds in the last season. It is recommended that wide publicity about MSP and procurement agencies on radios and vernacular languages in popular local dailies be given at least 15 days before the start of procurement operations so as to reach the farmers far and wide. Furthermore, to instill confidence among farmers for procurement of their produce, a legislation conferring the right on farmers to sell their produce at MSP be brought out.
- iv. Stock limits under ECA constrain alternative market to function efficiently. The Commission recommends to do away with these stock limits which would help 'getting the market right'.



CHAPTER-3

Productivity and Its Various Aspects

Chapter-3

3.1 Ensuring food security of a large and growing population has been a challenge for India, especially when the land and water resources are limited. Enhancing productivity levels assumes importance not only from the point of view of meeting the rising demands but also to make our agriculture globally competitive. Indian agriculture is reasonably remunerative but it can be made better if emphasis is laid on resource conservation and productivity augmenting technologies. Higher levels of productivity help contain the costs of production and also make the country more competitive in the global market. In this Chapter, analyses of land, labour and water productivities have been undertaken, besides identifying drivers of the productivity and appraising efficiency gaps in productivity levels of various kharif crops in the country in relation to those of benchmark countries. To augment resource use efficiency, simulation model has been developed to incentivize farmers for every one-fourth percent point increase in oil content of the oilseed.

3.2 The average annual growth rates of various kharif crops are presented in the Table-3.1:

Table-3.1: Annual Growth Rates of Various Kharif Crops, 1990s to 2010s

(Percent)

S.N.	Crop	Area			Production			Land Productivity		
		1990s	2000s	2010s	1990s	2000s	2010s	1990s	2000s	2010s
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
A-Cereals		-1.0	-0.6	-0.4	0.7	0.9	3.7	1.6	1.2	4.0
1	Paddy	0.7	-0.7	0.7	2.1	0.7	3.1	1.4	1.1	2.3
2	Bajra	-1.8	1.0	-3.8	5.4	10.6	7.0	5.6	5.6	10.2
3	Maize	0.8	2.6	1.9	2.2	4.8	7.2	1.4	2.0	5.2
4	Jowar	-3.4	-2.7	-8.2	-0.9	-2.3	-5.9	1.9	0.6	2.6
5	Ragi	-3.4	-1.7	-1.4	-1.2	2.9	1.4	2.1	2.8	2.3
B-Pulses		-1.5	1.2	-1.2	-0.2	1.0	9.0	1.2	-0.8	8.9
6	Tur	-0.4	0.2	2.0	1.9	0.5	2.9	2.0	0.1	1.3

7	Moong	-1.2	1.2	1.3	-0.6	1.9	29.0	0.7	-1.1	23.1
8	Urad	-1.2	0.4	1.7	-1.1	-0.1	7.0	0.2	-0.6	4.9
C-Oilseeds		1.1	1.7	0.2	3.4	6.9	6.4	2.5	4.7	6.0
9	Ground-nut	-2.3	-1.9	-2.5	-2.4	9.2	17.5	-0.3	9.8	15.9
10	Soyabean	11.0	4.7	2.7	16.4	6.4	4.6	4.7	1.6	2.3
11	Sesamum	-3.7	2.6	-3.2	-3.4	6.0	5.9	1.3	2.5	8.4
12	Sunflower	3.1	2.8	-16.0	3.2	5.1	-12.5	0.7	2.5	5.9
13	Nigerseed	-2.0	-2.5	-5.5	-1.8	-2.2	0.0	0.1	-0.2	6.3
D-Commercial Crop										
14	Cotton	1.4	2.0	4.3	2.1	8.1	5.7	0.5	5.7	1.5

Source: DES, DAC.

The 1990s, 2000s and 2010s refer to decades periods from 1990-91 to 1999-2000, 2000-01 to 2009-10 and 2010-11 to 2014-15 respectively.

3.3 Growths in land productivities of major group of crops (cereals, pulses, oilseeds and cotton) during last three decades are discussed in the following sub-paragraphs.

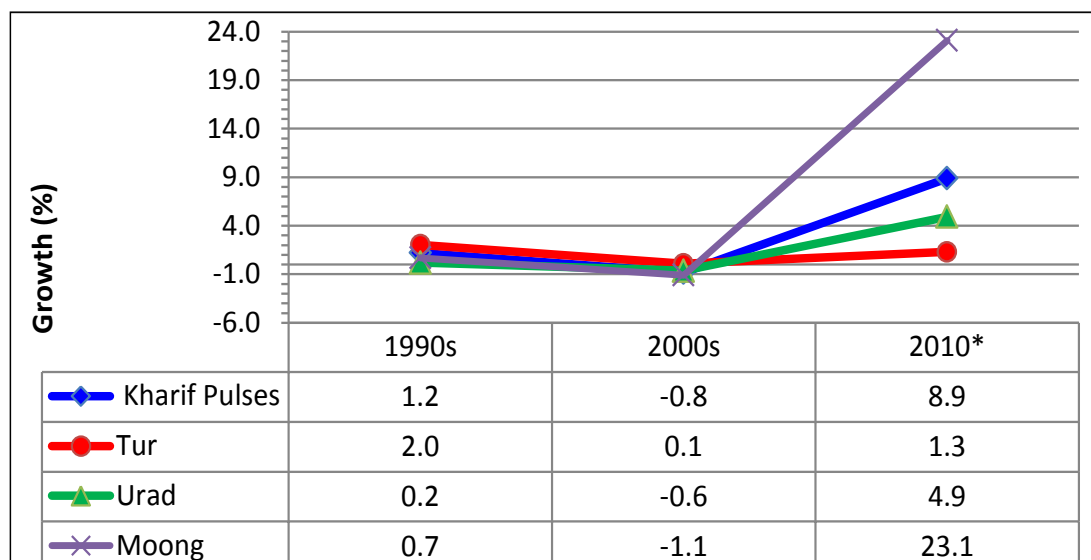
Kharif Cereals

- During the decade of 2010s, productivity of kharif cereals registered a growth rate of 4 percent p.a., although growth in its area declined by 0.4 percent p.a., resulting in acceleration in growth of production at 3.7 percent p.a. Growth in productivity of all cereals except ragi accelerated during 2010s compared to those during 2000s.
- While the growth in productivity of paddy at 2.3 percent p.a. has accelerated during the decade of 2010s compared to 1.1 percent p.a. posted during 2000s, its area increased at 0.7 percent annually during 2010s compared to decline at 0.7 percent p.a. during the preceding decade. The resultant effect led to growth in production at 3.1 percent during 2010s compared to less than 1 percent during the preceding decade.
- The growth in area under maize decelerated to 1.9 percent p.a. during 2010s compared to increase at 2.6 percent p.a. during the preceding decade. However, its productivity accelerated at 5.2 percent p.a. during 2010s compared to 2.0 percent during 2000s. The effect of productivity augmentation is more pronounced compared to decline in area with the result that growth in its production accelerated to 7.2 percent p.a. during 2010s compared to 4.8 percent p.a. posted in 2000s. The trends in productivity of kharif cereals are shown in the Annex Chart-3.1 (i).

Pulses

- iv. Productivity of kharif pulses posted growth at 8.9 percent p.a. during 2010s. The productivity of tur, the main crop amongst the kharif pulses, increased at 1.3 percent p.a. during the current decade from 0.1 percent p.a. during 2000s, though it is still lower than 2.0 percent p.a. achieved during the decade of 1990s. This coupled with acceleration in growth in area coverage, its production increased at 2.9 percent p.a. during 2010s against 0.5 percent p.a. during the preceding decade. The augmentation in productivity levels of tur is contributed mainly by Karnataka, Madhya Pradesh and Rajasthan.
- v. The growth in productivities of moong (23.1 percent) and urad (4.9 percent) has turned positive and significant during 2010s from negatives during 2000s {Chart-3.1(a)}. These high growth levels in productivities coupled with growth in the area, production grew at 29.0 percent p.a. in case of moong and 7.0 percent in case of urad during 2010s. While Andhra Pradesh, Karnataka and Rajasthan contributed to higher growth in productivity of moong, urad owes its growth in productivity to Karnataka, Madhya Pradesh and Rajasthan.

Chart-3.1 (a): Growth in Productivity of Pulses, 1990s to 2010s



*Period from 2010-11 to 2014-15

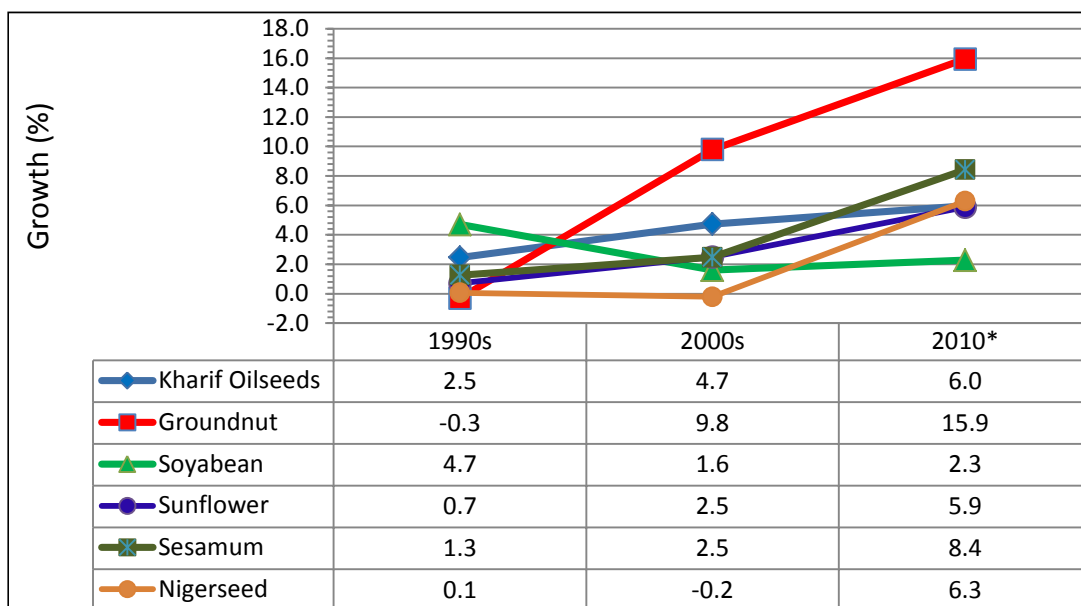
Oilseeds

- vi. Productivities of each of five kharif oilseeds accelerated during the decade of 2010s

compared to those in the preceding decade. Kharif oilseeds as a group posted growth in its productivity at 6.0 percent p.a. during 2010s compared to 4.7 percent p.a. during 2000s {Chart-3.1(b)}. However, its area grew at 0.2 percent p.a. from increase at 1.7 percent p.a. posted during the corresponding period. Since area decelerated faster than acceleration in the productivity, production decelerated to 6.4 percent p.a. from 6.9 percent during the corresponding period. Higher growth in productivity levels could be due to higher increase in MSPs in relation to other crops which will help reduce the dependence on imports of edible oils.

- vii. Productivity of groundnut accelerated to 15.9 percent p.a. in 2010s from 9.8 percent p.a. during 2000s and those of soyabean to 2.3 percent p.a. in 2010s from 1.6 percent p.a. during the corresponding period. While Gujarat, Punjab and Rajasthan contributed to productivity gains in case of groundnut, Chhattisgarh, Madhya Pradesh, Maharashtra and Rajasthan have contributed significantly in so far as productivity of soyabean is concerned.

Chart-3.1 (b): Growth in Productivity of Oilseeds, 1990s to 2010s



*Period from 2010-11 to 2014-15

Cotton

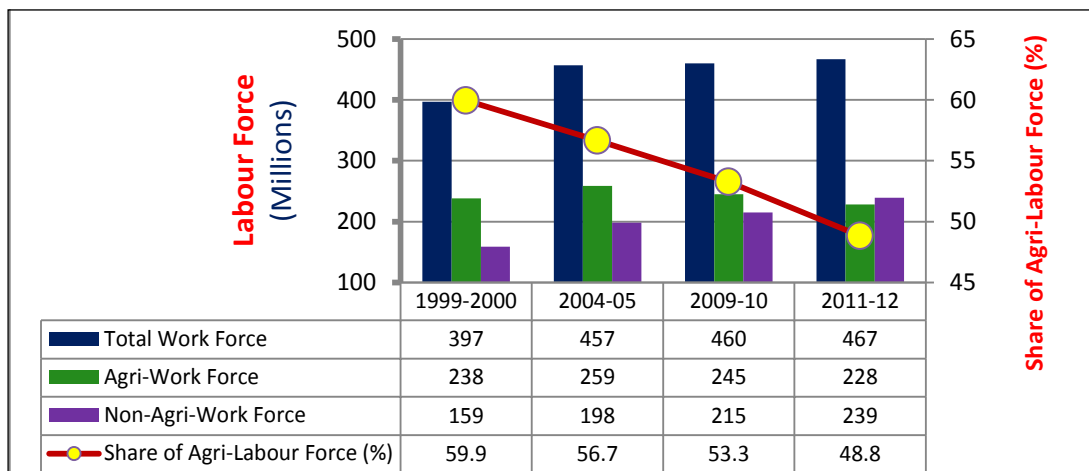
- viii. The growth in productivity of cotton accelerated during the decade of 2000s to 5.7 percent but it decelerated to 1.5 percent during 2010s {Annex Chart-3.1(ii)}. Introduction of Bt cotton in 2002 contained pest and diseases which explains high

growth in the productivity during 2000s. As Bt seeds are not high yielding but has inherent character to protect against pest and diseases, high growth rate in productivity levels of cotton was not expected to be sustained in medium to long run.

Labour Productivity

- 3.4 Empirical evidence worldwide shows that workforce tends to move away from primary (agriculture) to secondary and tertiary sectors as economies develop. In India too, the agri-workforce has ebbed not just in relation to the total workforce from 60 percent in 1999-2000 to 49 percent in 2011-12 but also in absolute terms. For instance, the size of agri-workforce declined by 31 millions during 2004-05 to 2011-12 against an increase by 10 millions in the total workforce during the corresponding period (Chart-3.2). This implies that 44 lakh agricultural labourers, on an average, are migrating every year.

Chart-3.2 : Declining Workforce in Agriculture, 1999-2000 to 2011-12



Source: NSS, Various Reports

- 3.5 Labour productivity in agriculture is just about 17 percent compared to that of non-agriculture (Table-3.2) which implies that efficiency gap in agri-workforce is quite high at 83 percent and this explains low agri-wages in relation to wages in non-agriculture sectors. Relatively higher growth, rising opportunities and thus higher incomes in secondary and tertiary sectors (manufacturing and services) coupled with seasonal character of agricultural operations (where labourers remain unemployed during lean season) and the drudgery in agricultural occupations have contributed agri-workforce to shift away from the sector.

Table-3.2 : Low Labour Productivity in Agriculture

S.N.	Parameter	2005-06	2011-12
1	GDP (Constant Prices) (Rs Crores), of which	3253073	5243582
i	Agri-GDP (constant prices) (Rs crores)	594487	739495
ii	Non-Agri. GDP (constant prices) (Rs crores)	2658586	4504087
2	Employment in Agri. sector (Crores)	26.3	22.8
3	Employment in non-agri-sectors (Crores)	19	23.9
4	Labour Productivity in agriculture sector (Agri-GDP per Capita) [row {1(i)}/row(2)*100] (Rs.)	22604	32434
5	Labour Productivity in non-agriculture sectors (GDP in non-agri sectors per capita) [row {1(ii)}/row(3)*100] (Rs.)	139926	188456
6	Agri-Labour Productivity as percent of non-agri-labour productivity (%) [row (4)/row(5)*100]	16.2	17.2

Sources: National Accounts Statistics (NAS), CSO and NSSO

3.6 As agriculture is a labour intensive sector where human wages constitute 30 percent of total cost of cultivation, shortage of labour can become an insurmountable problem in the foreseeable future. This will be exacerbated by faster increase in the cost of labour in relation to the cost of capital in near to medium run. To tackle this, traditional farming occupations need to be replaced by widespread adoption of farm mechanization. The role of farm mechanization ought to go beyond tractorization with emphasis on optimal use of inputs and more innovations in the pre-harvest and post-harvest operations. Some of important farm mechanization tools that can increase the speed of operations and reduce the requirement of agri-labour are given in Table-3.3.

Table-3.3 : Agricultural Operations and Farm Mechanization

S.N.	Agricultural Operations	Farm Machines
1.	Land development, tillage, seed bed preparation	Tractors, Laser Levelers, Ploughs, Dozers and Scrapers
2.	Sowing and Planting	Drill, Seeder, Planter, Dibber and transplanter
3.	Weeding, inter cultivation, plant protection	Harrow, Tiller, Sprayer
4.	Harvesting and Threshing	Cotton pickers, Harvester, Thresher, Digger, Reaper and Sheller

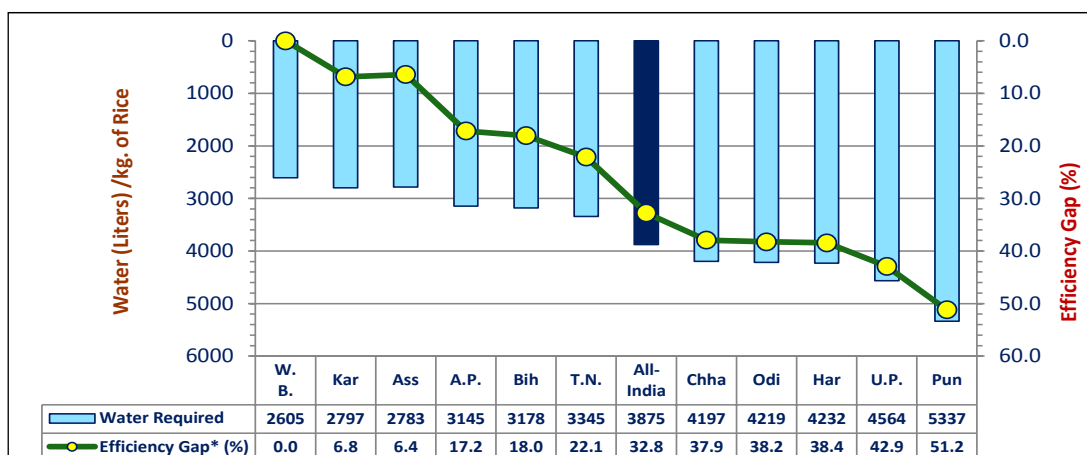
3.7 Supply constraint in labour for agricultural operations pushes farm wages which increases the cost of production (CoP). Farm mechanization will contain the CoP, increase the productivity and augment profitability of farmers in the medium to long

run. However, fragmented land holdings, high cost of machinery and low propensity of farmers to make initial capital investment have been impediments to the growth of farm mechanization in the country. The Commission recommends to develop a cooperative based 'Custom Hiring Model' under which a variety of machines for different farming operations be offered on rent. While doing this, care should be taken to customize the machines according to domestic requirement because imported machinery is not always suited for Indian crop architecture

Water Productivity

3.8 Land productivity i.e. production per unit of area, reflects only one dimension and ignores other natural resource viz. water use efficiency. When states are compared on the basis of land productivity alone, Punjab (58.5 qtl./ha) emerges, just as an example, more efficient than Karnataka (41.3 qtl./ha) and West Bengal (41.2 qtl./ha). However, resource use efficiency in terms of water may give a completely different scenario as water required for irrigation in the field may be much higher in those states where land productivity is higher compared to some other states where land productivity is lower. This is important as water is increasingly becoming scarce in India with high opportunity costs. With this end in view, the water productivity i.e. water intake per kilogram of rice produced in major rice producing states of Andhra Pradesh, Assam, Bihar, Chhattisgarh, Haryana, Karnataka, Odisha, Punjab, Tamil Nadu, Uttar Pradesh and West Bengal (accounting for 85 percent of total paddy production in the country) have been deduced (Chart-3.3).

Chart-3.3: Water Productivity of Rice, TE 2013-14



*Efficiency gap of a state is defined as $(1 - \text{water productivity of the state/highest water productivity}) \times 100$

- 3.9 It may be seen (Chart-3.3) that West Bengal consumes 2605 litres of water to produce a kilogram of rice compared to 5337 litres being guzzled by Punjab. The efficiency gap with respect to consumption of water in Punjab (the most efficient in terms of land productivity) is over 51 percent. What this shows is that the most efficient state in terms of land productivity is not necessarily the most efficient if other factor of production namely water is factored into. Given that water tables in various states are depleting very fast, there is an urgent need to improve water use efficiency.
- 3.10 The country's farm sector alone accounts for 83 percent of all water use and therefore, judicious use of water in agriculture will have significant impact on the overall availability of water. It is, therefore, imperative to augment the water productivity i.e. water intake per kilogram of production. As most state governments have been content with subsidising electricity for pumping irrigation water, it leads to inefficiencies in its consumption. To promote economy in water use in agriculture, water/electricity be metered and some quantitative ceilings on per hectare basis be fixed. If some farmers are able to use water/electricity less than the ceilings fixed for them, they should be rewarded by cash incentive equivalent to unused units of water/power at the rates of their domestic resource costs. This would encourage farmers to use drip irrigation and would enhance production per drop of water. The need for economical use of water has to sink in the consciousness of policy makers.

Relationship Between Cost of Production and Productivity Rates

- 3.11 On a priori basis, one would expect an inverse relationship between real cost of production and productivity levels. With a view to statistically test this hypothesis, panel data (across states and over the years) on real costs and yield levels of various crops for 2000-01 to 2012-13 are analysed by fitting the following regression model:

$$\ln(\text{CoPi}) = a + e_i \cdot \ln(Y_i)$$

where CoPi = real Cost of Production of ith crop, $i = 1, 2, \dots, 14$

Y_i = yield rate of ith crop;

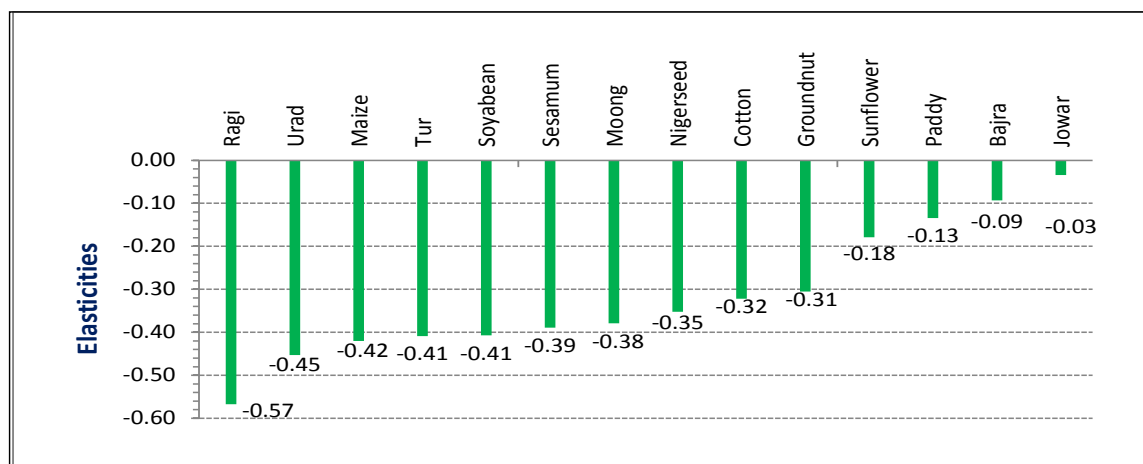
e_i = elasticity of ith crop;

a = constant;

and \ln denotes logarithmic function.

3.12 Based on regression model indicated in para-3.11, elasticities of various kharif crops have been determined which are presented in Chart-3.4.

Chart-3.4: Relationship between Real Cost of Production and Productivities–Crop-wise



Source: Computed by CACP

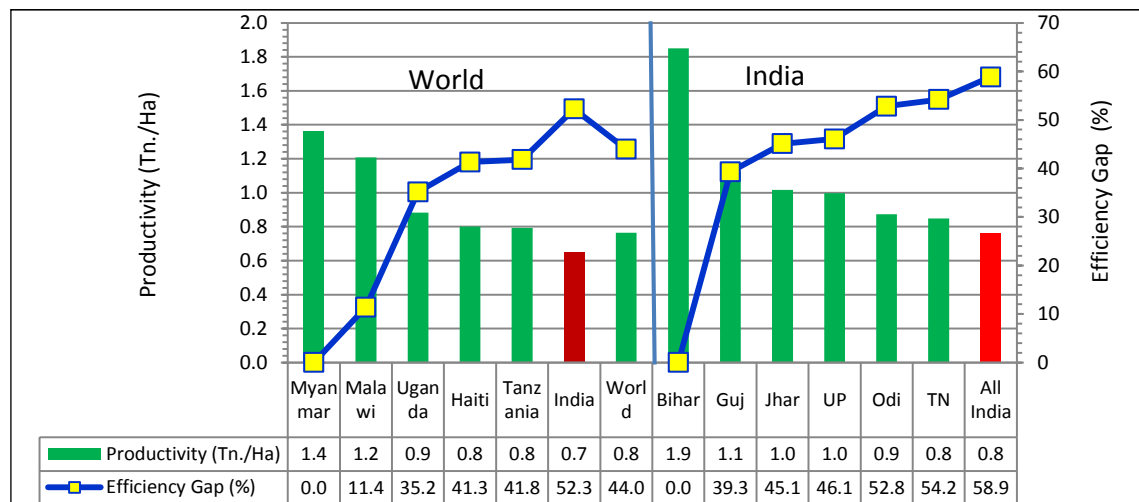
3.13 Chart-3.4 shows the existence of an inverse relationship between real cost of production and productivity levels of all kharif crops. Based on the analyses, it is inferred that the real costs could be reduced in the range of 1 to 6 percent with an increase of 10 percent in their respective productivity levels in all crops except jowar. In case of jowar, the cost could be reduced by 0.3 percent on increase of 10 percent in the productivity. The inverse relationships between yield levels and real cost of production of various crops are depicted in scatter diagrams {Annex Charts-3.2(i) to 3.2(xiv)}.

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

3.14 In the competitive environment of globalised economy, it is important not only to improve productivity levels over time (temporal) but also in relation to other countries (cross-sectional). It is, therefore, imperative to envision India's position vis-à-vis other major producing countries in the world on productivity scale. This would enable the country to gain greater competitiveness by setting out the targets in benchmarking productivity standards of those crops. In this background, productivity levels of some kharif pulse/oilseeds in the country are compared with those of benchmarking countries {Charts-3.5(a) to 3.5(d)}.

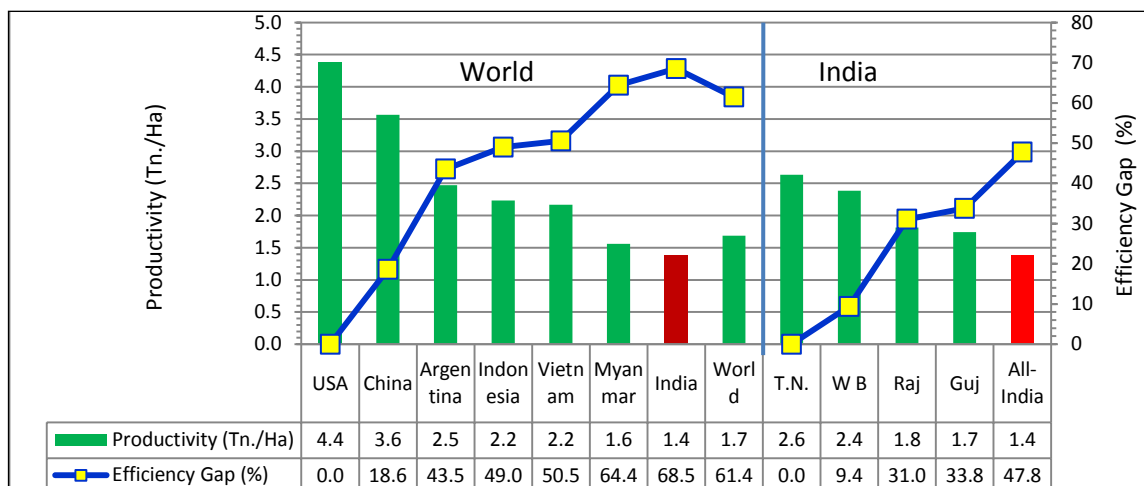
Charts-3.5 (a) to (d): Benchmarking of Productivity Levels across Countries and States in India

Chart- 3.5 (a): Tur



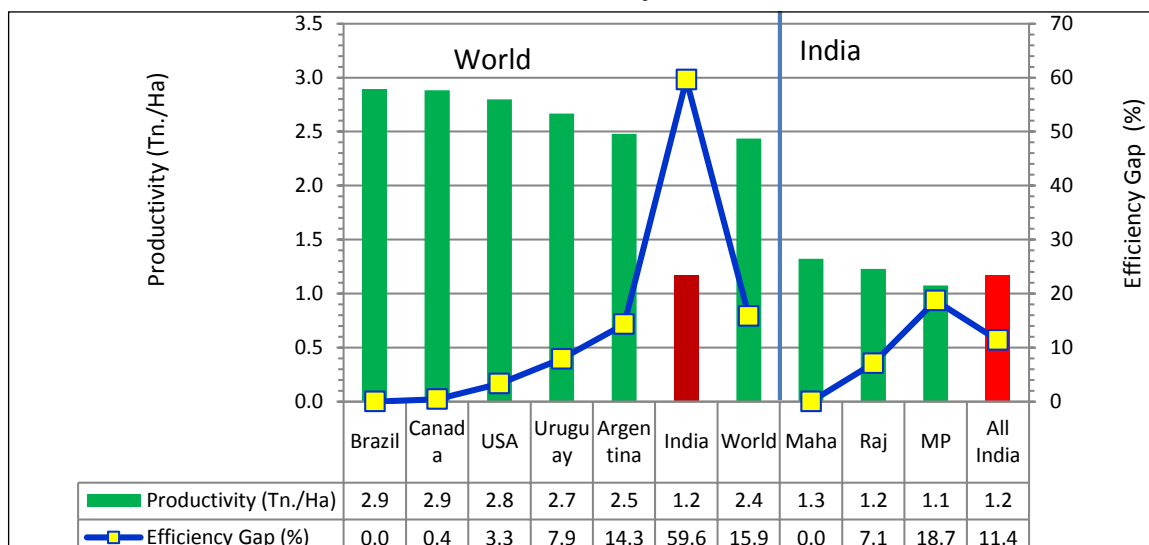
Source: FAO & DES

Chart- 3.5 (b): Groundnut



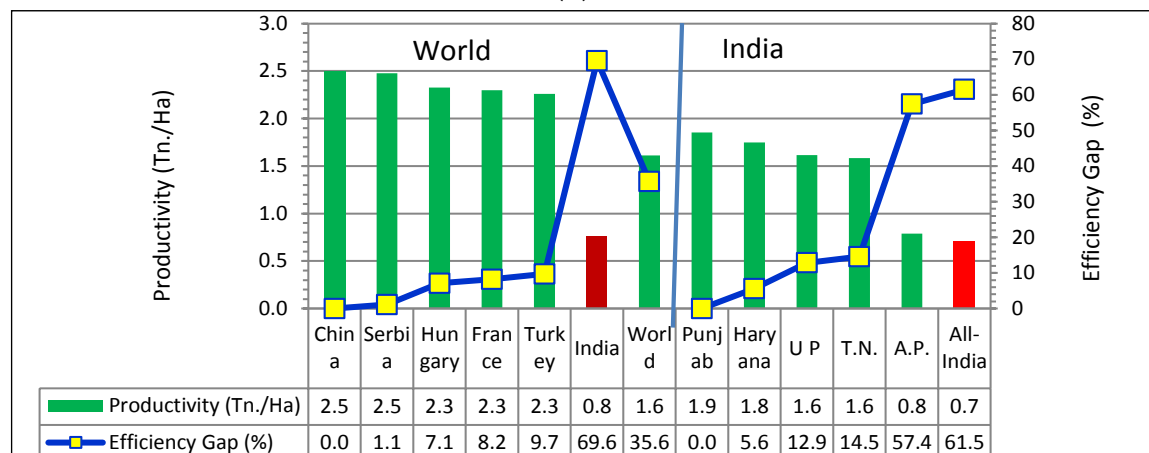
Source: FAO & DES

Chart- 3.5 (c): Soyabean



Source: FAO & DES

Chart- 3.5 (d): Sunflower



Source: FAO & DES

3.15 The efficiency gaps in the productivity levels are high in the range of 60 to 70 percent (groundnut, soyabean and sunflower) and 53 percent in case of tur. Similarly, the average productivity of other major kharif crops (paddy, maize, jowar and cotton) are much lower than those of the benchmarking countries {Annex Charts-3.3(a) to 3.3(d) and Annex Table- 3.1}.

3.16 Given that India is a land scarce country, low levels of productivity standards should not be allowed to perpetuate, especially in case of crops where import-dependence

is quite high (oilseeds and pulses). Producing more oilseeds with limited land resources requires continuously raising productivity. Through the current mix of oilseeds, 4 million MT of domestic production of edible oils is being produced in the country by using about 15.80 million hectares of land. This much quantity of palm oil could be produced from just 1 million hectares. Thus, one million hectares under oil palm is akin to more than 15 million hectares under other mix of oilseeds. Therefore, promoting oil palm in the country would not be just a land saving strategy but would also help our domestic farmers instead of those of Indonesia and Malaysia. Accordingly, it is recommended that CACP's Report on 'Oil Palm: Pricing for Growth, Efficiency & Equity, Towards a Rational Pricing Policy for Fresh Fruit Bunches and Potential Solution for India's Burgeoning Edible Oil Imports' be implemented. This report scientifically dissects various dimensions of edible oils and lays down a pragmatic policy prescription to significantly augment domestic production of edible oils.

District-wise and State-wise Productivity Levels in Major Producing States

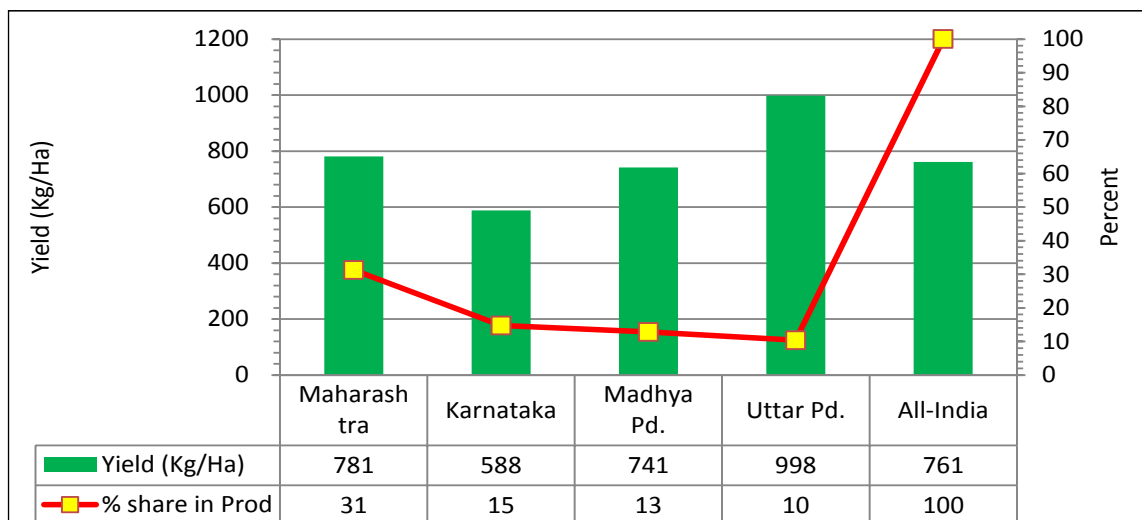
- 3.17 With a view to appraise high performing districts in terms of productivity levels of various crops so as to enable other districts to emulate these benchmarking districts, subject to adaptability and other technical constraints, the Commission seeks to analyse district-wise productivity behaviour of three crops (tur, groundnut and soyabean) as an illustration. For this purpose, district-wise yield levels of these crops have been arranged in ascending order within the states, separately for these crops, made yield bands based on 'intelligible differentia' and then worked out area coverage corresponding to each of the yield bands {Table-3.4 (a) to Table-3.4 (c)}.

Tur

- i. Karnataka, Madhya Pradesh, Maharashtra and Uttar Pradesh contributed 69 percent of the country's tur production in TE 2013-14 {Chart-3.6 (a)}.

Chart-3.6 (a) to (c): State-wise Productivity Levels of Various Crops, TE 2013-14

Chart-3.6 (a): Tur



Source: State Governments and DES

- ii. The productivity of tur is the highest in Uttar Pradesh (998 kg/ha) and this is so because its 7 percent of area is in high yield bands of 12-16 qtl./ha. to 20-24 qtl./ha. and 67 percent area in the yield band of 8-12 qtl./ha. In contrast, Karnataka has much lower productivity of 588 kg/ha because its 91 percent area has yield levels in the yield band upto 8 qtl./ha. {Table-3.4(a)}. The top three districts in terms of highest yield are Kanpur City, Etawah and Kanpur Dehat in Uttar Pradesh; Latur, Akola and Hingoli in Maharashtra; Chhindwara, Singroli and Narsinghpur in Madhya Pradesh and Tumkur, Dakshina Kannada, Kodagu in Karnataka. The efficiency gaps in productivity within states range from 18 percent in Karnataka to 61 percent in Uttar Pradesh.

Table-3.4 (a): District-wise Productivity Levels of Tur, TE 2013-14

S.No	Yield Band (Kgs/Ha.)	Karnataka		MP	Maharashtra*		UP		
		Area (%)	No. of Distts.	Area (%)	No. of Distts.	Area (%)	No. of Distts.	Area (%)	No. of Distts.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	0-400	5.0	1	20.6	4	-	-	-	-
2	400-800	86.1	6	32.4	12	55.7	11	6.4	3
3	800-1200	-	-	24.0	8	27.9	6	66.7	23
4	1200-1600	-	-	3.9	1	9.4	1	4.8	3
5	1600-2000	-	-	5.7	1	-	-	0.6	1

S.No	Yield Band (Kgs/Ha.)	Karnataka		MP		Maharashtra*		UP	
		Area (%)	No. of Distts.	Area (%)	No. of Distts.	Area (%)	No. of Distts.	Area (%)	No. of Distts.
6	2000-2400	-	-	-	-	-	-	1.8	1
Summary Indicators of Land Productivity	Total Area ('000 ha)	750		517		1095		311	
	Max Yield (Kgs/Ha.)	720		1643		1285		2570	
	Top 3 distts. In descending order of Yields	Tumkur, Dakshina Kannada, Kodagu		Chhindwara, Singroli, Narsinghpur		Latur, Akola, Hingoli		Kanpur City, Etawah, Kanpur Dehat	
	Area under top 3 distts (in terms of yields)(%)	58.8		18.6		17.8		5.0	
	Minimum Yield. (Kgs/Ha.)	298		249		456		501	
	Distt. having Min. Yield.	Bagalkote		Satna		Buldhana		Balrampur	
	Share of Area under Min. Yield (%)	5.0		6.6		5.2		2.6	
	Average Yield (Kgs/Ha.)	588		741		781		998	
	Efficiency Gap (%)	18		55		39		61	

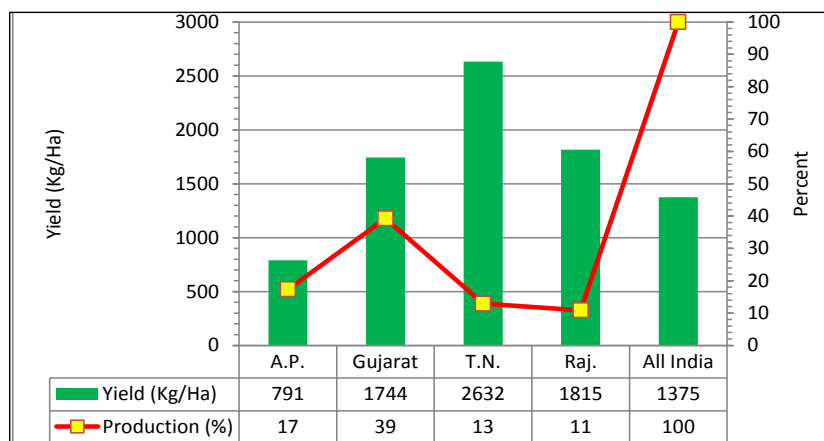
Source: State Governments and DES

Note: Districts with less than 1% share in total production of the state have not been considered. *Maharashtra data is for TE 2014-15

Groundnut

- i. Andhra Pradesh, Gujarat, Rajasthan and Tamil Nadu account for 80 percent of the production of groundnut with about 73 percent of the total area in TE 2013-14 {Chart-3.6(b)}.

Chart-3.6 (b): Groundnut



Source: State Governments and DES

- ii. Tamil Nadu has the productivity of groundnut (2632 kg/ha) and has nearly 19 percent area in the top yield bands of 30-40 qtl/ha and 40-50 qtl/ha. On the other end of productivity scale lies Andhra Pradesh with 791 kg/ha with just about 3 percent of area in high yield bands of 20-40 qtl/ha [Table-3.4(b)]. The top three districts in terms of the highest productivities are Nellore, Guntur and Warangal in Andhra Pradesh; Surendranagar, Porbandar and Junagadh in Gujarat; Hanumangarh, Bikaner and Churu in Rajasthan; Thiruvavarur, Thiruvallur and Kancheepuram in Tamil Nadu. The efficiency gaps in terms of productivity levels within states vary in the range from 19 percent in Gujarat to 77 percent in Andhra Pradesh.

Table-3.4 (b): District-wise Productivity Levels of Groundnut, TE 2013-14

S.No	Yield Band (Kgs/Ha.)	AP*		Gujarat		Raj		TN**	
		Area (%)	No. of Distts.	Area (%)	No. of Distts.	Area (%)	No. of Distts.	Area (%)	No. of Distts.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	0-1000	62.6	1	-	-	-	-	-	-
2	1000-2000	33.3	6	92.8	8	65.1	12	4.9	1
3	2000-3000	1.4	3	5.9	2	28.5	2	71.2	13
4	3000-4000	1.9	3	-	-	-	-	10.7	4
5	4000-5000	-	-	-	-	-	-	8.0	3
Summary Indicators of Land Productivity	Total Area ('000 ha)	1346		1604		428		355	
	Max Yield (Kgs/Ha.)	3474		2165		2325		4954	
	Top 3 distts. In descending order of Yields	Nellore, Guntur, Warangal		Surendranagar, Porbandar, Junagadh		Hanumangarh, Bikaner, Churu		Thiruvavarur, Thiruvallur, Kancheepuram	
	Area under top 3 distts (%) (highest yield levels)	1.9		30.4		37.3		8.0	
	Minimum Yield. (Kgs/Ha.)	462		1341		1100		1677	
	Distt. having Min. Yield.	Ananthapur		Sabarkantha		Tonk		Erode	
	Share of Area under Min. Yield (%)	62.6		4.8		3.8		4.9	
	Average Yield (Kgs/Ha.)	791		1744		1815		2632	
	Efficiency Gap (%)	77		19		22		47	

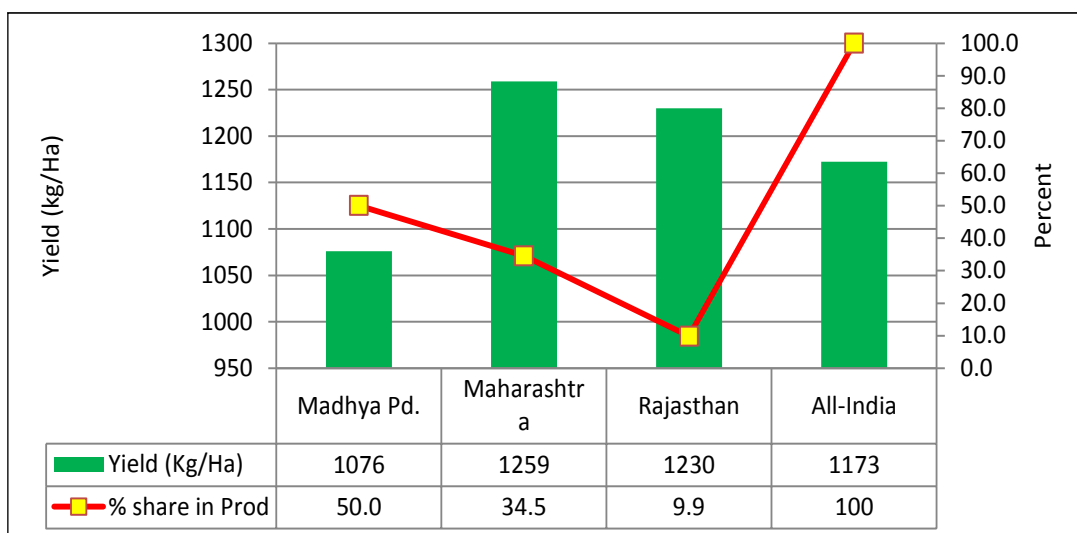
Source: State Governments and DES; * including Telangana, **TN Data is for TE 2012-13

Note: Districts with less than 1% share in total production of the state have not been considered.

Soyabean

- i. Madhya Pradesh, Maharashtra and Rajasthan contribute more than 94 percent of total production of soyabean in TE 2013-14 {Chart-3.6 (c)}.

Chart-3.6 (c): Soyabean



Source: State Governments and DES

- 3.18 Maharashtra has the highest average productivity (1259 kg/ha.) of soyabean in the country. The state has nearly 16 percent area in the top three yield bands (yield bands of 15-20 qtl./ha to 25-30 qtl./ha). Amongst major producers of the crop, Madhya Pradesh has the lowest average productivity (1076 kg/ha) and its one-third area is in low yield band of 5-10 qtl./ha {Table-3.4(c)}. The top three districts in terms of productivity are Chhindwara, Dhar and Mandsaur in Madhya Pradesh; Kolhapur, Satara and Sangli in Maharashtra; Baran, Kota and Bundi in Rajasthan. The efficiency gaps in the productivities within these states vary in the range of 8 percent in Rajasthan to 55 percent in Maharashtra. Similar district-wise analyses of other important kharif crops are given in Annex Charts-3.4 (a) to 3.4(c) and Annex Tables 3.2(a) to 3.2(c).

Table-3.4 (c): District-wise Productivity Levels of Soyabean, TE 2013-14

S.N.	Yield Band (Kgs/Ha.)	MP		Maharashtra		Rajasthan	
		Area (%)	No. of Distts.	Area (%)	No. of Distts.	Area (%)	No. of Distts.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	500-1000	34.0	10	23.8	5	-	-
2	1000-1500	54.7	14	58.0	10	98.1	7
3	1500-2000	2.6	1	11.4	3	-	-
4	2000-2500	-	-	3.0	2	-	-
5	2500-3000	-	-	1.5	1	-	-
Summary Indicators of Land Productivity	Total Area ('000 ha)	6027		3602		1038	
	Max Yield (Kgs/Ha.)	1674		2809		1342	
	Top 3 distts. In descending order of Yields	Chhindwara, Dhar, Mand-saur		Kolhapur, Satara, Sangli		Baran, Kota, Bundi	
	Area under top 3 distts (%) (highest yield levels)	11.7		4.5		52.2	
	Minimum Yield. (Kgs/Ha.)	549		775		1014	
	Distt. having Min. Yield.	Hoshangabad		Nagpur		Banswara	
	Share of Area under Min. Yield (%)	3.6		5.9		2.2	
	Average Yield (Kgs/Ha.)	1076		1259		1230	
	Efficiency Gap (%)	36		55		8	

Source: State Governments and DES

Note: Districts with less than 1% share in total production of the state have not been considered.

Maharashtra data is for TE 2014-15

3.19 Based on district-wise analyses, it emerges that some districts with higher yield levels within a state are contiguous i.e. are neighbouring districts (District-wise maps at Annex). While these districts may have certain advantages in terms of natural

endowment, they could be following different farming practices and applying better inputs. Given the fact that there is an increasing pressure on land resources, it becomes important to make optimal utilization of land. In this background, it is imperative to study these districts in greater details so as to propagate /replicate farming practices and inputs used in these districts to other districts through credible extension services.

- 3.20 To augment productivity levels, resource conservation technology (RCT) such as zero tillage, farm mechanization and extension services be ramped up. Timely planting of crops with no-till (zero-till or surface seeding) lowers production costs, improves productivity and saves irrigation water and crop residues from burning. Extension services need to be revamped, modernized and strengthened in terms of personnel, resources and technology applications. 'Village Level Support Centre' (VLSC) be developed for small and marginal farmers by State Governments in consultation with PRIs to provide services ranging from modern scientific cultivation practices, access to farm machinery on custom hiring basis, soil testing services to dissemination of information on weather and markets. This will go a long way to narrow down the efficiency gaps between the productivity levels of benchmark districts and those of others. It is also emphasized to provide better technology, improved seed varieties, fertilizers and manures etc. to the farmers well in time in order to enhance the productivity. The soil laboratories being established to test the soil characteristics may help optimising usage of inputs and enhancement of productivity.

Incentivising Efficiency: Linking MSP of Sunflower with Oil Content

- 3.21 Based on sound economic principle, MSPs of oilseeds ought to have an explicit and direct relation with its 'oil content'. To augment resource use efficiency, the Commission is of the considered opinion that farmers be incentivized for higher 'oil content'. On the basis of detailed discussions held with various stakeholders such as sunflower cultivators, processors, scientists of ICAR, the Commission recommends that the MSP of sunflower be linked to the basic 'oil content' of 35 percent in sunflower seeds and farmers be incentivized for every 0.25 percent point increase in its 'oil content' beyond this level.
- 3.22 To cogently determine the scale of incentive for higher 'oil content', it is assumed, without loss of generality, that miller processes 1 quintal of oilseeds. From this

process, he will get 35 kgs of oil and 65 kgs of oil cake. Based on average prices of oil cakes at around Rs.2290 per quintal and MSP at Rs.3800/ quintal (being recommended in this report), he will realize Rs.1488.50 (Rs.2290*0.65) from the cake. Thus, the cost of this raw material (conceptually, oil component but without cake) would be Rs. 2311.50 (Rs.3800.00 -1488.50) which will contain 35 kgs of oil. Thus, the cost per kg (which is nothing but 1 percent) of oil will be Rs. 66.04 or Rs.16.51 for every 0.25 percent point (Table-3.5). Details may be seen in Annex Table-3.3.

Table-3.5 : Simulation-Impact of Oil Content on MSP of Sunflower

S.N.	Oil Content (%)	Oil Cake (%) {100-col(2)}	Realisation from oil cake on processing of 1 quintal of oilseeds, assuming price of cake/q= Rs.2290 {col(3)*- Price of Oil cake}/100	Cost of Oil Content i.e. oilseeds without cake (Rs/qtl.), assuming MSP/ qtl.= Rs.3800 MSP-Col(4)	Cost of Oil Content i.e. oilseeds without cake for each 0.25 percent point of oil content (Rs/qtl.) {col(5)/col(2)}*0.25	MSP at Oil Content given in col. (2)[MSP+{Average of col.(6)* percent points of oil content that is over & above 35%}]/(0.25)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.	35.00	65.00	1488.50	2311.50	16.51	3800.00
2.	35.25	64.75	1482.78	2317.23	16.43	3814.90
3.	35.50	64.50	1477.05	2322.95	16.36	3829.80
4.	35.75	64.25	1471.33	2328.68	16.28	3844.70
5.	36.00	64.00	1465.60	2334.40	16.21	3859.60
6.	37.00	63.00	1328.20	2471.80	14.71	4217.20
7.	38.00	62.00	1305.30	2494.70	14.50	4276.79
8.	39.00	61.00	1282.40	2517.60	14.30	4336.39
9.	40.00	60.00	1259.50	2540.50	14.11	4395.99
10.	41.00	59.00	1236.60	2563.40	13.93	4455.59
11.	42.00	58.00	1213.70	2586.30	13.76	4515.19
Average increase in MSP with 0.25 percent point increase in oil content					14.90	

3.23 However, cost per unit of oil content slowly decreases with increase in 'oil content'. To illustrate, it is Rs. 16.51 for every 0.25 percent point when 'oil content' is 35 percent and decreases to Rs.13.59 percent point when the oil content increases to

48 percent (Annex Table-3.3). Taking average over oil content between 35 percent and 48 percent, the average cost for every 0.25 percent point works out to Rs. 14.90/ qtl. The Commission, therefore, recommends that MSP be increased by Rs. 14.90/ qtl. for every 0.25 percent point increase in 'oil content' over and above the base oil content of 35 percent in sunflower. It will not only incentivize farmers but also the processors for the cost of processing per unit oil content will come down with increase in oil content in the oilseeds. This will be so as the processing cost depends on the quantity of oilseeds processed and with increase in oil content, the cost of processing a given quantity of oilseeds will spread to larger quantity of oil and hence will lower the processing cost per unit of oil produced. The Commission also recommends that such a dispensation of linking MSP with oil content in other major oilseeds be introduced in a phased manner to augment production of edible oils in the country.

- 3.24 The next question arises as to how to implement this. One way to do this is to install Nuclear Magnetic Resonance (NMR) apparatus or any other such instrument at procurement centres/ mandis to test oil content of every consignment and arrive at the consignment-specific price of the sunflower, based on such test reports (percent oil content), in a calibrated manner. These apparatus take about twenty seconds' time to give the result and measure oil content in a sample with a precision upto two decimal places. The Commission, therefore, recommends installation of oil content measurement apparatus in every procurement Centre of NAFED/mandi. This will induce oilseeds farmers to adopt modern technology and better farming practices.
- 3.25 In its report on 'Price Policy for Rabi Crops: The Marketing Season 2015-16', submitted in July 2014, the Commission had made similar recommendation to link MSP of R&M to its oil content. This was not accepted simply on the ground of non-availability of the requisite equipment. The said equipment is not highly sophisticated and is currently used, albeit on a limited scale. The Commission is aware of the fact that such equipments are not commonly seen in mandis/procurement centres, possibly due to less demand. However, this should not be construed as its non-availability. The Commission urges the Government to explore the possibility of supply of the equipment with reputed manufacturers and lend initial 'hand holding' to NAFED /procurement centres to enable them to acquire/purchase the equipment so as to ensure that MSP of sunflower seeds is linked to its 'oil content' from ensuing kharif season.

Drivers of Yield

3.26 Having established an inverse relationship between productivity and cost, it is logical to explore and identify the drivers of the productivity. For this purpose, it is hypothesised that yield levels are affected by technology (fertilisers, irrigation and seeds), nature (rainfall) and returns in the preceding season. This hypothesis has been statistically tested by undertaking simple linear regression analyses on panel data for 2000-01 to 2012-13 across states. Based on the elasticities of productivity thus estimated (Annexure Table-3.4), it emerges that farmers are economically rational as they do respond to price signals. The productivity of paddy, just as an example, may be enhanced by 1 percent in the following year when gross returns increase by 10 percent in the current year. It may, however, be noted that these are preliminary results which may alter depending upon formulation of models.

Recapitulation

3.27 To wrap up the foregoing analyses, the following points are noteworthy:

- i. Given that paddy is a water guzzling crop, its long term development must ensure that water pricing policies are formulated in a manner that reflects its scarcity. Instead of focusing on economy in water use in agriculture, most state governments have been content with subsidising electricity for pumping irrigation water. To promote economy in water use, it is recommended that water/electricity be metered and some quantitative ceilings on per hectare basis be fixed. If some farmers are able to use water /electricity less than the ceilings fixed for them, they should be rewarded by cash incentive equivalent to unused units of water /power at the rates of their domestic resource costs. This would encourage farmers to use drip irrigation and would enhance resources use efficiency.
- ii. In the backdrop of high import-dependence on Indonesia and Malaysia for edible oils, promoting oil palm in the country would not be just a hugely land saving strategy but would also help our domestic farmers instead of those of Indonesia and Malaysia. Through the current mix of oilseeds, 4 million MT of domestic production of edible oils is being produced in the country by using about 15.80 million hectares of land. This much quantity of palm oil could be produced from just 1 million hectares. Thus, one million hectares under oil palm is akin to over 15 million hectares under other mix of oilseeds. Accordingly, it is recommended that CACP's Report on 'Oil Palm: Pricing for Growth, Efficiency & Equity, Towards a

Rational Pricing Policy for Fresh Fruit Bunches and Potential Solution for India's Burgeoning Edible Oil Imports' be implemented in the long term interest of the country.

- iii. To augment resource use efficiency, MSP of sunflower be linked to the basic 'oil content' of 35 percent. For every 0.25 percent point increase in its 'oil content' beyond this level, MSP be increased by Rs.14.90/quintal so as to incentivize farmers to invest in technology. The Government should lend initial 'hand holding' to NAFED/ procurement centres to acquire/ purchase the requisite equipments to objectively measure oil content.
- iv. Low labour productivity in agriculture just at 17 percent compared to that of non-agriculture sector is exacerbated by migration of 44 lakh agricultural labourers, on an average, every year. To tackle this, traditional farming occupations need to be replaced by widespread adoption of farm mechanization. For this purpose, a Scheme to develop a cooperative based 'Custom Hiring Model' under which a variety of machines for different farming operations be offered on rent. While doing this, care should be taken to customize the machines according to domestic requirement because imported machinery is not always suited for Indian crop architecture.
- v. To augment productivity levels, resource conservation technology (RCT) such as zero tillage, and farm mechanization be ramped up. Timely planting of crops with no-till (zero-till or surface seeding) lowers production costs, improves productivity and saves irrigation water and crop residues from burning. For this to spread widely, extension services need to be modernized and strengthened in terms of personnel, resources and technology applications.
- vi. Disaggregated analyses show that significant efficiency gaps exist between productivity levels of benchmark districts and those of others. To ramp up productivity at district levels, 'Village Level Support Centre' (VLSC) be developed for small and marginal farmers by State Governments in consultation with PRIs. VLSC should provide services ranging from modern scientific cultivation practices, improved seed varieties, soil testing services to dissemination of information on weather and markets.



CHAPTER-4 Costs, Profitability, Inter-Crop Price Parity and Terms of Trade

Chapter — 4

- 4.1 Cost of production (CoP) is one of the important factors in the determination of MSP of mandated crops. Besides cost, the Commission considers other important factors such as demand and supply, price trends in the domestic and international markets, inter-crop price parity and terms of trade between agricultural and non-agricultural sectors, the likely impact of MSPs on consumers, in addition to ensuring rational utilization of natural resources like land and water. Thus, pricing policy is rooted not in 'cost plus' approach, though cost is an important determinant of MSP.
- 4.2. The Commission uses the cost estimates furnished by DES, Ministry of Agriculture under Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in India (CS). However, as CS data is generally available with a time lag of two years, it needs to be projected for KMS 2015-16. Accordingly, the Commission has projected CoP estimates for KMS 2015-16, based on actual estimates for the latest three years viz. 2010-11 to 2012-13 state-wise and at all-India level. These projections capture movement in overall input cost separately for 2015-16 over each of three years viz. 2010-11, 2011-12 and 2012-13. An assessment of overall movement in input cost likely for the year 2015-16 with reference to each of three years ending 2012-13 is made by constructing the Composite Input Price Index (CIPI) based on the latest prices of different inputs like labour (including human, bullock and machine), seeds, fertilizers, manures, insecticides and irrigation charges sourced from Labour Bureau, 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 CIPI thus constructed, the Commission then projected CoP for KMS 2015-16. The costs thus projected are factored into formulation of price policy i.e. MSPs.

Costs and Profitability of Kharif Crops, 2010-11 to 2012-13

- 4.3 Profitability can be seen from three perspectives. The first is gross returns over A_2 which is defined as gross value of output less costs A_2 , second is gross returns over A_2+FL which is defined as gross value of output less costs A_2+FL and the third is net

returns which represent gross value of output less costs C_2 . The average returns (both gross and net) during 2010-11 to 2012-13 for various kharif crops are presented in Table-4.1 and Chart-4.1. It may be seen from Table-4.1 that the gross rate of returns over A_2 are positive and significant for all kharif crops while the gross rate of returns over A_2+FL is negative for ragi. The net rates of returns are also positive in all crops except jowar, bajra, ragi and nigerseed. The state-wise details of average returns are given at Annex Table-4.1.

Table-4.1: Gross and Net Returns of Kharif Crops
(Average 2010-11 to 2012-13)

S. N.	Crops	Cost A_2	Cost A_2+FL	Cost C_2	GVO	Gross Returns over A_2		Gross Returns over A_2+FL		Net Returns	
						Rs./ha. (Col.6-Col.3)	Percent (Col.7/Col.3*100)	Rs./ha. (Col.6-Col.4)	Percent (Col.9/Col.4*100)	Rs./ha. (Col.6-Col.5)	Percent (Col.11/Col.5*100)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
A-Cereals											
1	Paddy	22645	30070	42441	46797	24151	107	16727	56	4356	10
2	Maize	16253	22491	31492	35357	19104	118	12867	57	3865	12
3	Jowar	14396	19358	27292	27227	12831	89	7869	41	-66	-0.2
4	Bajra	8584	14380	19558	19064	10480	122	4684	33	-494	-3
5	Ragi	17935	25070	33446	24761	6826	38	-309	-1	-8685	-26
B-Pulses											
6	Tur	18011	23008	34012	39517	21506	119	16509	72	5505	16
7	Moong	9711	13688	18391	19518	9807	101	5830	43	1126	6
8	Urad	9727	14410	20938	23540	13813	142	9130	63	2602	12
C-Oilseeds											
9	Ground-nut	28612	34850	49425	56513	27901	98	21664	62	7088	14
10	Soyabean	15142	18342	27250	35121	19979	132	16779	91	7871	29
11	Sunflower	13828	16343	22461	23613	9785	71	7270	44	1152	5
12	Sesamum	8078	12880	18396	22790	14712	182	9911	77	4395	24
13	Niger-seed	5440	9632	13627	12998	7558	139	3366	35	-629	-5
D-Commercial Crops											
14	Cotton	32098	39983	57666	70400	38301	119	30417	76	12734	22

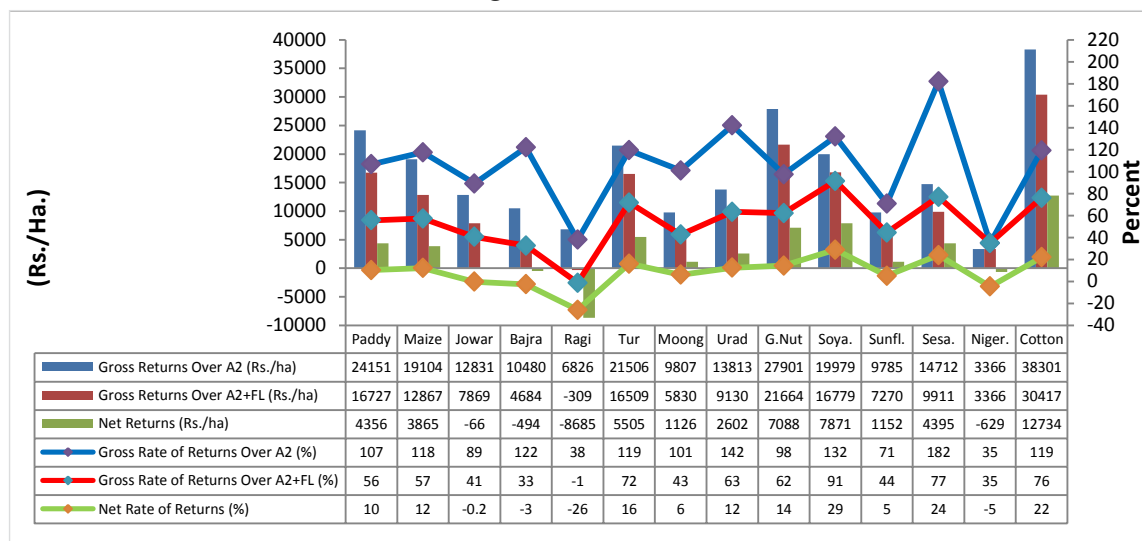
Source: Comprehensive Scheme for Studying the Cost of Cultivation of Principal Crops in India, DES, Ministry of Agriculture.

Notes: i. A_2 cost includes all expenses in cash and kind on account of hired labour including human, bullock, machine, seed, insecticides, pesticides, manure, fertilizers, irrigation charges and miscellaneous expenses.

ii. A_2+FL cost includes A_2 and family labour.

iii. C_2 cost includes A_2+FL cost, rental value of owned land and interest on owned fixed capital.

Chart-4.1: Gross and Net Returns of Kharif Crops
(Average 2010-11 to 2012-13)

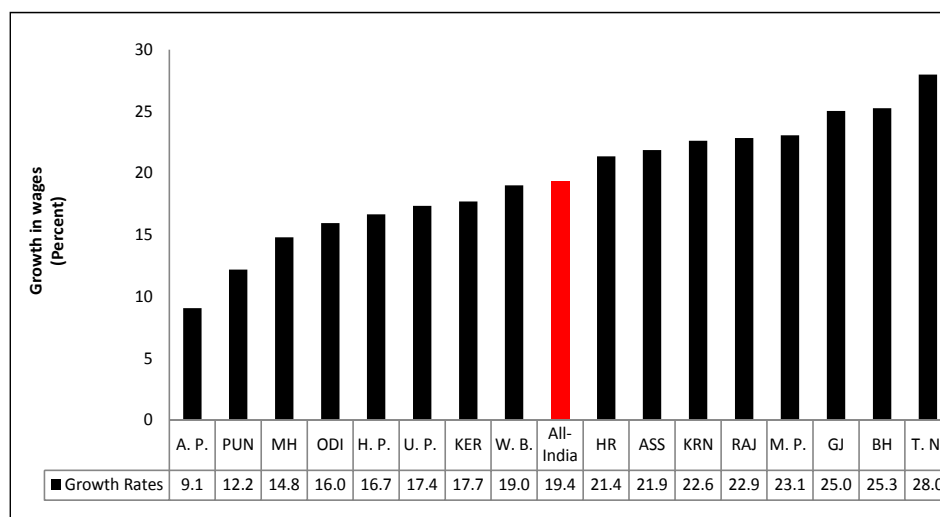


Source: CACP Calculations.

Labour and Input Price Movement

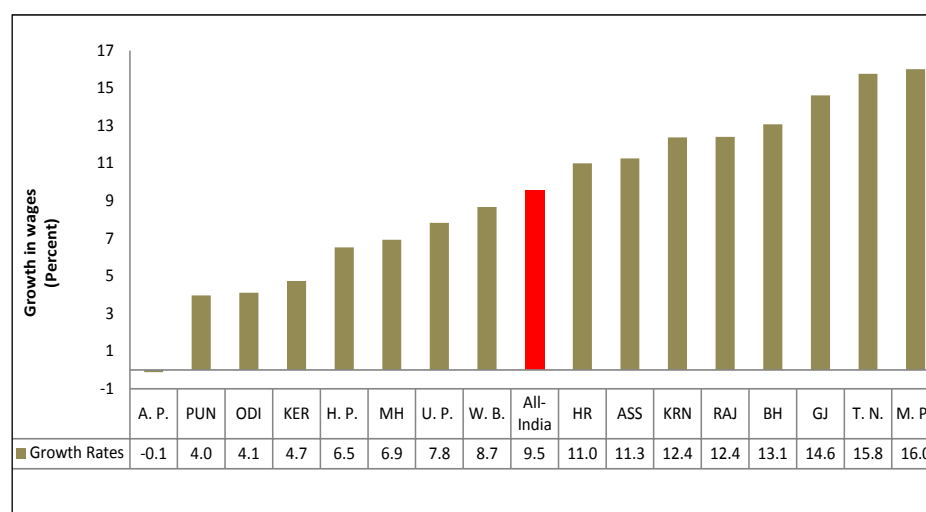
4.4 Chart-4.2 (a) and (b) depict average annual growth in wage rates of agricultural labour in major states and at all-India level at current prices and constant prices (2014-15=100) respectively for TE 2014-15. At all-India level, agricultural wage rates have increased by 19.4 percent at current prices while 9.5 percent at constant prices during TE 2014-15. The increase during this period is the highest at 28 percent at current prices in Tamil Nadu and 16 percent at constant prices in Madhya Pradesh whereas the lowest at 9.1 percent at current prices and (-)0.1 percent at constant prices in Andhra Pradesh. The state-wise and all-India details of monthly average daily wage rates of agriculture labour in nominal terms are given in Annex Table-4.2. Given the fact that wage rates have been increasing significantly and 44 lakh agri-labourers, on an average, is migrating to non-agriculture sector every year, it is imperative to adopt farm mechanization in a big way. This will also help improve productivity, contain costs and enhance profitability.

Chart-4.2(a): Annual Average Growth in Wages of Agricultural Labour, TE 2014-15
(At Current Prices)



Source: Labour Bureau, Simla

Chart-4.2(b): Annual Average Growth in Wages of Agricultural Labour, TE 2014-15
(At Constant Prices, 2014-15=100)

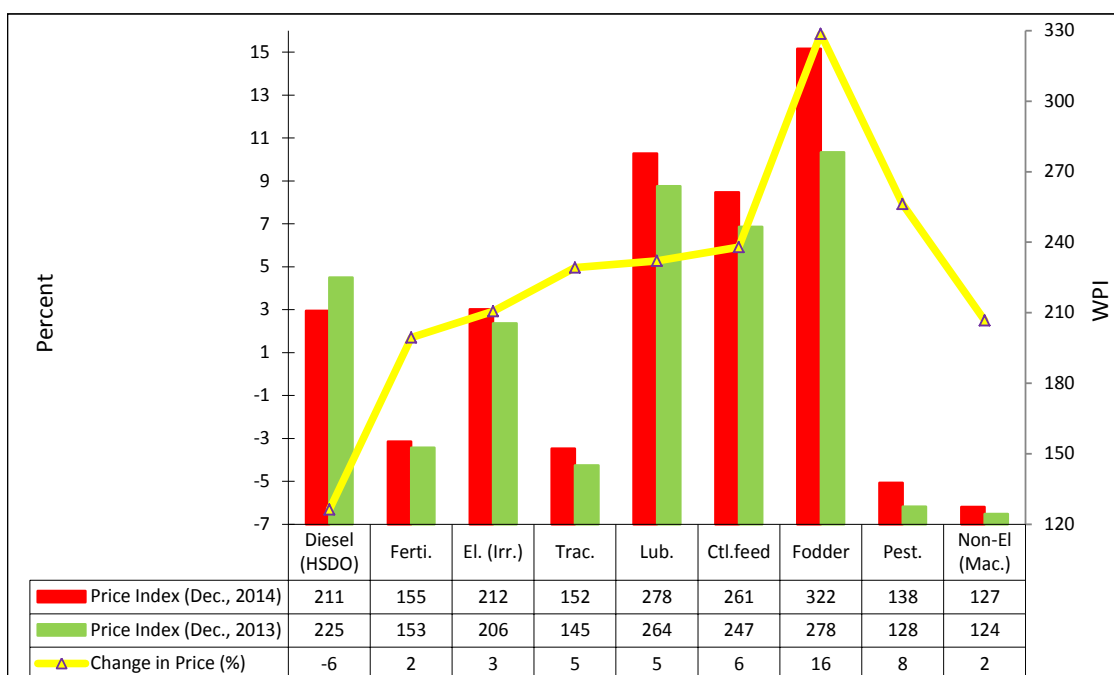


Source: Labour Bureau, Simla

- 4.5 The prices of major farm inputs, except diesel (Chart-4.3), based on WPI (2004-05=100), exhibit an upward trend during the period December, 2013 to December, 2014. While prices of fertilizers, electricity for irrigation, tractors, lubricants, cattle feed and pesticides have increased in the range of 2 percent to 8 percent, that of fodder

has increased by 16 percent. However, the prices of HSD have declined by 6 percent during the corresponding period (details in Annex Table-4.3).

Chart-4.3: Movements in Prices of Farm Inputs
(Dec., 2014 over Dec., 2013)



Source: Ministry of Commerce and Industry

Cost Projections, KMS 2015-16

4.6. Based on the state-wise costs and CIPI, an all India weighted average cost of production, with weights being relative shares of the states in the total production in TE 2013-14, have been projected for KMS 2015-16 (Table-4.2).

Table-4.2: Projected Costs, KMS 2015-16

(Rs/qttl)

S. No.	Crops	Cost of Production		
		A ₂	A ₂ +FL	C ₂
(1)	(2)	(3)	(4)	(5)
1	Paddy	780	1020	1324
2	Jowar	1170	1467	1929
3	Bajra	535	893	1154
4	Maize	696	941	1223
5	Ragi	1196	1688	2069
6	Tur	2453	3237	4272
7	Moong	2714	3993	5025
8	Urad	2529	3455	4483
9	Groundnut	2584	3314	4195
10	Soyabean	1527	1770	2418
11	Sunflower	2846	3282	4114
12	Seasmum	2765	4132	5189
13	Nigerseed	2119	3146	4068
14	Cotton	2228	2753	3767

Source: CACP Calculations.

4.7 The state-wise and all India projected costs of fourteen kharif crops under the domain of MSP for KMS 2015-16 are given in Annex Table-4.4. Also state-wise actual costs for 2011-12 and 2012-13 are at Annex Table-4.5 (a) to (n). It may be mentioned that the expenses that farmers incur on marketing, transportation and crop insurance premium differ from crop to crop and from state to state. However, the information furnished by states is very sketchy. No data is available on how many farmers have opted and got benefited through Crop Insurance Scheme for different crops. Nevertheless, based on the available information, the expenditure on these items generally range between 2 to 3 percent of costs. Therefore, more exhaustive work is required to ascertain the robustness of these estimates.

Table-4.3: All India Kharif Crops Input Index

S. No.	Inputs	Weights (2012-13)	Kharif Crops Input Index				Percentage Change in Input Index 2015-16 over 2014-15
			2012-13	2013-14	2014-15	2015-16	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	HL	0.53	307	333	358	385	7.6
2	BL	0.07	263	281	302	322	6.8
3	ML	0.13	188	217	207	198	-4.4
4	SEEDS	0.07	243	257	274	291	6.3
5	FERT.	0.11	132	133	138	138	0.1
6	MANR.	0.03	244	260	278	296	6.5
7	INSEC.	0.03	122	128	136	141	4.0
8	IRR.CH.	0.04	154	155	158	162	2.4
9	Composite Input Index		253	274	290	307	5.8

- 4.8 To arrive at the all India weighted average composite input index for 2012-13 to 2015-16, on the basis of state-wise indices, an all India weighted average input index, with weights being relative shares of total area under the crop in the state, TE 2013-14 has been worked out. On the basis of this all India crop-wise indices, all India weighted average input index, with weights being relative shares of the the total production of crops, TE 2013-14 has been arrived at. It may be observed from Table-4.3 that the all India kharif crops composite index is showing an upward trend with an increase of 5.8 percent in 2015-16 over 2014-15. Also, the growth in human labour (HL) input index at 8 percent is consistent with that of CPI (AL) growth at 7 percent during the last three years i.e. 2012-13 to 2014-15.
- 4.9 Charts-4.4 (a) to (m) depict the cost of production (C_2) by states as well as at all-India level in ascending order of cost with their relative shares in the total production for different crops. It may be noted that the percent of production covered by the all India weighted average cost of production and also MSP vary from crop to crop. For instance, the production covered at C_2 costs are 57 percent in case of paddy, 53 percent in maize, 42 percent in tur, 75 percent in groundnut and 65 percent in cotton. It may be noted that the shares of production covered at MSP are 77 percent in case of paddy, 71 percent in cotton, 80 percent in maize, 42 percent in tur and 26 percent in groundnut.

Chart-4.4(a) to (m): Supply Curves and Projected Costs, KMS 2015-16

Chart-4.4(a): Paddy

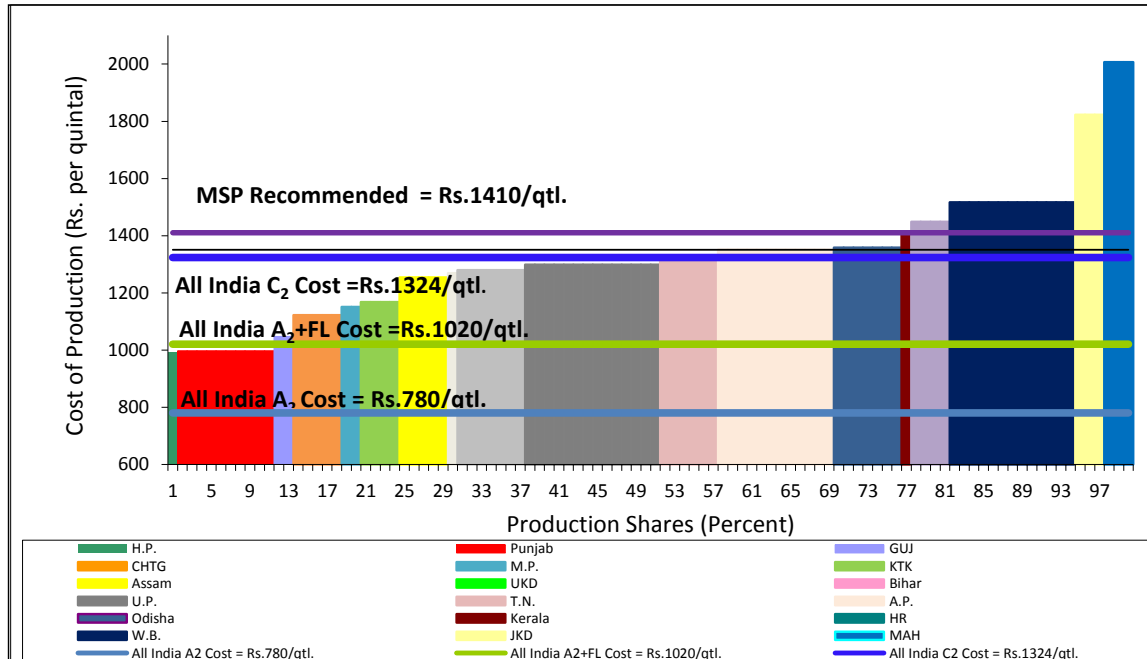
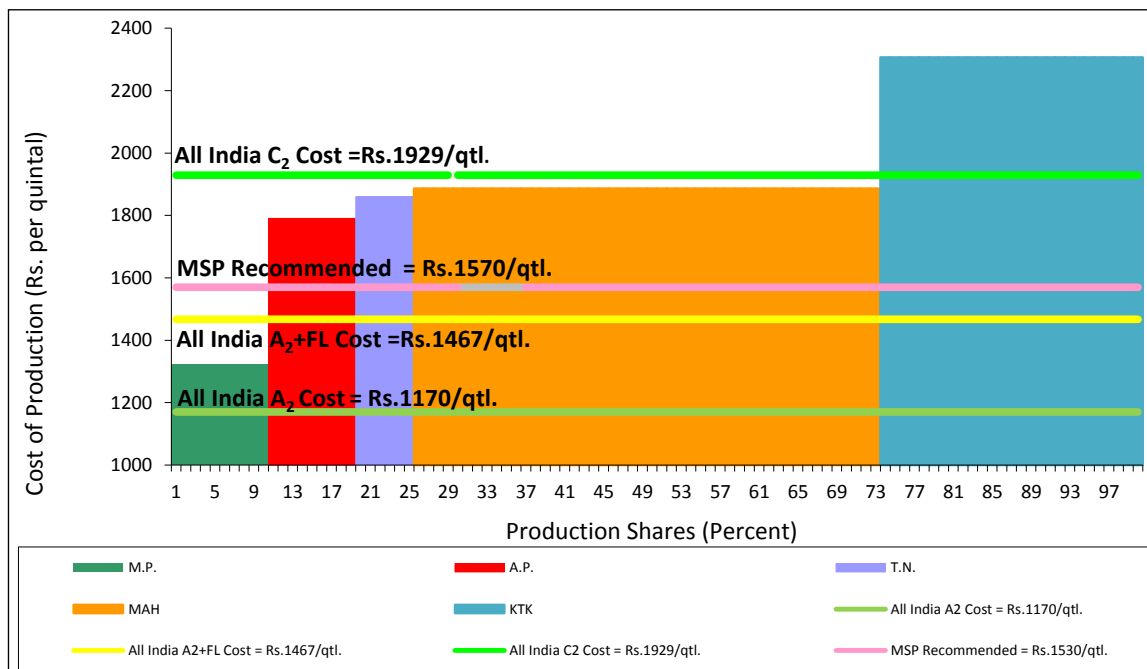


Chart-4.4(b): Jowar



Costs, Profitability, Inter-Crop Price Parity and Terms of Trade

Chart-4.4(c): Bajra

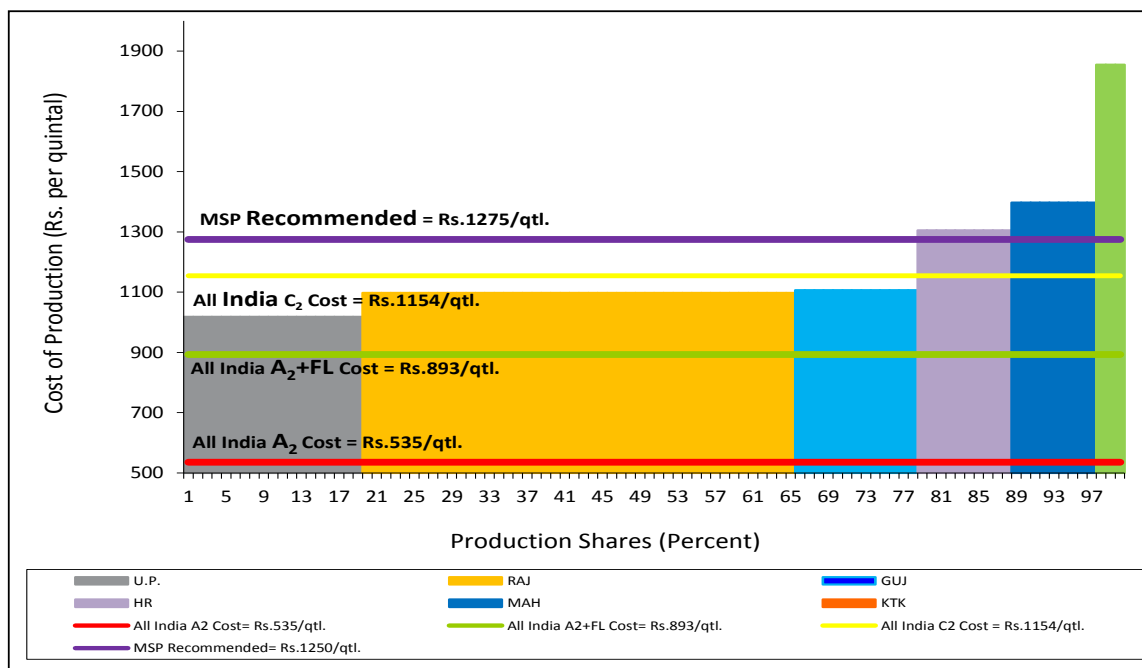


Chart-4.4(d): Maize

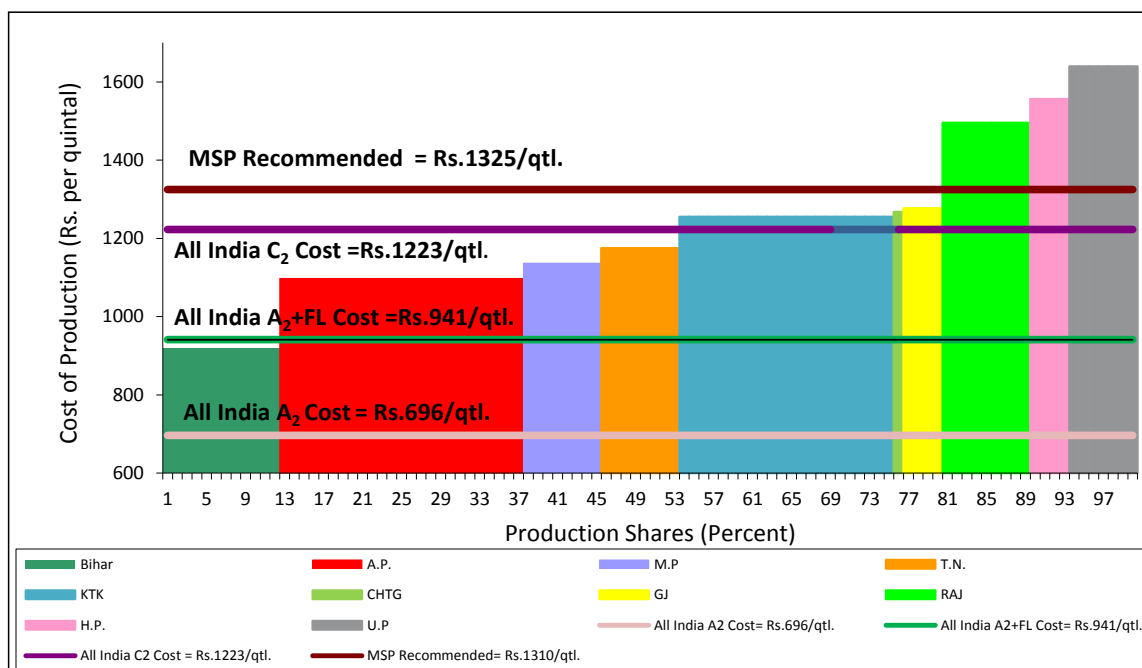


Chart-4.4(e): Ragi

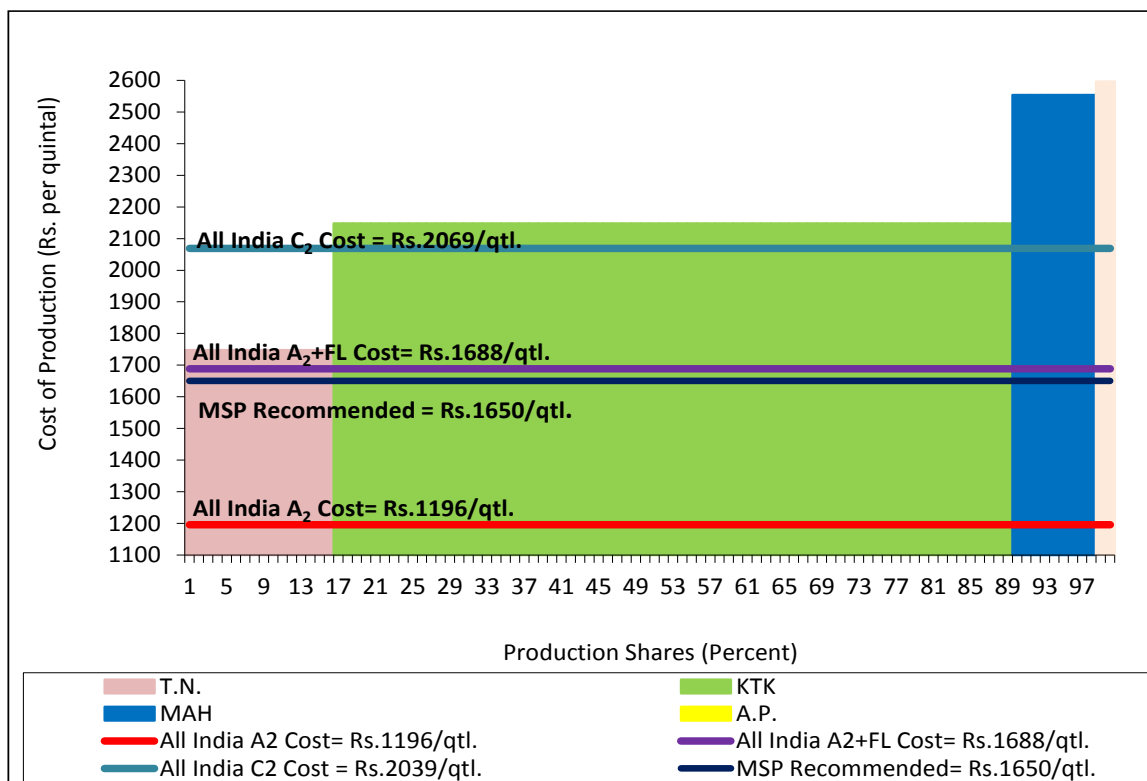
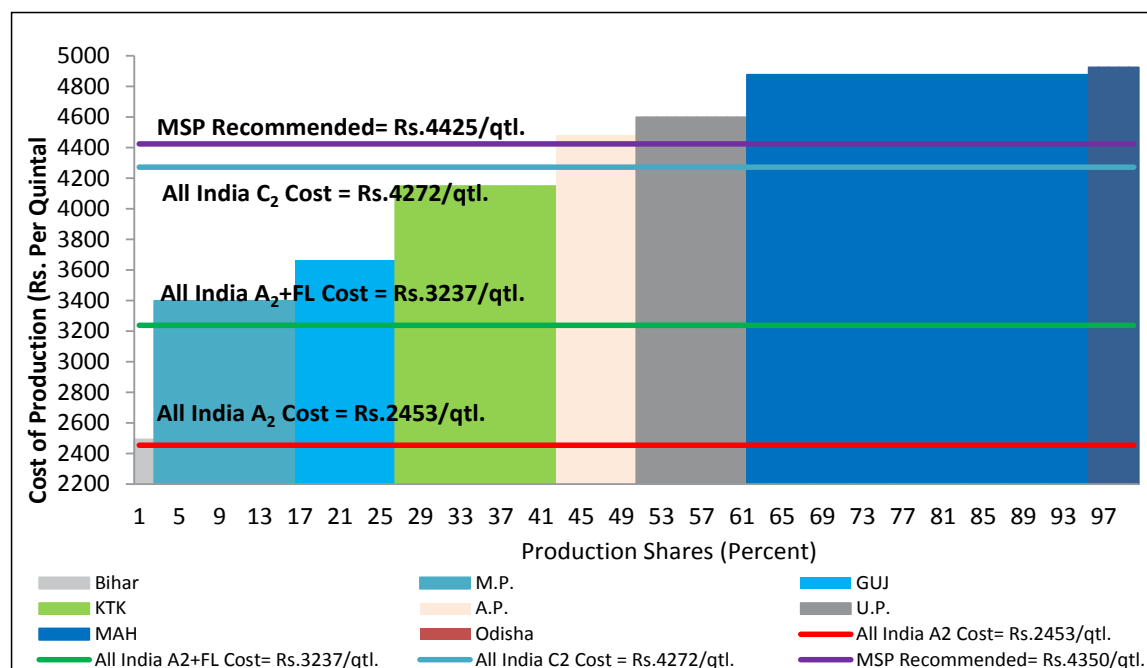


Chart-4.4(f): Tur (Arhar)



Costs, Profitability, Inter-Crop Price Parity and Terms of Trade

Chart-4.4(g): Moong

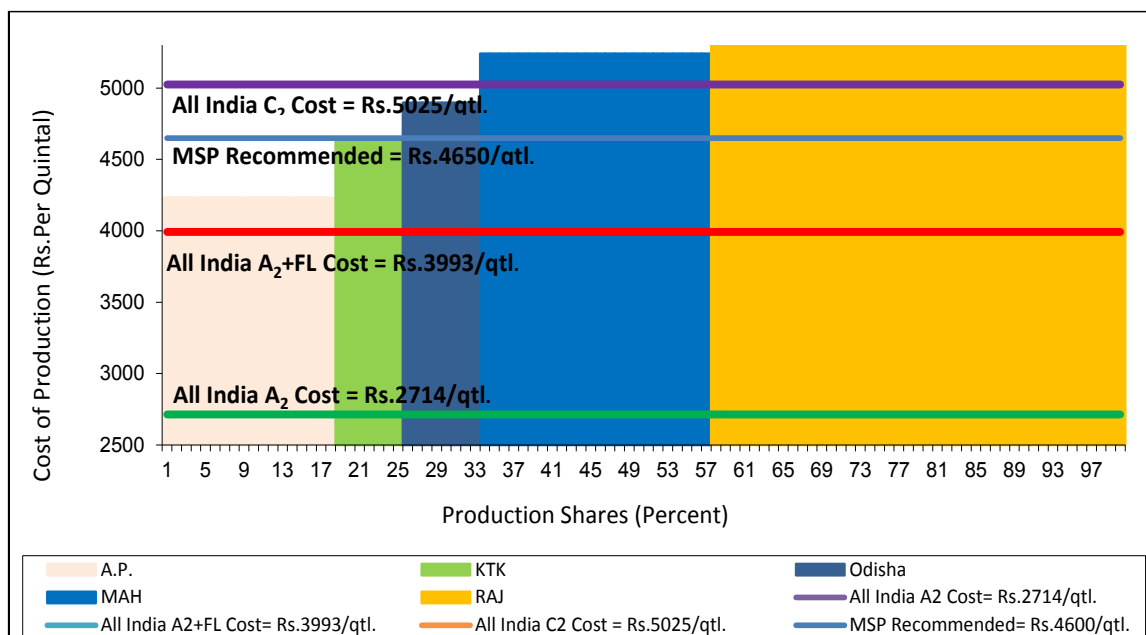


Chart-4.4(h): Urad

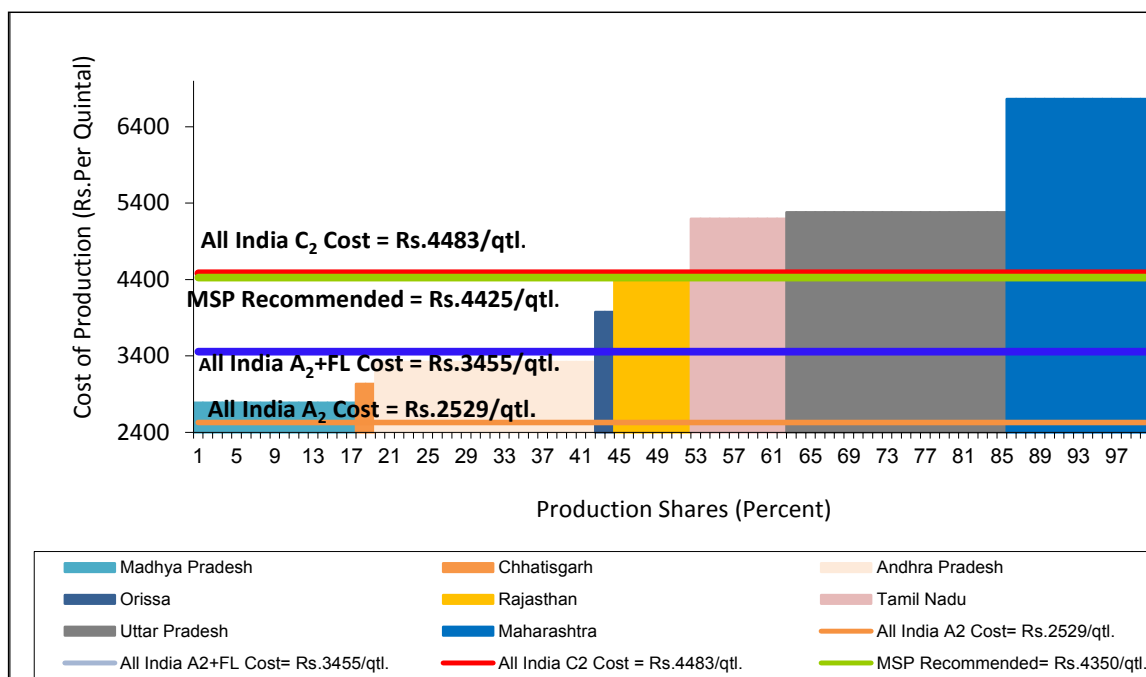


Chart-4.4(i): Groundnut

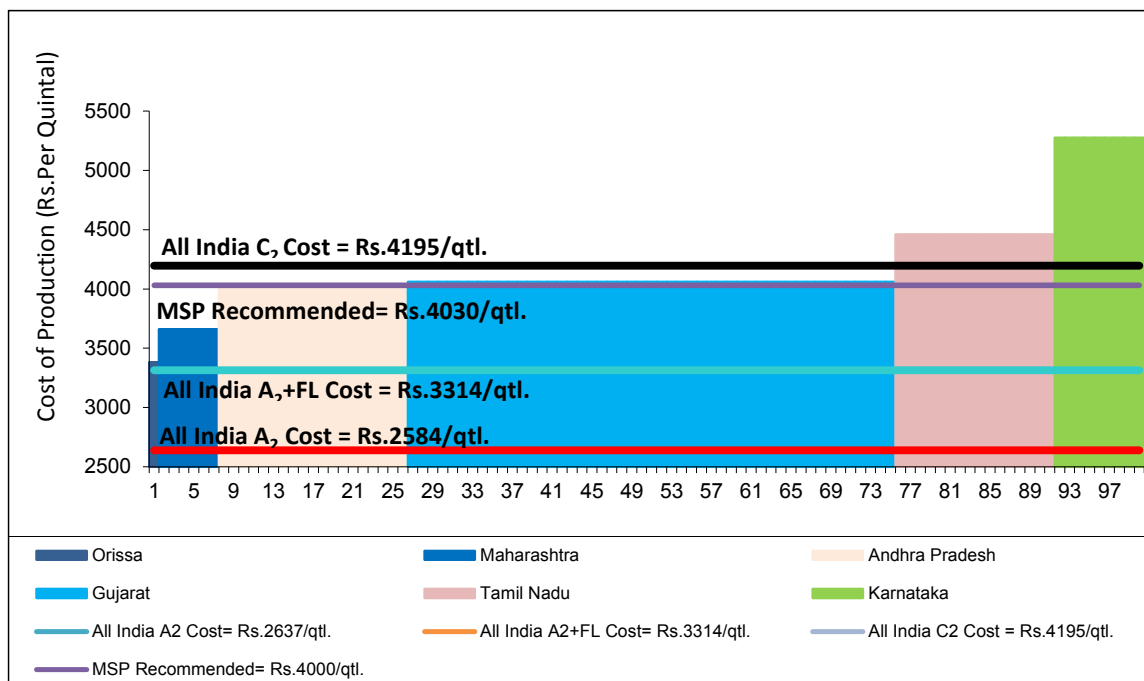
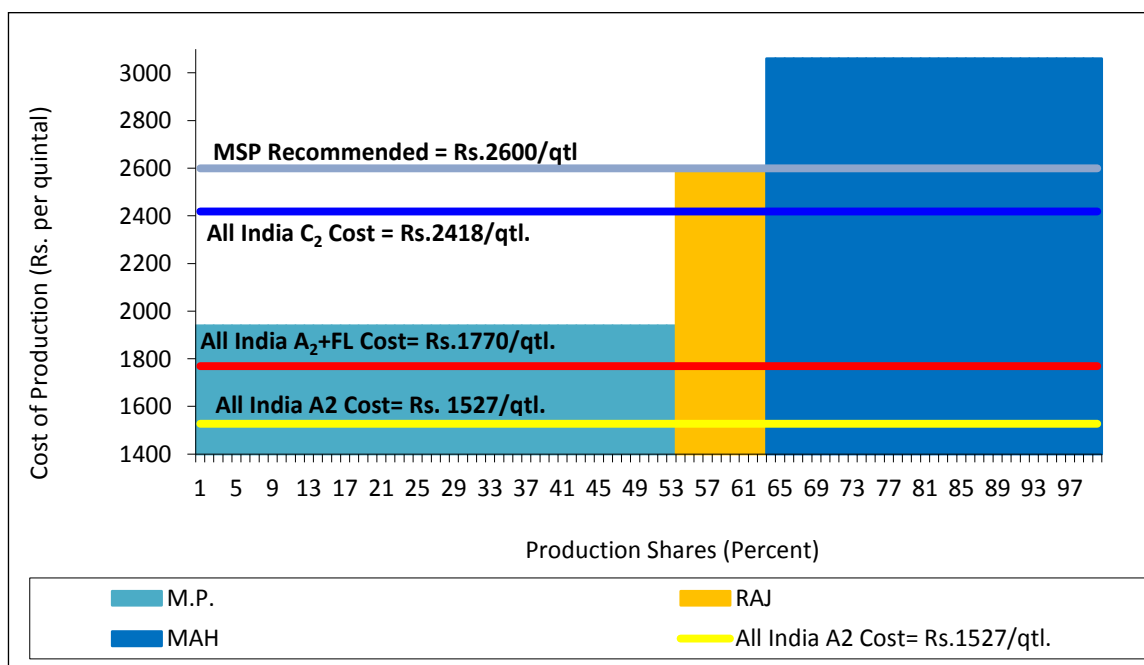


Chart-4.4(j): Soyabean



Costs, Profitability, Inter-Crop Price Parity and Terms of Trade

Chart-4.4(k): Sunflower

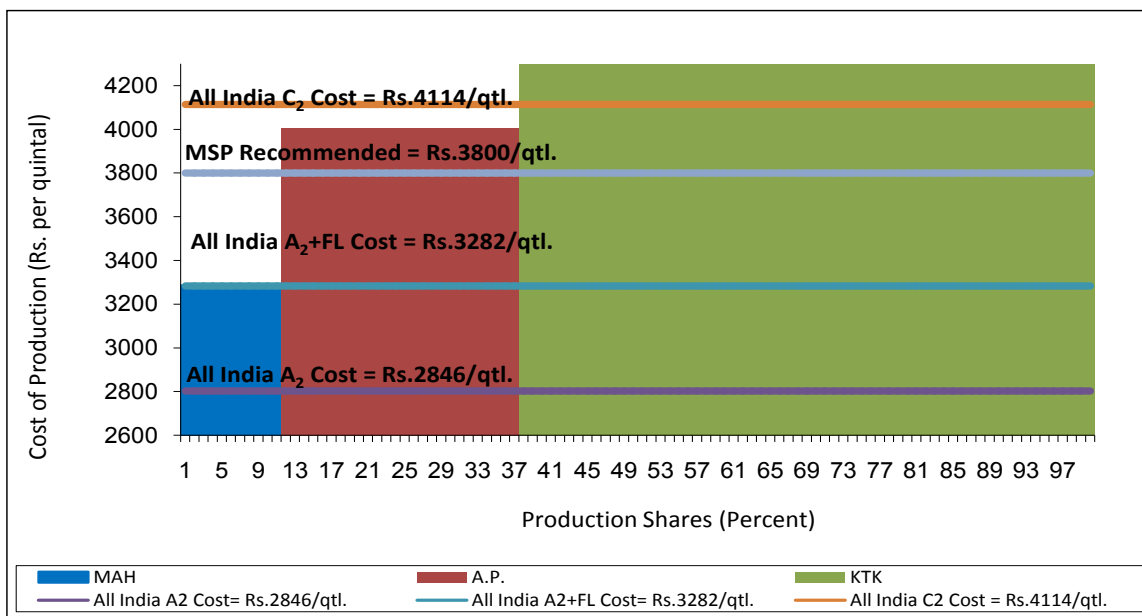


Chart-4.4(l): Sesamum

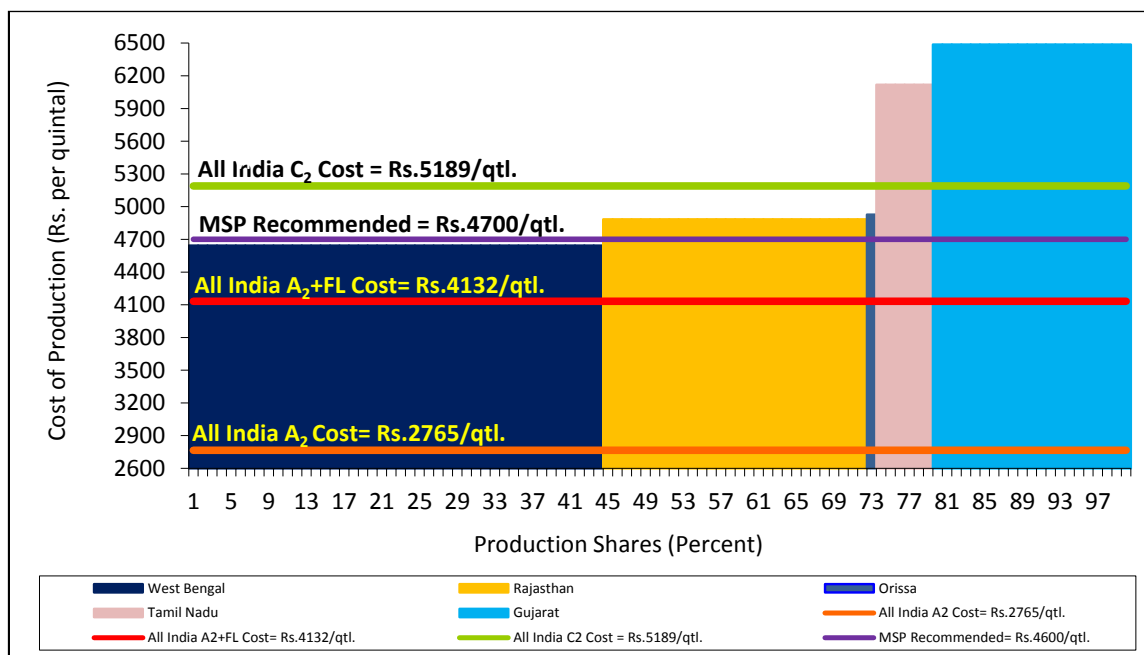
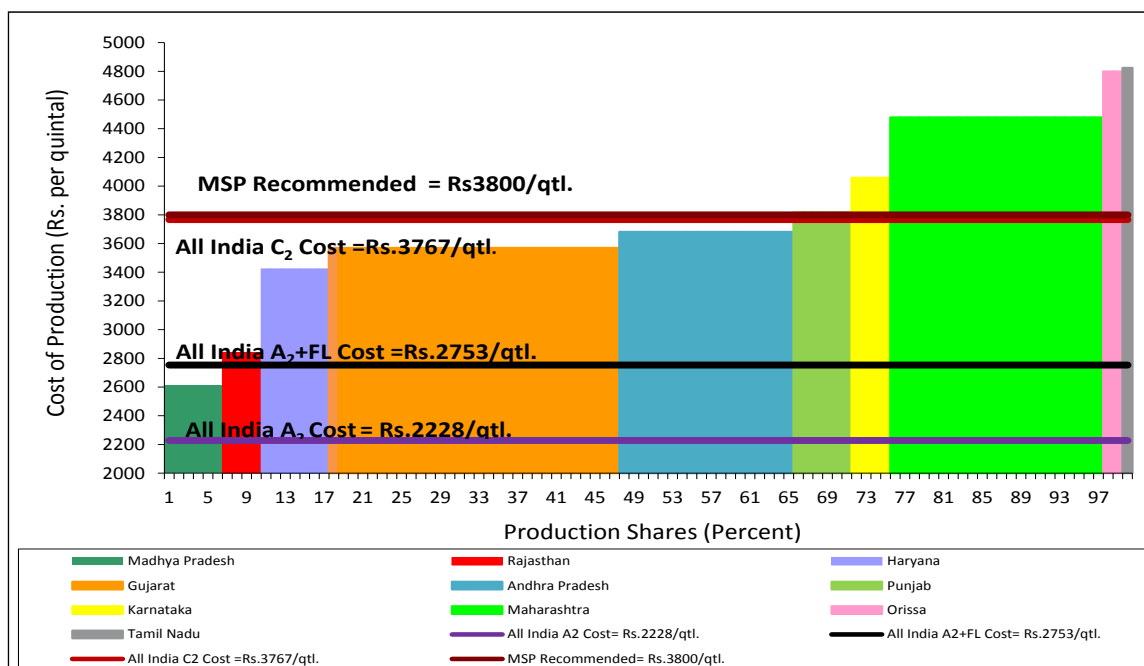


Chart-4.4(m): Cotton



Inter Crop Price Parity

4.10 Inter crop price parity being a factor for determination of MSPs, the Commission computes per hectare returns of different crops that are substitutes for each other. Table-4.4 outlines relative returns over A_2 , A_2+FL and C_2 in percent terms for various kharif crops in reference to that of paddy. It is observed that relative gross returns over cost A_2 for all kharif crops vary in the range of 33 percent for Nigerseed to 171 percent for Sesamum. It is found that the relative gross returns over A_2+FL and net returns for all cereals except maize are low as compared to paddy. Out of all the kharif crops, the relative net return is maximum for soyabean at 281 whereas it is minimum for ragi at (-) 253.

Table-4.4: Crop-wise Relative Returns (Percent)
(Average 2010-11 to 2012-13)

S. No.	Crops	Relative Gross Returns over A_2 with respect to paddy	Relative Gross Returns over A_2+FL with respect to paddy	Relative Net Returns with respect to paddy
(1)	(2)	(3)	(4)	(5)
A-Cereals				
1	Paddy	100	100	100
2	Maize	110	103	120
3	Jowar	84	73	-2
4	Bajra	114	59	-25
5	Ragi	36	-2	-253
B-Pulses				
6	Tur	112	129	158
7	Moong	95	77	60
8	Urad	133	114	121
C-Oilseeds				
9	Groundnut	91	112	140
10	Soyabean	124	164	281
11	Sunflower	66	80	50
12	Sesamum	171	138	233
13	Nigerseed	33	63	-45
D-Commercial Crop				
14	Cotton	112	137	215

Terms of Trade

4.11 The Terms of Trade (ToT) between agricultural and non-agricultural sectors refers to the ratio of prices farmers receive for their produce to what they pay for goods and services purchased. A Working Group on ToT, set up by the Ministry of Agriculture (MOA), has submitted its Report on 29th Jan., 2015. The Group has undertaken a comprehensive exercise of constructing year-wise indices of prices received (IPR) by farmers. Out of 79 commodities in the basket of IPR, 40 agricultural crops, 29 fruits and vegetables and 10 livestock, fishing and forest products. The IPR has been compared with separate indices of prices paid (IPP) for products bought by farmers. These include final consumption items (74 of them – from rice and edible oils to toilet soaps, medicines, mobile and cable TV services, two-wheelers and gold jewellery), intermediate inputs (seed, fertiliser, pesticide, livestock feed,

electricity/irrigation charges, diesel, hired labour, marketing costs and interest on loans) and capital goods (tractor, electric motor/pump, cement, bricks, steel and other construction materials). It is found that ToT has moved in favour of farmers between 2004-05 and 2010-11. ToT index fell below 100 during last three years and it was at 95.55 in 2013-14, being still higher than its level of 87.82 in 2004-05. ToT movements are considerably influenced by global agri-commodity prices. As global prices rose, MSPs were raised to align with them. This led to improvement in ToT. But from 2011-12 (Annex Table-4.6), they, too, started getting squeezed, especially on account of spiraling rural wages and diesel prices. Global prices significantly affect ToT, albeit indirectly. In contrast, the ratio of agricultural prices to non-agricultural prices as calculated from the WPI improved substantially from 100.8 in 2005-06 to 158 in 2014-15 (with base year 2004-05=100).

Recapitulation

- 4.12 To sum up, the pricing policy is not rooted in the 'cost plus' approach, though cost is one of its important determinants. Given the time lag of about two to three years in dissemination of data from field levels to DES, the Commission projects the cost estimates for the ensuing year. The costs viz. A_2 , A_2+FL and C_2 , projected for the forthcoming KMS 2015-16, have been factored into formulation of price policy recommendations. The Commission recommends to reduce time lag in furnishing of cost estimates.



CHAPTER-5

Trade Competitiveness of Indian Agriculture

Trade Performance

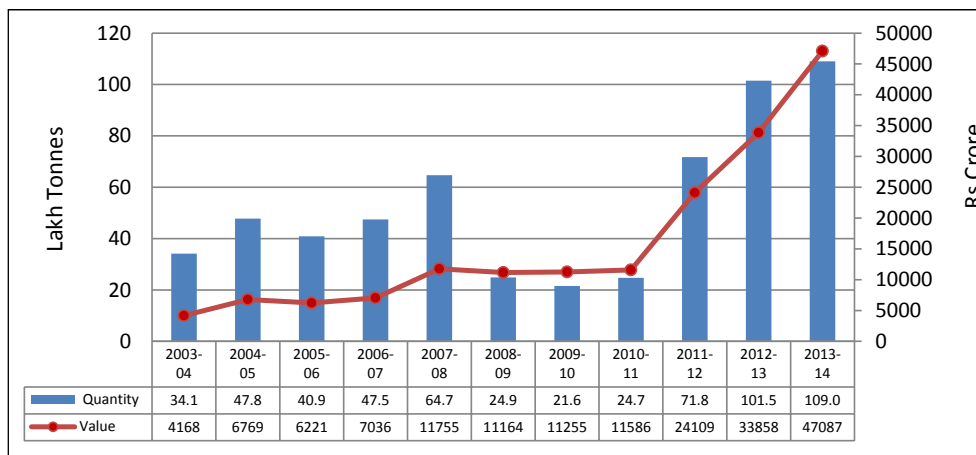
- 5.1 The share of India's agri-exports to the global agri-exports has increased from 1.1 percent in 2003 to 2.7 percent in 2013 while that of agri-imports to the global agri-imports has increased from 0.8 percent to 1.3 percent during the corresponding period. The share of the country's agri-exports in its total exports has increased from 12.2 percent in 2003-04 to 13.7 percent in 2013-14 whereas agri-imports as a percent of the total imports has decreased from 6.1 percent to only 3.9 percent during this period. India's major agri-exports are rice, marine products, meat & meat preparations, cotton and oil meals while major agri-imports are edible oils, wood & wood products, pulses and fruits & nuts. Edible oils as a group is the single largest item of India's agri-imports, constituting 54 percent whereas pulses accounted for 10 percent of agri-imports. Imports of these two commodities alone were valued at Rs.67121 crores in 2013-14.
- 5.2 The country is net agri-exporter, though it is net importer in the overall trade. The net agri-trade has increased from Rs.13757 crores in 2003-04 to Rs.155495 crores in 2013-14. India's agri-exports have increased from Rs.224866 crores in 2012-13 to Rs.260684 crores in 2013-14 (Chart-1.2), posting a growth rate of 15.9 percent whereas agri-imports have declined [(-) 3.9 percent] from Rs.109509 crores in 2012-13 to Rs.105189 crores in 2013-14, mainly due to subdued prices as well lesser quantity of edible oils imported.

Rice

- 5.3 As per USDA, global production of rice was 471.9 million tonnes during TE 2013-14, out of which about 9 percent was traded. China is the largest producer with a share of 30 percent followed by India (22 percent), Indonesia (8 percent), Bangladesh (7 percent) and Vietnam (6 percent). India, Thailand and Vietnam are the major exporters, accounting for about 62 percent of global exports. China, Nigeria, Iran, EU, Iraq and Philippines are the major importers, accounting for about 30 percent of global imports.

5.4 Exports of Indian rice have increased substantially since September, 2011 when exports of common rice were opened up. Rice has recorded considerable growth of 39 percent in 2013-14 and India has emerged as the world's top exporter of rice in 2012-13 and 2013-14 with exports of 102 lakh tonnes and 109 lakh tonnes, valued at Rs.33858 crores and Rs.47087 crores, respectively (Chart-5.1).

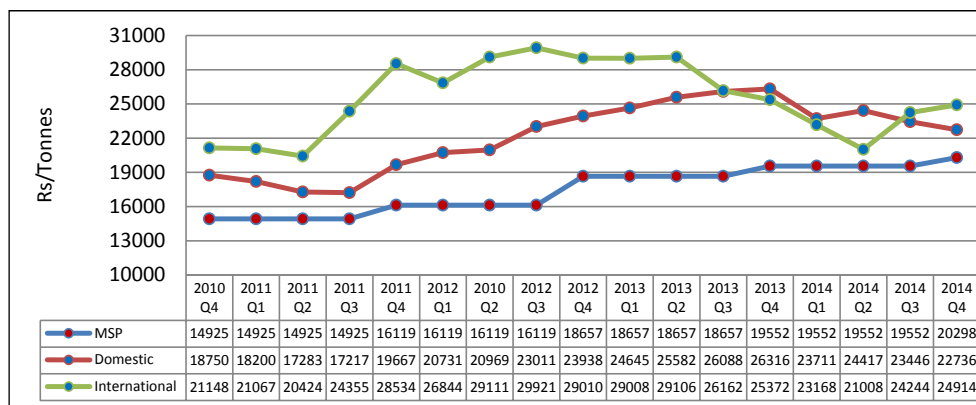
Chart-5.1: India's Exports of Rice, 2003-04 to 2013-14



Source: DGCIS, Kolkata

5.5 Chart-5.2 reveals that domestic wholesale prices of rice were generally lower than its international prices during 2010 to 2014, barring the last quarter of 2013 and the first two quarters of 2014. This indicates that Indian rice is export competitive. MSP of paddy converted into rice has been consistently lower than both domestic and international prices.

Chart-5.2: MSP, Domestic and International Prices of Rice, 2010 to 2014



Source: DES, Ministry of Agriculture, Govt. of India and AGMARKNET, New Delhi for domestic and World Bank for international prices

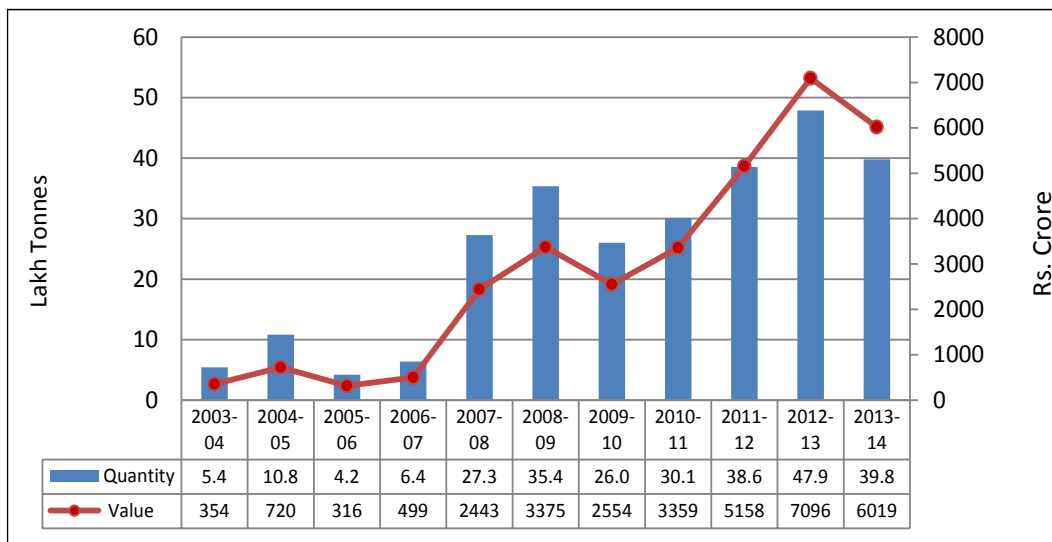
5.6 Exports of non-basmati rice from the country were banned on 15th October, 2007. However, the ban on exports of rice was replaced with MEP of US \$ 425 on 31st October, 2007 which has been revised from time to time. Exports of non-basmati rice were prohibited from Central Pool in March, 2008 and also from private account in April, 2008 in view of the tight position of rice in the domestic market. This ban continued till July, 2011 when exports of 10 lakh tonnes of non-basmati rice on private account were allowed with a MEP of US \$ 425. In September, 2011, exports of non-basmati rice were allowed under OGL by private parties out of privately held stocks and continues to be so since then. Import duty of 80 percent on husked (brown) rice and broken rice and 70 percent on milled and semi-milled rice were imposed in April, 2000. In view of tight position of rice in the domestic market, import of milled and semi-milled rice was allowed at zero duty from 01.03.2008 to 01.04.2009. With some intermittent relaxations, import duty on rice remains at 70 to 80 percent. Such a high import duty on water guzzling crop like rice is not desirable. When our country exports about 100 lakh tonnes of rice annually, it implies that over 38 billion cubic meter of virtual water is exported. Given that this water is extracted by mining groundwater, as is being done in much of the Punjab and Haryana belt (particularly in case of rice), where water table is receding by 33 cm each year, thereby shrinking its per-capita availability, high import duty of 70 to 80 percent is perverse and conveys wrong signals on use of water (and also power). If import duty on rice is rationalized to the level of 5 to 10 percent, it will also help diversification to much needed crops like oilseeds and pulses.

Maize

5.7 The global production of maize was 915.1 million tonnes during TE 2013-14, out of which about 12 percent was traded. USA is the largest producer with a share of 34 percent in the global production followed by China (22 percent), Brazil (9 percent) and EU (7 percent). USA is also the largest exporter with a share of 32 percent followed by Brazil (18 percent), Argentina (16 percent) and Ukraine (14 percent). Though India's share in the global production of maize was low at about 2 percent, it could export 48 lakh tonnes in 2012-13 and 40 lakh tonnes in 2013-14. Exports of maize have increased substantially since 2007-08 (Chart-5.3) which was possible

due to increase in productivity as a result of introduction of single cross hybrid (SCH) variety in 2005.

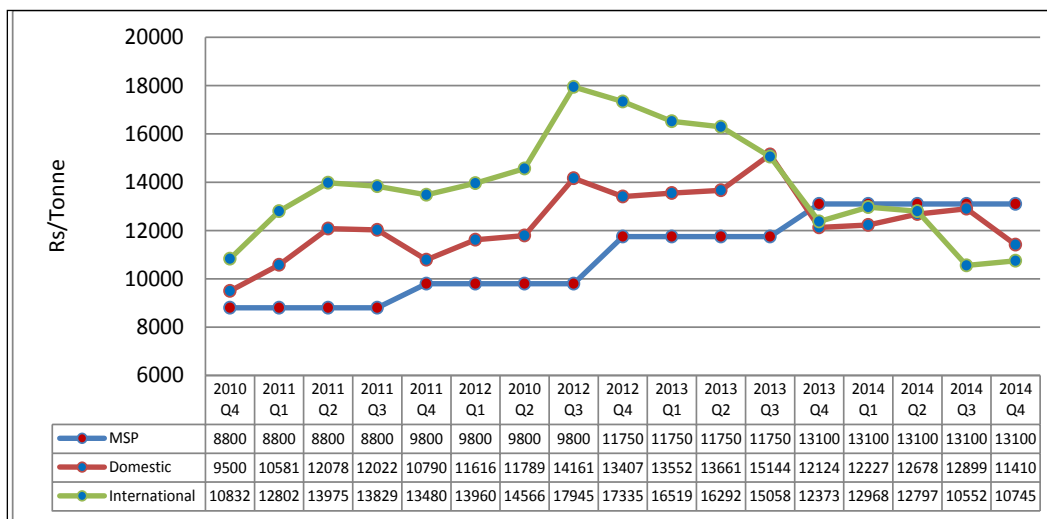
Chart-5.3: India's Exports of Maize, 2003-04 to 2013-14



Source: DGCIS, Kolkata

- 5.8 Domestic wholesale prices of maize have generally followed the trend of international prices during 2010 (Q4) to 2014. Currently, the MSP of maize is higher than domestic as well as international prices (Chart-5.4).

Chart-5.4: MSP, Domestic and International Prices of Maize, 2010 to 2014



Source: World Bank for International Prices & DES, Ministry of Agriculture, Govt. of India for Domestic Prices

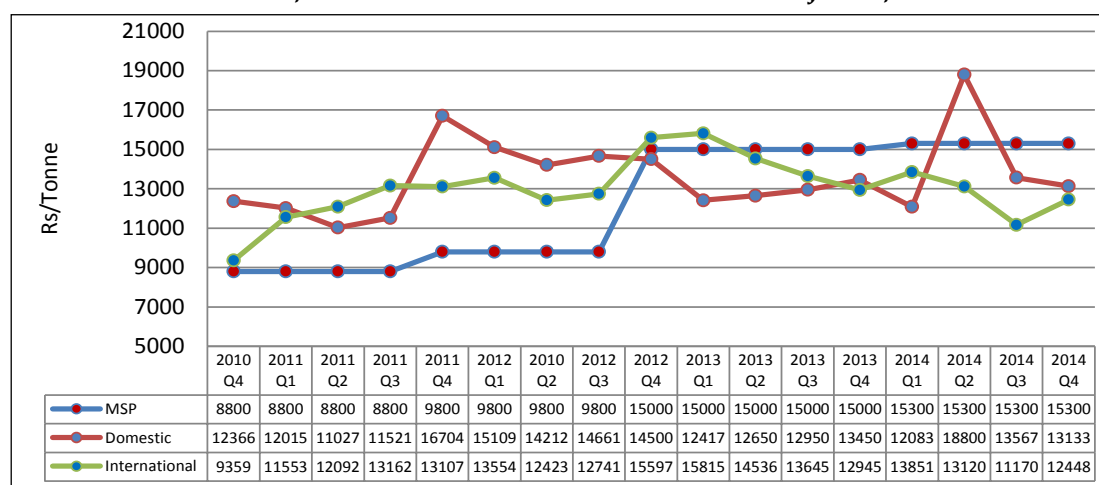
Note: Domestic Average wholesale prices of AP and Karnataka

- 5.9 Export of maize is free with effect from 16.10.2008. Under Tariff Rate Quota (TRQ) Scheme, introduced in June 2000, import of maize is allowed at zero duty from January, 2007 whereas import duty continues to be 50 percent outside the TRQ Scheme.

Jowar

- 5.10 The global production of jowar was 58.6 million tonnes during TE 2013-14, out of which about 12 percent was traded. USA is the largest producer with a share of 12 percent followed by Mexico (12 percent), Nigeria (11 percent) and India (9 percent). USA is also the largest exporter with a share of 46 percent followed by Argentina (30 percent) and Australia (15 percent). China is the largest importer with a share of 24 percent followed by Japan (21 percent) and Mexico (16 percent). As per DGCIS, India's exports of jowar have increased from a negligible quantity of 8 thousand tonnes in 2003-04 to 259 thousand tonnes in 2012-13 before declining to 98 thousand tonnes in 2013-14. Import duty of 50 percent on jowar was levied in April, 2000 which continues to be at the same level. Jowar is exported at zero duty without any quantitative ceiling.
- 5.11 The domestic wholesale prices of jowar have been generally higher than its international prices during 2010 (Q4) to 2014 (Chart-5.5). However, freight advantage compared to USA enables India to export small quantities to neighbouring countries like Pakistan, UAE, Yemen and Saudi Arabia. Currently, the MSP of jowar is higher than domestic as well as international prices.

Chart-5.5: MSP, Domestic and International Prices of Jowar, 2010 to 2014

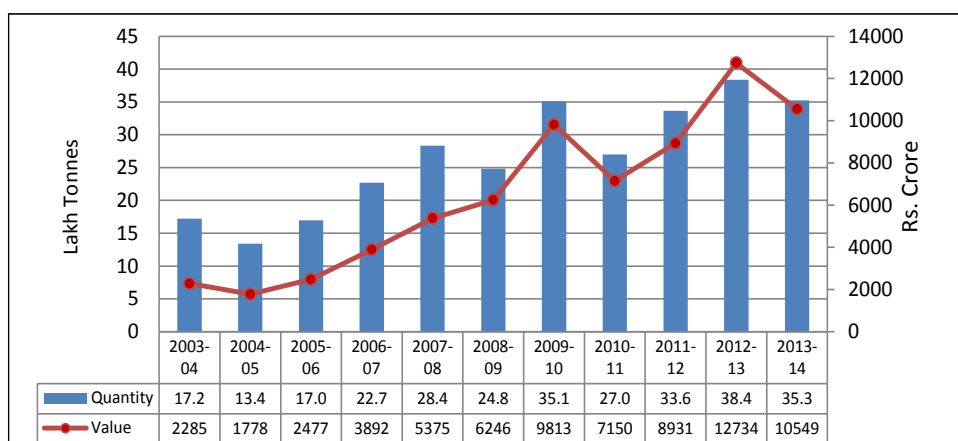


Source: World Bank for International Prices & DES, Ministry of Agriculture, Govt. of India for Domestic Prices

Pulses

- 5.12 India is not only the largest producer of pulses with a share of 25 percent in the global production but also the largest importer with a share of 29 percent in global imports and the largest consumer. As per FAO, the global production of total pulses was 716 lakh tonnes during TE 2013, out of which about 18 percent was traded. Other major producers of pulses are Myanmar (8 percent), Canada (7 percent), China (6 percent) and EU (5 percent). Canada is the largest exporter with a share of 32 percent followed by Australia (12 percent), USA (9 percent) and EU (8 percent). Our imports have increased from a low of 13 lakh tonnes in 2004-05 to 38 lakh tonnes in 2012-13 before ebbing to 35 lakh tonnes in 2013-14, mainly due to increase in its domestic production (Chart-5.6).

Chart-5.6: India's Imports of Pulses, 2003-04 to 2013-14

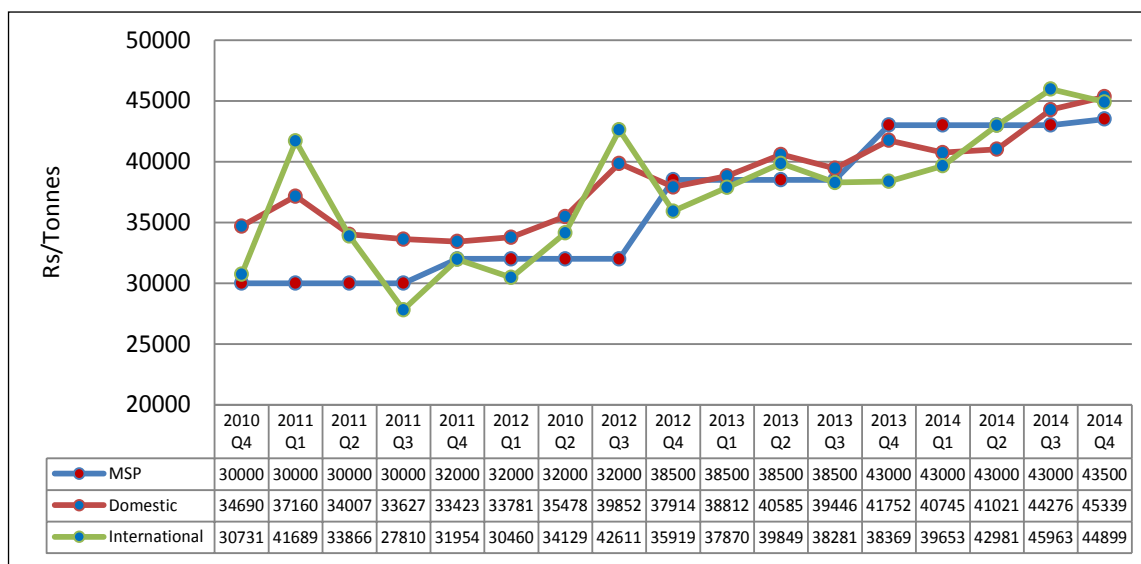


Source: DGCIS, Kolkata

- 5.13 Import duty on pulses was brought down from 10 percent to zero in June, 2006, which continues to be nil since then. Export of pulses was prohibited in June, 2006, initially for a period of six months which has been extended from time to time, the latest being in March, 2014. However, Kabuli Channa is exempted from this prohibition. Also, exports of organic pulses upto 10,000 tonnes per annum have been allowed since March, 2011, subject to certification by APEDA and such exports are allowed from Customs EDI Ports only.
- 5.14 Domestic wholesale prices of tur and urad have been generally higher than their respective international prices (Charts-5.7 to 5.8) whereas domestic wholesale prices of moong have been generally lower than international prices (Chart-5.9) during

2010 (Q4) to 2014. MSP of tur, urad and moong are currently lower than domestic and international prices.

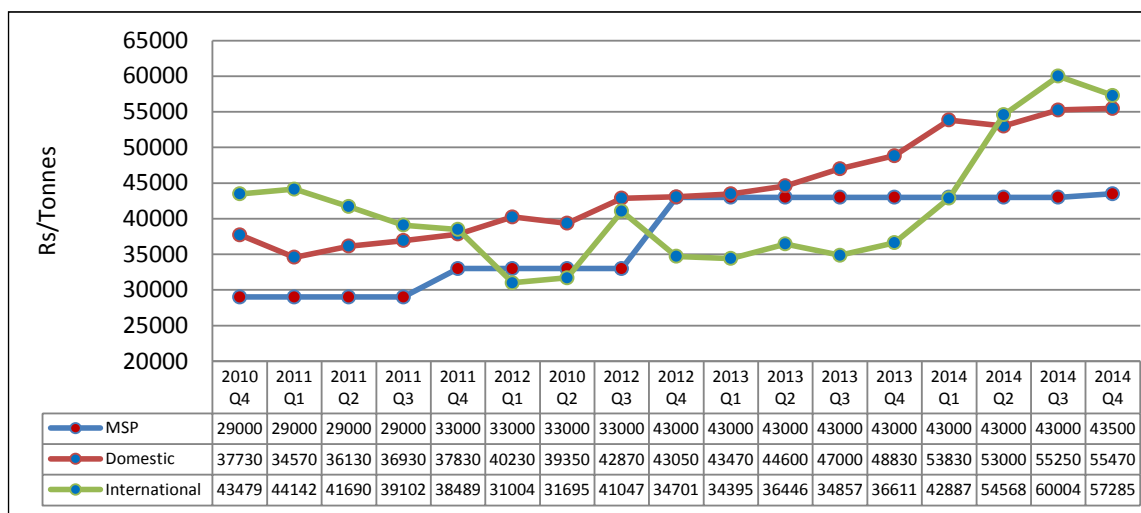
Chart-5.7: MSP, Domestic and International Prices of Tur, 2010 to 2014



Source: NAFED for International Prices & DES, Ministry of Agriculture, Govt. of India for Domestic Prices

Note: Average wholesale prices of AP, Bihar, Kar, Mah, TN, UP and WB

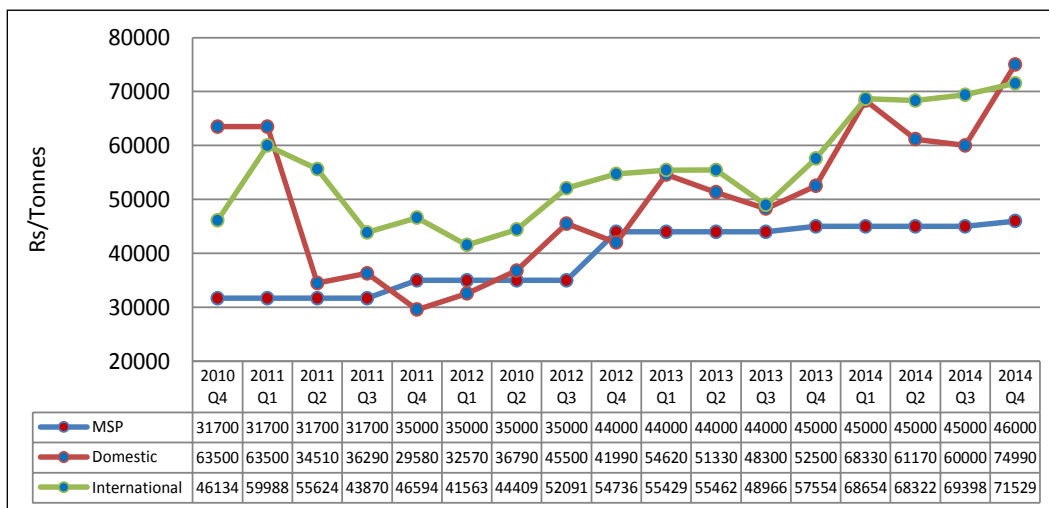
Chart-5.8: MSP, Domestic and International Prices of Urad, 2010 to 2014



Source: DES, Ministry of Agriculture, Govt. of India for Domestic Prices & NAFED for International Prices

Note: Average wholesale price of urad in UP

Chart-5.9: MSP, Domestic and International Prices of Moong, 2010 to 2014



Source: DES, Ministry of Agriculture, Govt. of India for Domestic Prices & NAFED for International Prices

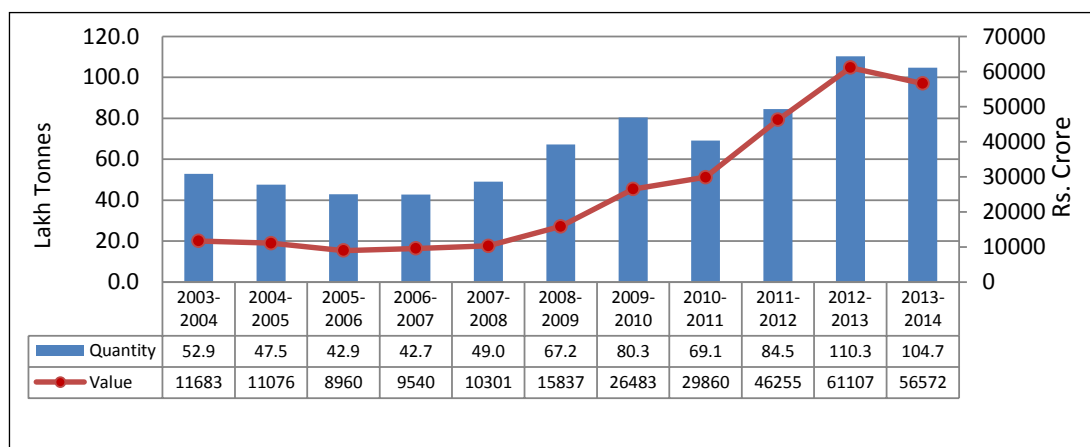
Note: Average wholesale price of moong in Rajasthan

Oilseeds/Edible oils

- 5.15 As per USDA, the global production of major oilseeds was 475.8 million tonnes during TE 2013-14, out of which about 25 percent was traded. USA is the largest producer with a share of 20 percent followed by Brazil (17 percent), China (12 percent), Argentina (11 percent) and India (8 percent). Brazil and USA export more than two-thirds of the global exports, with a share of 35 percent and 33 percent respectively. Other major exporters are Canada (10 percent) and Argentina (7 percent). China is the single largest importer with a share of 57 percent followed by EU (14 percent), Japan (5 percent) and Mexico (4 percent). India exports small quantities with a share of about 1 percent of world exports.
- 5.16 The global production of vegetable oils was 162.4 million tonnes during TE 2013-14, out of which about 41 percent was traded. Indonesia is the largest producer with a share of 20 percent followed by China (14 percent), Malaysia (13 percent) and EU (10 percent). Indonesia and Malaysia account for more than three-fifth of total global exports with a share of 33 percent and 29 percent respectively during TE 2013-14. India is the largest importer with a share of 17 percent followed by China (15 percent), EU (15 percent) and USA (6 percent).
- 5.17 As per DGCIS, India's imports of edible oils have increased from 52.9 lakh tonnes,

valued at Rs.11683 crore, in 2003-04 to 110.0 lakh tonnes, valued at Rs.61107 crore, in 2012-13 before ebbing to 104.7 lakh tonnes, valued at Rs.56572 crore in 2013-14. This decline is due to increase in domestic production as well as decline in international prices of most of the edible oils from June – July, 2013 onwards (Chart-5.10).

Chart-5.10: India's Imports of Edible Oils, 2003-04 to 2013-14



Source: DGCIS, Kolkata

- 5.18 India is the largest exporter of groundnut in the world and also exports small quantities of soyabean and sunflower seeds. Exports of oilseeds are free while its imports are under OGL with an import duty of 30 percent since January, 2003. Edible oils were under negative list of imports till April, 1994 when import of palmolein was placed under OGL subject to 65 percent import duty. Subsequently, imports of other edible oils were also placed under OGL and import duty was high up to 80 percent on crude and 92.2 percent on refined oils during early 2000s but was reduced to zero percent on crude and 7.5 percent on refined edible oils in April, 2008. Import duty on crude edible oil was increased to 2.5 percent in January, 2013 which has been further increased to 7.5 percent in December, 2014. Import duty on refined edible oil was also increased to 10 percent in January, 2014 which has been further increased to 15 percent in December, 2014.
- 5.19 Exports of edible oils were initially prohibited for a period of one year in March, 2008 which was extended from time to time. However, there are certain exemptions, namely (a) castor oil, (b) coconut oil from all Electronic Data Interchange (EDI) Ports and through all Land Custom Stations (LCS), (c) Deemed export of edible oils (as input raw materials) from Domestic Tariff Area (DTA) to 100 percent Export Oriented Units (EOUs) for production of non-edible goods to be exported, (d)

Edible oils from DTA to Special Economic Zones (SEZs) to be consumed by SEZ units for manufacture of processed food products, subject to applicable value addition norms, (e) edible oils produced out of minor forest produce, and (f) 10,000 tonnes of organic edible oils per annum. In addition, export of edible oils in branded consumer packs of up to 5 kg is permitted with a MEP of US \$ 900 per MT. India's trade policy for major Kharif crops is summarized in Table-5.1.

Table-5.1: India's Trade Policy–Kharif Crops

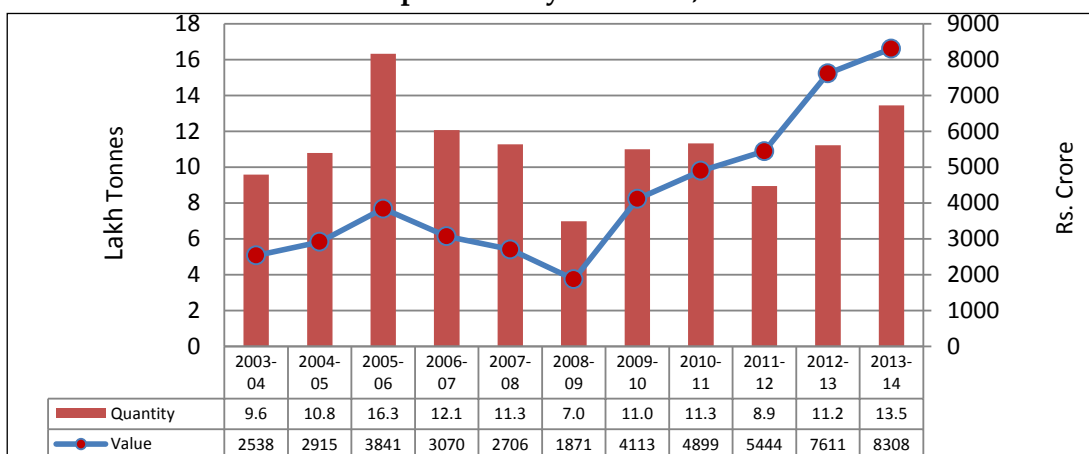
S. No.	Crop/Commodity	Trade Policy				
		Import Policy			Export Policy	
		OGL/ Import ban	Import duty (%)	Bound Duty (%)	OGL/Export ban	Export duty (%)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
A-Cereals						
1	Rice	OGL	(Rice in husk, Husked brown rice ; Broken rice) – 80 (Semi-milled or Wholly milled rice) - 70	80 70	OGL	Zero
2	Maize	OGL	50	70	OGL	Zero
3	Jowar	OGL	80	80	OGL	Zero
B- Pulses						
4	Tur	OGL	Zero	100	Export ban (except (i) Kabuli chana (ii)10000 tonnes per annum of organic pulses and Lentils)	
5	Urad	OGL	Zero	100		
6	Moong	OGL	Zero	100		
C-Oilseeds/Edible oils						
7	Soyabeans	OGL	30	100	OGL	Zero
8	Groundnut	OGL	30	100	OGL	Zero
9	Sunflower seed	OGL	30	100	OGL	Zero
10	Soyabean oil (crude)	OGL	7.5	45	Export ban*	
11	Groundnut oil (crude)	OGL	7.5	300	Export ban*	
12	Sunflower oil (crude)	OGL	7.5	300	Export ban*	
13	Soyabean oil (refined)	OGL	15.0	45	Export ban*	
14	Groundnut oil (refined)	OGL	15.0	300	Export ban*	
15	Sunflower oil (refined)	OGL	15.0	300	Export ban*	
16	Soyabean meal	OGL	Zero	100	OGL	Zero
D-Commercial Crops						
17	Cotton	OGL	Zero	100	OGL	Zero

* Export of edible oils in branded consumer packs up to 5 kg is permitted with MEP of US\$ 900 per MT.

Soyabean/Soyabean Oil/Soyabean Meal

- 5.20 The world production of soyabean was 264.4 million tonnes during TE 2013-14, out of which about 38 percent was traded. USA is the largest producer with a share of 33 percent followed by Brazil (30 percent) and Argentina (18 percent). These three countries contribute four-fifth of the total world production of soyabean. Brazil is the largest exporter with a share of 41 percent followed by USA (39 percent). China is the single largest importer with a share of 63 percent followed by EU (13 percent). The world production of soyabean oil was 43.4 million tonnes during TE 2013-14, out of which about 20 percent was traded. China is the largest producer with a share of 27 percent followed by USA (21 percent), Brazil (16 percent) and Argentina (15 percent). Argentina is the largest exporter with a share of 45 percent followed by Brazil (17 percent), EU (9 percent) and USA (9 percent). Despite being the largest producer, China is the largest importer of soyabean oil with a share of 17 percent followed by India (16 percent) during TE 2013-14.
- 5.21 World production of soyabean meal was 183.2 million tonnes during TE 2013-14, out of which about 32 percent was traded. China is the largest producer with a share of 28 percent followed by USA (20 percent), Brazil (15 percent) and Argentina (15 percent). India's share in world production of soyabean meal is 4 percent during TE 2013-14. Argentina is the largest exporter with a share of 42 percent followed by Brazil (24 percent), USA (17 percent) and India (7 percent). EU is the largest importer with a share of 33 percent followed by Indonesia (6 percent), Vietnam (5 percent) and Thailand (5 percent).
- 5.22 India exports small quantities of soyabean. However, the country imports soyabean oil to meet domestic demand. Imports of soyabean oil increased from 9.6 lakh tonnes in 2003-04 to 13.5 lakh tonnes in 2013-14, albeit with fluctuations (Chart-5.11).

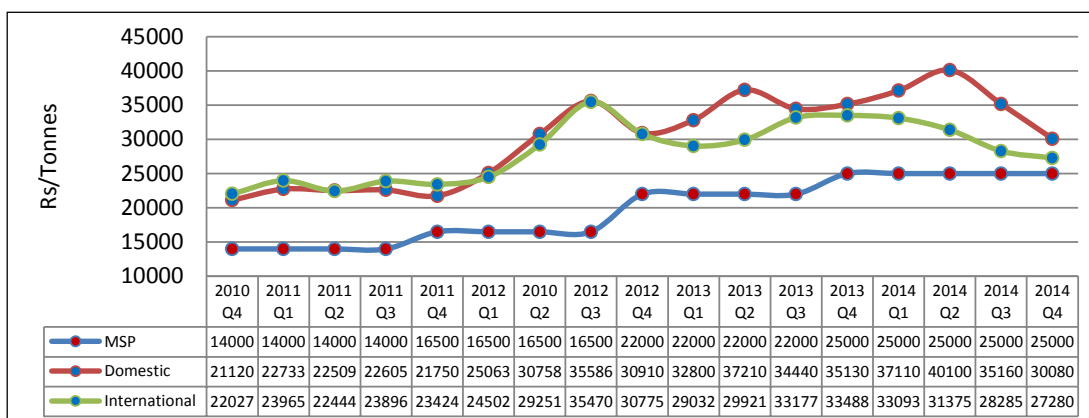
Chart-5.11: India's Imports of Soyabean Oil, 2003-04 to 2013-14



Source: DGCIS, Kolkata

- 5.23 Domestic wholesale prices of soyabean have been generally higher than international prices from 2010(Q4) to 2014 whereas MSP has been lower than domestic wholesale prices as well as international prices during 2010(Q4) to 2014 (Chart-5.12). Likewise, domestic prices of soyabean oil have also been higher than international prices during this period (Chart-5.13).

Chart-5.12: MSP, Domestic and International Prices of Soyabean, 2010 to 2014



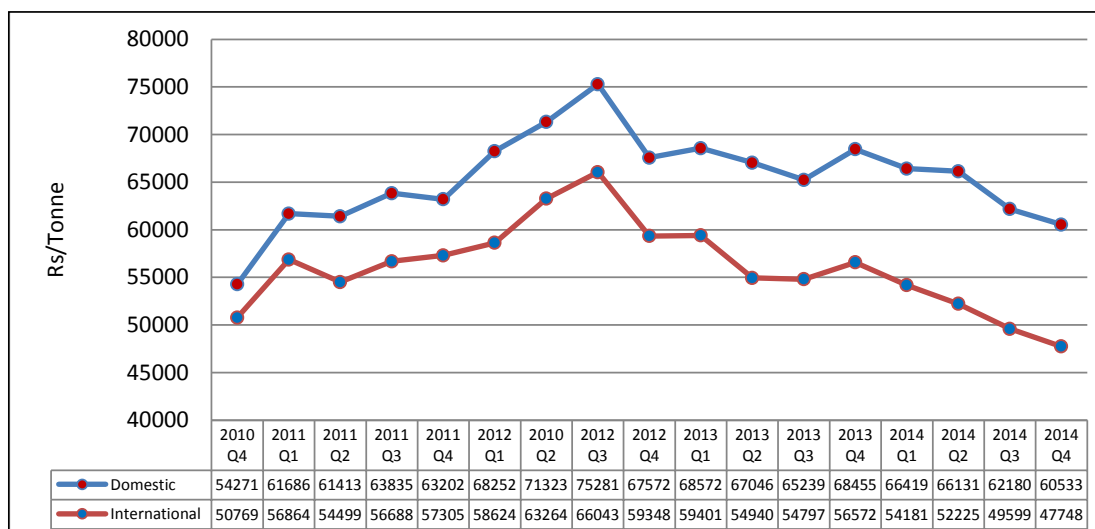
Source: i. USDA for International Prices

ii. DES, Ministry of Agriculture, Govt. of India for domestic price.

Note: i. Soyabean, Argentina FOB

ii. Domestic Average wholesale price of Soyabean in Madhya Pradesh.

Chart-5.13: Domestic and International Prices of Soyabean Oil, 2010 to 2014



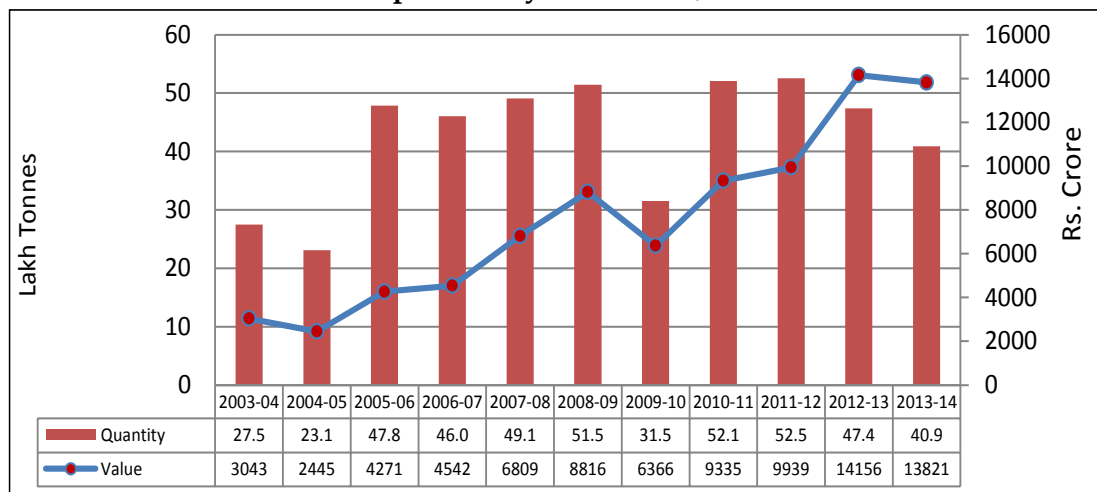
Source: i. USDA for International Price

ii. The Solvent Extractors Association of India for domestic price.

Note: Soyabean oil, Argentina FOB

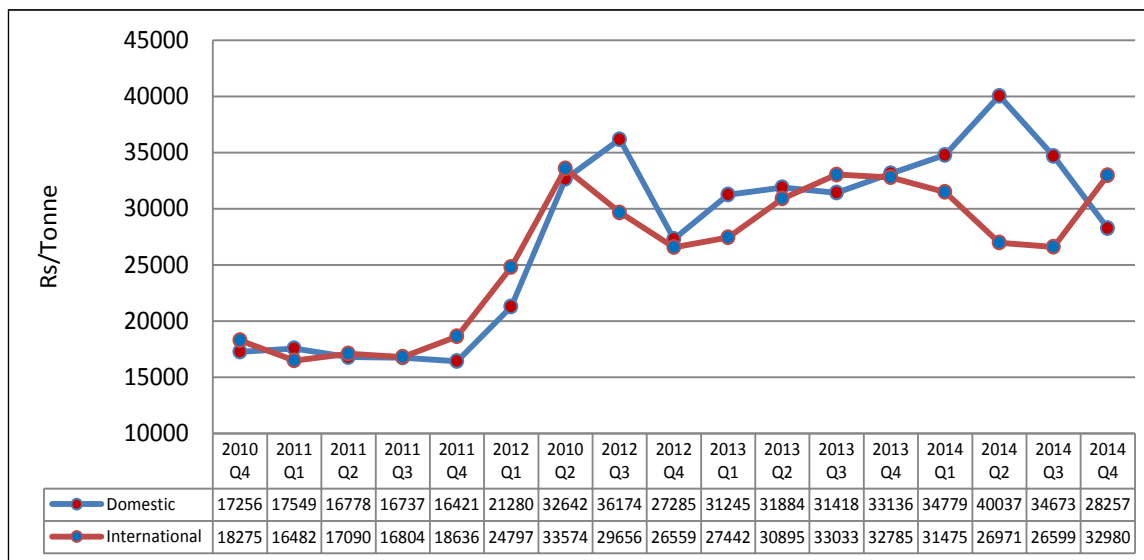
- 5.24 India's exports of soyabean meal have increased from 27.5 lakh tonnes in 2003-04 to 40.9 lakh tonnes in 2013-14, albeit with fluctuations (Chart-5.14). Domestic prices of soyabean meal have been generally higher than international prices during 2010(Q4) to 2014 (Chart-5.15).

Chart-5.14: India's Export of Soyabean Meal, 2003-04 to 2013-14



Source: DGCIS, Kolkata

Chart-5.15: Domestic and International Prices of Soyabean Meal, 2010 to 2014

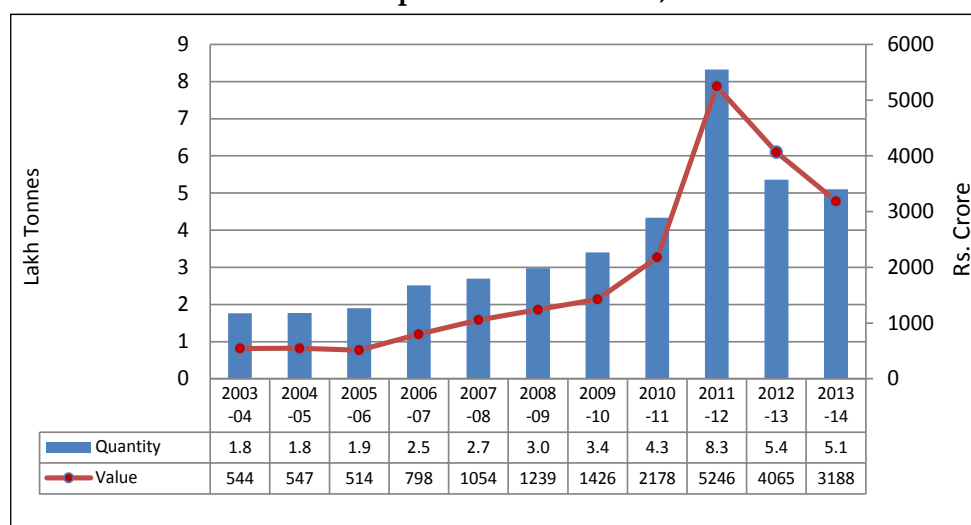


Source: i. The Solvent Extractors Association of India for domestic prices
ii. USDA for International Prices

Groundnut/Groundnut Oil

5.25 World production of groundnut was 39.4 million tonnes during TE 2013-14, out of which only about 7 percent was traded. China is the largest producer with a share of 42 percent followed by India (13 percent), Nigeria (8 percent) and USA (6 percent). India is the largest exporter with a share of 28 percent followed by China (20 percent), Argentina (20 percent) and USA (16 percent). EU was the largest importer with a share of 35 percent followed by Indonesia (14 percent), Vietnam (8 percent) and Mexico (7 percent). World production of groundnut oil was 5.4 million tonnes during TE 2013-14, out of which only about 3 percent was traded. China is the largest producer with a share of 49 percent followed by India (22 percent). EU, China and USA are the main importers of groundnut oil whereas India along with these three countries exports it in small quantities. The year-wise details of exports of the commodity are exhibited in Chart-5.16.

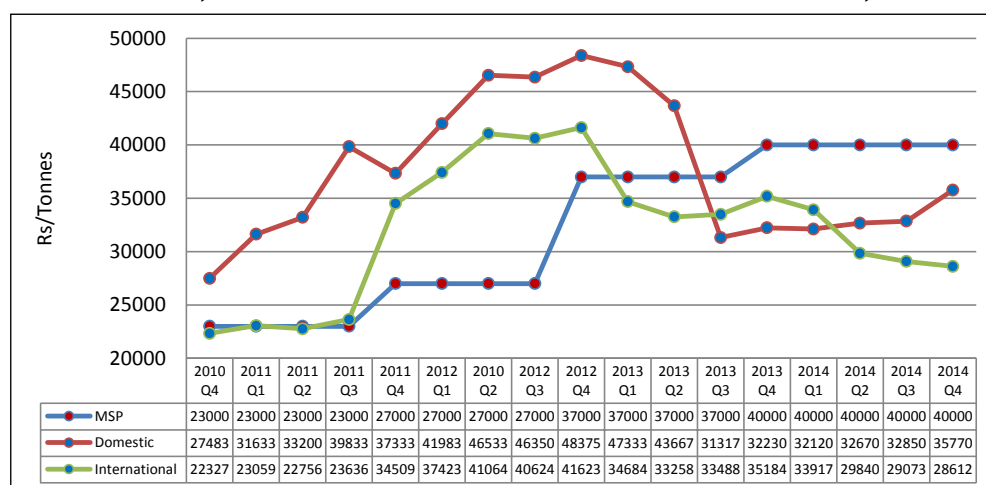
Chart-5.16: India's Exports of Groundnut, 2003-04 to 2013-14



Source: DGCIS, Kolkata

- 5.26 Domestic prices of groundnuts have been generally higher than international prices (Chart-5.17). However, India's exports of groundnut are mainly to neighbouring countries where it gets freight advantage in comparison to competitors like Argentina and USA. Currently, the MSP of groundnut is higher than domestic as well as international prices. Domestic prices of groundnut oil have been generally lower than international prices (Chart-5.18).

Chart-5.17: MSP, Domestic and International Prices of Groundnut, 2010 to 2014

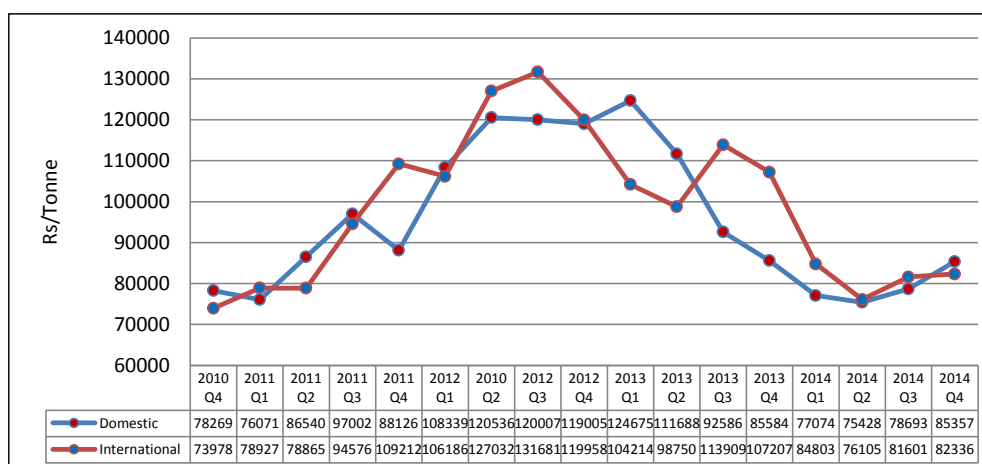


Source: i. USDA for international Prices

ii. DES, Ministry of Agriculture, Govt. of India for domestic price.

Note: Domestic Average wholesale price of groundnut in Gujarat.

Chart-5.18: Domestic and International Prices of Groundnut Oil, 2010 to 2014



Source: i. USDA for International Prices.

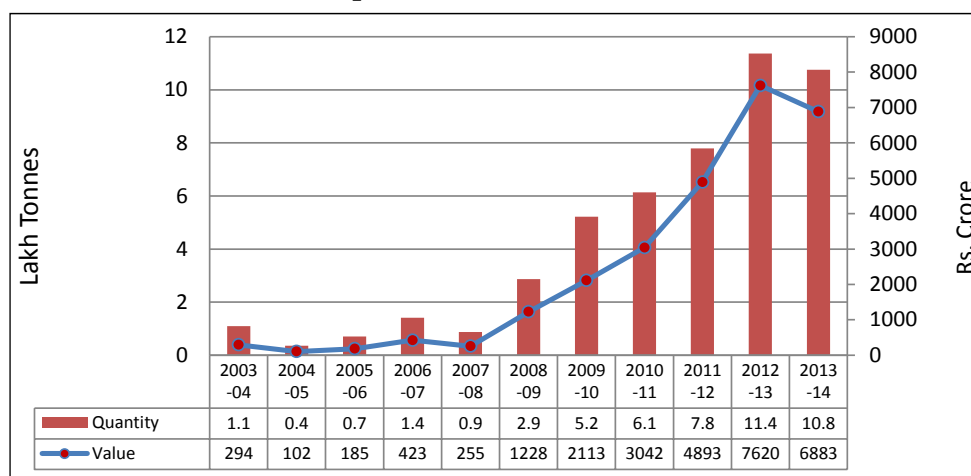
ii. The Solvent Extractors Association of India for domestic prices.

Sunflower Seed/Sunflower Oil

5.27 World production of sunflower seed was 39.8 million tonnes during TE 2013-14, out of which only 4 percent was traded. Ukraine is the largest producer with a share of 26 percent closely followed by Russia (24 percent), EU (20 percent) and Argentina (7 percent). EU is the largest exporter with a share of 33 percent followed by Russia (9 percent) and Ukraine (9 percent). Turkey is the largest importer with a share of 45 percent followed by EU (18 percent). World production of sunflower oil was 14.8 million tonnes during TE 2013-14, out of which about 43 percent was traded. Ukraine is the largest producer with a share of 28 percent followed by Russia (24 percent), EU (20 percent) and Argentina (8 percent). Ukraine is the largest exporter with a share of 54 percent followed by Russia (21 percent) and Argentina (8 percent). EU and Turkey are the main importers.

5.28 India exports small quantities of sunflower seed whereas its imports are negligible. The country's imports of sunflower oil have increased from 1.1 lakh tonnes in 2003-04 to 10.8 lakh tonnes in 2013-14, albeit with fluctuations (Chart-5.19).

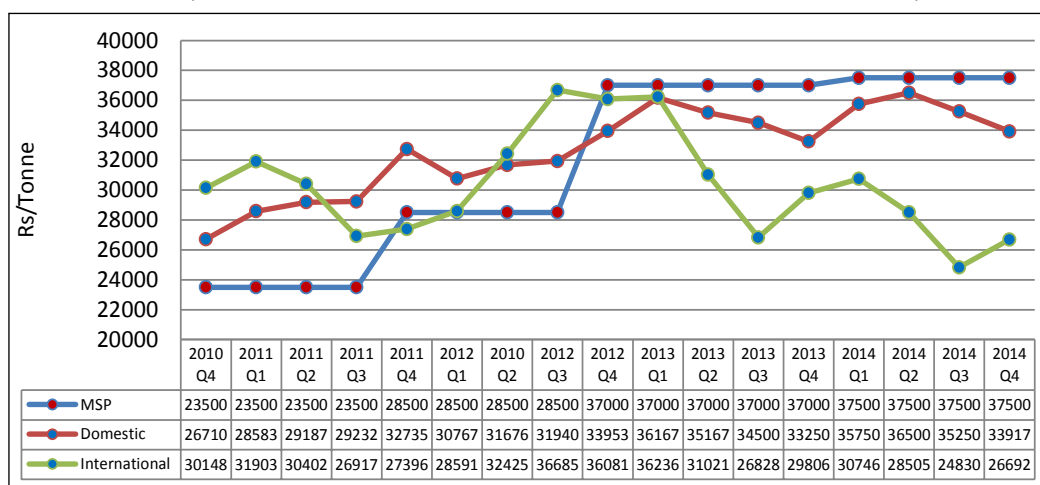
Chart-5.19: India's Imports of Sunflower Oil, 2003-04 to 2013-14



Source: DGCIS, Kolkata

5.29 Domestic prices of sunflower seed have generally been higher than international prices during 2010 (Q4) to 2014 (Chart-5.20). Currently, the MSP of sunflower seed is higher than domestic as well as international prices. Domestic prices of sunflower oil have been generally higher than international prices (Chart-5.21).

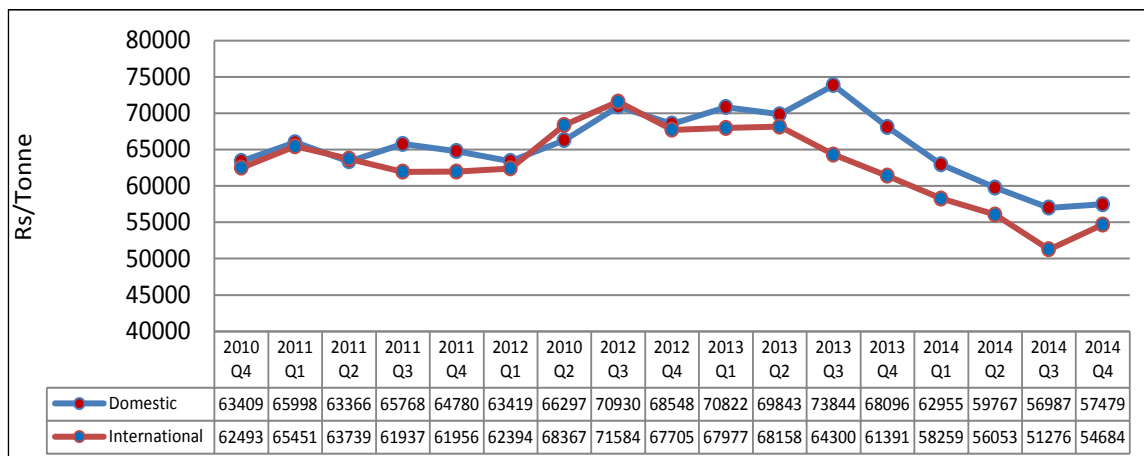
Chart-5.20: MSP, Domestic and International Prices of Sunflower Seed, 2010 to 2014



Source: i. USDA for International Prices.

ii. NAFED, New Delhi and Agmarknet for domestic price (Average prices of Maharashtra).

Chart-5.21: Domestic and International Prices of Sunflower Oil, 2010 to 2014



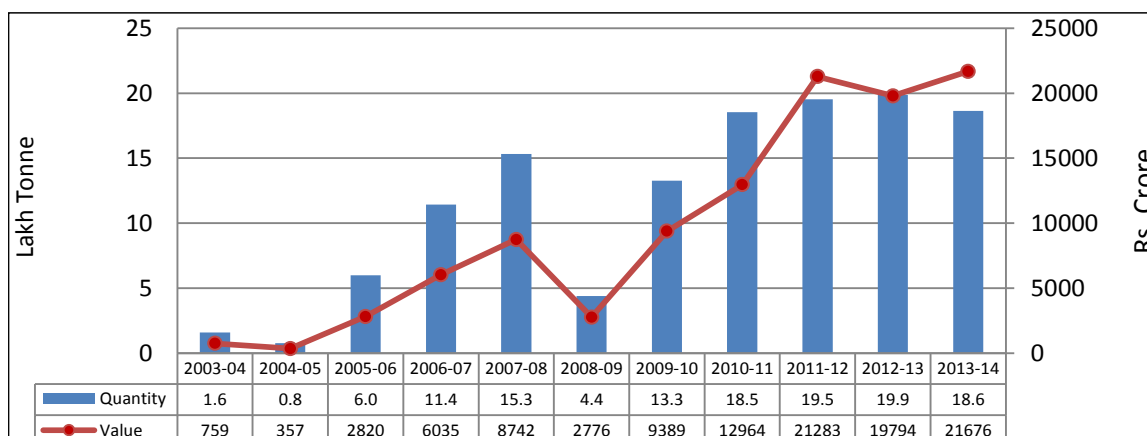
Source: i. USDA for International Prices.

ii. The Solvent Extractors Association of India for domestic prices

Cotton

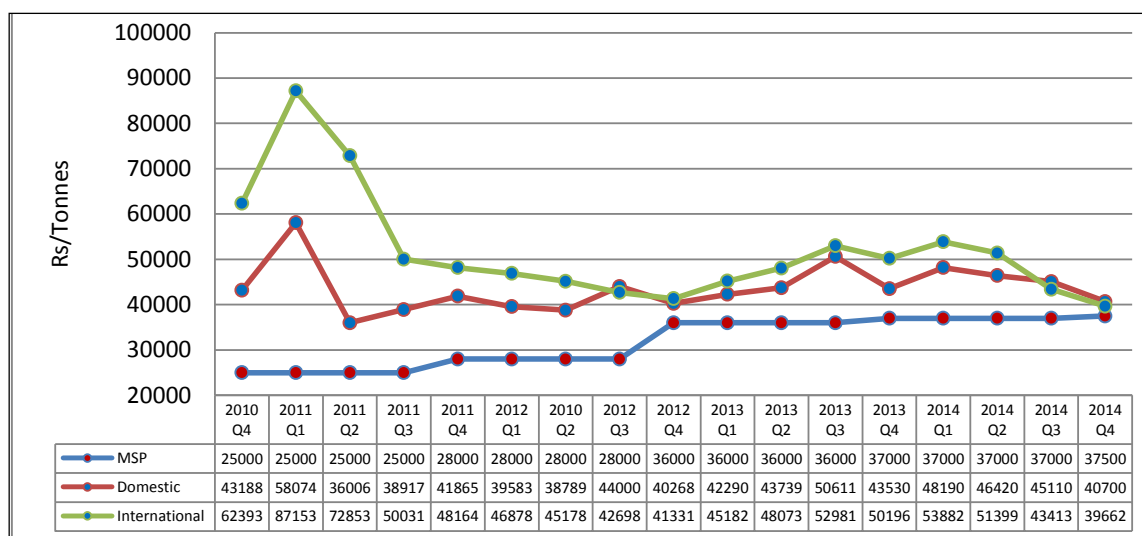
- 5.30 World production of cotton was 26.9 million tonnes during TE 2013-14, out of which about 36 percent was traded. China is the largest producer with a share of 27 percent followed by India (24 percent), USA (12 percent), Pakistan (8 percent) and Brazil (6 percent). USA is the largest exporter with a share of 26 percent followed by India (21 percent), Australia (12 percent) and Brazil (8 percent). China is the single largest importer with a share of 45 percent. Other major importers are Bangladesh (9 percent), Turkey (8 percent), Indonesia (7 percent) and Vietnam (5 percent).
- 5.31 India's exports of cotton have increased from 1.6 lakh tonnes in 2003-04 to 19.9 lakh tonnes in 2012-13 before declining to 18.6 lakh tonnes in 2013-14 (Chart-5.22). The decline was mainly due to subdued demand from China which is a major export destination for Indian cotton. It may be seen from Chart-5.23 that domestic wholesale prices of cotton (raw) have been generally lower than its international prices during 2010 (Q4) to 2014(Q2). MSP has been lower than both domestic and international prices.

Chart-5.22: India's Export of Cotton, 2003-04 to 2013-14



Source: DGCIS, Kolkata

Chart-5.23: MSP, Domestic and International Prices of Cotton (Raw), 2010 to 2014



Source: World Bank for international prices and DES, Ministry of Agriculture, Govt. of India for Domestic Prices.

Note: Domestic Average wholesale price of cotton in AP and Gujarat.

- 5.32 QRs on export of cotton were removed by the Government in July, 2001 and its export were placed under OGL. To curb the rising price trend in the domestic market, the Government imposed export duty of Rs.2500 per tonne on raw cotton in April, 2010 to avoid disruption in supply chain of cotton in the country till the end of cotton season 2009-10. Cotton exports were placed in restricted category in May, 2010. However, its exports were allowed at zero export duty in August, 2010 with the restriction that the contracts for export be registered with the DGFT prior to

shipment. Exports of cotton are currently free and the registration requirement for export of cotton has been dispensed with vide notification dated 08.12.2014. Import of cotton was placed under OGL in April, 1994. Import duty of 5 percent was levied on import of cotton in March, 1999 which was increased to 10 percent in January, 2002 in order to avoid imports of cheaper cotton. However, the import duty was reduced to zero in July, 2008 which continues to be at the same level.

Recapitulation

- 5.33 Rice is a water guzzling crop. When our country exports about 100 lakh tonnes of rice annually, it implies that over 38 billion cubic meter of virtual water is exported. Given that this water is extracted by mining groundwater, as is being done in much of the Punjab and Haryana belt (particularly in case of rice), where water table is receding by 33 cm each year, thereby shrinking its per-capita availability, high import duty of 70 to 80 percent is perverse and conveys wrong signals on use of water (and also power). In any case, tariff should be employed as a regulatory instrument in a manner that is stable and neutral, both for consumers and producers. If import duty on rice is rationalized to the level of 5 to 10 percent, it will also help diversification to much needed crops like oilseeds and pulses.
- 5.34 Based on sound economic principle, import duty ought to escalate from raw material to finished product i.e. raw material should attract low duty which should increase for intermediate goods and be further increased for finished product. In so far as oilseeds/edible oils are concerned, it attracts a sort of inverted duty structure which impacts domestic industry adversely. It is high at 30 percent for raw material i.e. oilseeds and low at 7.5 percent for crude oil and in between at 15 percent for finished product i.e. refined oil. The Commission recommends that import duty for oilseeds be fixed at 5 percent instead of 30 percent currently, whereas it be raised to 10 percent and 17.5 percent in cases of crude and refined oil respectively. It will address, to some extent, the issue of blending of relatively less expensive imported oil (palm oil) with domestically produced oils viz. soyabean, groundnut and sunflower. This would promote resource use efficiency, generate surpluses and augment agriculture growth. It is imperative to continuously monitor domestic and international price trends and identify the trigger points to tweak tariff rates so that these remain relevant and rational in changing global scenario.



CHAPTER-6

Recommendations for Price Policy

6.1 As per the mandate of the Commission, the cost of production, overall demand-supply, domestic and international prices, inter-crop parity in returns, terms of trade between agricultural and non-agricultural sectors, likely impact of MSPs on consumers, besides ensuring rational utilization of natural resources like land and water have been taken into consideration while recommending price policy for ensuing kharif marketing season. Thus, pricing policy is rooted not in 'cost plus' approach, though cost is an important determinant of the level of MSPs.

Procurement

Chapter-6

6.2 Situation Assessment Survey (70th Round of NSS) reveals that only 6 million households were aware of MSP of paddy and only 4.67 million households were aware of any procurement agency. The households that benefitted directly from procurement of paddy were just 2.52 million during 2012. It is, therefore, imperative that wide publicity about MSP and procurement agencies on radios, television and vernacular languages in popular local dailies be given before the start of procurement operations so as to reach out to farmers far and wide.

6.3 Eastern belt of the country gets neglected in so far as procurement is concerned. For instance, there was almost negligible procurement of rice in Assam during TE 2013-14, even though it contributed 4.6 percent in the total rice production. The situation in other eastern states such as Bihar, West Bengal is somewhat better than that of Assam but not good enough when these states are compared with Punjab. Low procurement and weak marketing infrastructure has affected the market prices in these states which have been lower than MSPs. The perpetual neglect of eastern belt in procurement needs to be corrected on priority. The Commission, therefore, recommends strengthening of market infrastructure and procurement system in the eastern belt to the level prevailing in the states of Haryana and Punjab.

- 6.4 Burgeoning stocks of rice and wheat with FCI lead to increase in economic costs of procurement and thus escalates food subsidy bill. Excess stocks 'locked-in' with FCI reduce per capita availability of grains and consequently push the prices due to avoidable supply constraint. To address this problem, FCI ought to devise a conscious policy on liquidation of stocks as and when they exceed buffer norms, either in global market or domestic market (OMSS).

Restructuring of NAFED

- 6.5 Large surplus of cereals in contrast to huge deficit of pulses and oilseeds (edible oils) presents a sort of paradox which can be mitigated by putting in place a credible procurement machinery for pulses and oilseeds. Based on CACP's interaction with wide spectrum of farmers and also based on field visits, it emerged that farmers need a backup plan in the form of reasonably strong procurement machinery to be put in place to fall back upon when the prices fall below MSP. The fact that a large number of farmers in Gujarat sold groundnut in 2014, at least 10 percent lower than the MSP coupled with the fact that procurement of kharif oilseeds constituted a mere 3.21 percent of the production, bear a testimony to sub-optimal procurement machinery. These shake the confidence of farmers in price support mechanism for crops other than paddy / wheat (at least in northern states) and explains in great measure their disinclination to diversify from paddy/wheat to oilseeds and pulses, the crops in which the country is deficient. In view of this, there is an urgent need to radically restructure NAFED to enable it to accomplish its main objective function of procurement of pulses and oilseeds. This will induce farmers to diversify to pulses and oilseeds and will also help reducing import-dependence.

Right to Sell at MSP

- 6.6 Two most important procurement agencies of the Government of India namely FCI and NAFED were set up with the main objectives of procuring notified commodities at MSP, if and when the market prices go below MSP. These agencies have been in the existence for over 50 years and 30 years respectively. Yet, the benefits of MSP bypass a large sections of farmers, rendering the pricing policy and procurement operations ineffective. As per Situation Assessment Survey (NSS 70th Round), only 2.57 million households were benefitted directly from procurement of paddy during 2012. The procurement of oilseeds and pulses is far worse. This calls for giving wide publicity about MSP and procurement agencies on radios, television and vernacular languages

in popular local dailies, at least 15 days before the start of procurement operations so as to reach farmers far and wide. Furthermore, to instill confidence among farmers for procurement of their produce, a legislation conferring on farmers the right to sell their produce to the Government agencies at MSP be brought out.

EC Act

- 6.7 The government amended ECA, 1955 and reintroduced the provision of quantitative restrictions on the stock limits. Stock limits constrain alternative markets to function to the advantage of the farmers. This essentially implies that farmers forgo potential opportunity of direct sale of their produce. For instance, corporates even under PPP cannot buy freely from the farmers. Therefore, such stock limits should be done away with which will help getting the market right.

Fertilizer Subsidy

- 6.8 “Urea nahi milene par kissan bhadke” (Farmers agitated on non-availability of Urea), reported ‘Patrika’, published from Jabalpur (M.P), on 20.01.2015. According to this, farmers were distressed due to non-supply of urea as per their requirement at the price of Rs. 5360/- per tonne fixed by GOI. It was alleged that urea was being sold at prices higher than the price fixed by the GOI. The going rate of urea in Jabalpur was said to be Rs.450/ per bag of 50 kilograms i.e. Rs. 9000/- per tonne at that time. The point to be pondered is: do farmers benefit from this kind of subsidy regime? If not, why not to redesign the policy on fertilizer subsidy?
- 6.9 It may be mentioned that Urea, the only controlled fertilizer, is sold at statutory notified uniform sale price (currently at a low of Rs.5360 tonnes) and decontrolled Phosphatic and Potassic fertilizers are sold at indicative maximum retail prices (MRPs). As the price of urea has remained fixed while those of P & K have increased faster, the differential between the prices of urea and P & K fertilizers has widened leading to excess use of N at the cost of P&K fertilizers. For instance, the price of urea at Rs.5360/tonne (due to subsidy) is low in relation to about Rs.24,000 per tonne of DAP and Rs.16,700 per tonne of MoP. As against recommended doses of N:P:K in the ratio of 4:2:1, the actual consumption is 62:19:1 in some states like Punjab. This has led to imbalanced use of soil nutrients which adversely affects productivity levels. Besides, inappropriate policy design of fertilizer pricing has also led to rising dependence on imports of fertilizers.

- 6.10 Fertilizer subsidy has increased by around six times in the last 14 years from Rs 12,695 crore in 2001-02 to over Rs 73000 crore in 2014-15, registering an average growth at 20 percent per annum. Fertilizer subsidy has been increasing, primarily due to rising consumption and sharp increase in prices of finished fertilizers. Lack of rational pricing of urea has widened the gap between the normative delivered cost of fertilizers at the farm gate level and the actual prices paid by the farmer, leading to bloated fertilizer subsidies.
- 6.11 To address the issue of non-availability of urea at administered prices to the targeted farmers and also to correct skewed consumption of urea in relation to other two nutrients, a more efficient method is to provide direct cash subsidy to the farmers on per hectare basis. Given the gross cropped area (GCA) of 195.1 million hectares and even if Rs. 73,000 crores of fertilizers subsidy is given during 2015-16 (the same as was provided during 2014-15), subsidy works out to Rs.3742 per hectare per annum. In other words, the poorest farmer who has the smallest holding gets no more than Rs.3800/ha. per annum. If cash amount @ Rs. 4000/ha. is transferred in lieu of fertilizer subsidy to marginal farmers and to others in a graded system, the total bill on account of subsidy can be reduced to Rs. 60822 crores during 2015-16. Thus, a saving of Rs. 12178 crores could be made if direct cash transfer to farmers in lieu of fertilizer subsidy is implemented. However, this scheme can be effective only after complete computerization of land records in the states. Therefore, all states need to be persuaded to undertake this exercise, if not already done.

Benchmark Districts : Improving Land Productivity

- 6.12 District-wise analyses show that certain districts stand out in terms of their productivities which need to be emulated to make optimal utilization of scarce land. For instance, Kolhapur, Satara and Sangli in Maharashtra have far higher productivity of soyabean than all-India average. While these districts may have certain advantages in terms of natural endowment, they could be following different farming practices and applying better inputs which need to be explored separately. 'Village Level Support Centre' (VLSC) be developed for small/marginal farmers by State Governments in consultation with PRIs to provide services ranging from modern scientific cultivation practices, improved seed varieties, soil testing services to dissemination of information on weather and markets. This will help augmenting productivity levels, containing the cost of production and enhancing returns to farmers.

Labour Productivity and Farm Mechanization

- 6.13 Low labour productivity in agriculture at 17 percent compared to that of non-agriculture sector is exacerbated by migration of 44 lakh agricultural labourers, on an average, every year. To respond to this, traditional farming occupations need to be replaced by widespread adoption of farm mechanization. For this purpose, a Scheme to develop a cooperative based 'Custom Hiring Model' under which a variety of machines for different farming operations be offered on rent. While doing this, care should be taken to customize the machines according to domestic requirement because imported machinery is not always suited for Indian crop architecture.

Water Productivity

- 6.14 Water is increasingly becoming scarce in India with high opportunity costs. West Bengal, just as an example, consumes 2605 litres of water to produce a kilogram of rice compared to 5337 litres being guzzled by Punjab. The efficiency gap with respect to consumption of water in Punjab (the most efficient in terms of land productivity) is over 51 percent. This shows that the most efficient state in terms of land productivity is not the most efficient if other factor of production, namely water in this case, is factored into. Given that water tables in various states are depleting very fast, there is an urgent need to improve water use efficiency.
- 6.15 The country's farm sector alone accounts for 83 percent of all water use and therefore judicious use of water in agriculture will have significant impact on the overall availability of water. However, most state governments have been content with subsidising electricity for pumping irrigation water, which leads to inefficiencies. The Commission recommends economy in water use in agriculture by metering and putting quantitative ceilings on per hectare use of both water and electricity. If some farmers are able to use water /electricity less than the ceilings fixed for them, they should be rewarded by cash incentive equivalent to unused units of water / power at the rates of their domestic resource costs. This would encourage farmers to use drip irrigation and would enhance production per drop of water.

Incentivising Efficiency: Linking MSP of Sunflower seeds with Its Oil Content

- 6.16 To augment resource use efficiency, farmers need to be incentivized for higher 'oil content' in the oilseeds produced by them. Accordingly, the Commission

recommends that MSP of sunflower be directly linked to the basic 'oil content' of 35 percent. According to CACP's calculations, just and fair reward to farmers would be an additional Rs.14.90/qtl. for every 0.25 percent point increase in the oil content beyond this level. This will induce cultivators to adopt better farming practices and processors to invest in modern technology.

- 6.17 Implementation of the recommendation on linking MSP of sunflower with its oil content requires installation of apparatus/equipment in procurement centres to objectively measure the oil content. The Commission is aware of the fact that such equipments are not commonly seen in mandis/procurement centres, possibly due to less demand. However, this should not be construed as its non-availability. As the equipment is not highly sophisticated and can be procured/ made to order with a little extra effort, DAC should lend initial 'hand holding' to NAFED/mandis to acquire/ purchase the requisite equipments so as to enable measurement of oil content objectively.

Import-Dependence Reduction : A Way Forward

- 6.18 In the backdrop of high import-dependence on Indonesia and Malaysia for edible oils, promoting oil palm in the country would benefit domestic farmers instead of those of Indonesia and Malaysia. In addition, this would be a land saving strategy as through the current mix of oilseeds, 4 million MT of domestic production of edible oils is being produced by using about 15.80 million hectares of land. This much quantity of palm oil could be produced from just 1 million hectares. It is recommended that CACP's Report on 'Oil Palm: Pricing for Growth, Efficiency & Equity, Towards a Rational Pricing Policy for Fresh Fruit Bunches and Potential Solution for India's Burgeoning Edible Oil Import's' be implemented in the medium to long term interest of the country.

International Competitiveness

- 6.19 Based on sound economic principle, import duty ought to escalate from raw material to finished product i.e. raw material should attract low duty which should increase for intermediate goods and be further increased for finished product. In so far as oilseeds/edible oils are concerned, it attracts a sort of inverted duty structure which impacts domestic industry adversely. It is high at 30 percent for raw material i.e. oilseeds and low at 7.5 percent for crude oil and in between at 15 percent for finished product i.e. refined oil. The Commission recommends that import duty for oilseeds be fixed at 5 percent instead of current 30 percent, whereas on crude and

refined oils it be raised to 10 percent and 17.5 percent respectively. It will address, to some extent, the issue of blending of relatively less expensive imported oil (palm oil) with domestically produced oils viz. soyabean, groundnut and sunflower. It is imperative to continuously monitor domestic and international price trends and identify the trigger points to tweak tariff rates so that these remain relevant and rational in changing global scenario.

MSPs recommended for KMS 2015-16

6.20 Based on the analyses undertaken in this report, the Commission recommends MSPs of fourteen kharif crops for the KMS 2015-16, as given in Table-6.1.

Table 6.1: Recommended MSPs of Kharif Crops (KMS 2015-16) and their Justification

(Rs./qtl)

Crops	Projected Costs, 2015-16			Average Prices, 2014-15 (Oct-Dec)		MSP for KMS		MSP now being Recommended for the KMS 2015-16	Justification
	A ₂	A ₂ +FL	C ₂	Domestic	International	2013-14	2014-15		
Paddy Common	780	1020	1324	1254	1374*	1310 (4.8)	1360 (3.8)	1410 (3.7)	Excessive stocks with FCI. Recommended MSPs fully cover cost.
Paddy Grade A	-	-	-	-	-	1345 (5.1)	1400 (4.1)	1450 (3.6)	
Jowar-Hybrid	1170	1467	1929	1313	1245	1500 (0.0)	1530 (2.0)	1570 (2.6)	Even though both domestic and international prices are subdued, a nominal increase in MSP is recommended due to increase in input cost.
Jowar-Mal-dandi	-	-	-	-	-	1520 (0.0)	1550 (2.0)	1590 (2.6)	
Bajra	535	893	1154	1300	-	1250 (6.4)	1250 (0.0)	1275 (2.0)	Recommended MSP fully covers cost.
Ragi	1196	1688	2069	2050	-	1500 (0.0)	1550 (3.3)	1650 (6.5)	Recommended MSP is in response to both high domestic prices and costs.
Maize	696	941	1223	1141	1075	1310 (11.5)	1310 (0.0)	1325 (1.1)	Even though both domestic and international prices are subdued, a nominal increase in MSP is recommended due to increase in input cost. Recommended MSP fully covers cost.

Crops	Projected Costs, 2015-16			Average Prices, 2014-15 (Oct-Dec)		MSP for KMS		MSP now being Recommended for the KMS 2015-16	Justification
	A ₂	A ₂ +FL	C ₂	Domestic	International	2013-14	2014-15		
Tur (Arhar)	2453	3237	4272	4534	4490	4300 (11.7)	4350 (1.2)	4425 (1.7)	Recommended MSP fully covers cost.
Moong	2714	3993	5025	7499	7153	4500 (2.3)	4600 (2.2)	4650 (1.1)	To keep inter-crop parity within kharif pulses.
Urad	2529	3455	4483	5547	5729	4300 (0.0)	4350 (1.2)	4425 (1.7)	
Groundnut	2584	3314	4195	3577	2861	4000 (8.1)	4000 (0.0)	4030 (0.8)	Even though both domestic and international prices are subdued, a nominal increase in MSP is recommended due to increase in input cost.
Sunflower Seed	2846	3282	4114	3392	2669	3700 (0.0)	3750 (1.4)	3800 # (1.3)	Recommended MSP fully covers cost.
Soyabean (Yellow)	1527	1770	2418	3008	2728	2560 (14.3)	2560 (0.0)	2600 (1.6)	
Soyabean (Black)	\$	\$	\$	\$	\$	2500 (13.6)	2500 (0.0)	\$	To maintain inter-crop parity.
Sesamum	2765	4132	5189	8783	-	4500 (7.1)	4600 (2.2)	4700 (2.2)	
Nigerseed	2119	3146	4068	4365	-	3500 (0.0)	3600 (2.9)	3650 (1.4)	Recommended MSP is in response to both high domestic prices and costs.
Cotton (Medium Staple)	2228	2753	3767	4070	3966	3700 (2.8)	3750 (1.4)	3800 (1.3)	Even though both domestic and international prices are subdued, a nominal increase in MSP is recommended due to increase in input cost. recommended MSP fully covers cost.
Cotton (Long Staple)	-	-	-	-	-	4000 (2.6)	4050 (1.3)	4100 (1.2)	

\$: Based on discussions with the senior officers and scientists of major soyabean producing states namely Madhya Pradesh, Maharashtra and Rajasthan, it emerged that soyabean (black) is not being produced in any of these states for quite some time. The cost of production of soyabean (black) reported in CACP's reports on "Price Policy for Kharif Crops", various issues, pertained to soyabean (yellow). In view of this, the Commission recommends not to fix MSP of soyabean (black).
*International price of paddy has been estimated by applying ratio of domestic prices of paddy to that of rice on international price of rice.

: Corresponding to oil content of 35 percent.

Note : Figures in parentheses represent increases in MSP over the previous year.

- 6.21 Based on efficiency consideration, the Commission recommends that MSP of sunflower be directly linked to the basic 'oil content' of 35 percent and farmers be incentivized by giving an additional Rs.14.90/qtl. for every 0.25 percent point increase in the oil content beyond this level. This will incentivize cultivators to adopt better farming practices and processors to invest in modern technology.
- 6.22 Implementation of the recommendation on linking MSP of sunflower with its oil content requires installation of apparatus/equipment in procurement centres to objectively measure the oil content. The Commission is aware of the fact that such equipments are not commonly seen in mandis/procurement centres, possibly due to its low demand. However, this should not be construed as its non-availability. The equipment is not highly sophisticated and can be procured/ made to order with a little extra effort.
- 6.23 The Commission is of the considered opinion that these non-price and price policy recommendations would steer farmers and agro producers to adopt better technologies and earn better returns. It would also contribute to diversification of the crops in line with emerging demand patterns of the consumers and will go a long way in putting the crop husbandry on a higher trajectory of growth.

(Dr. Ashok Vishandass)
Chairman

(D.S. Raghu)
Member (Non-Official)

(Kaibalya Pradhan)
Member (Non-Official)

(Dr. Shailja Sharma)
Member Secretary

27th March, 2015

Annex Tables

Annex Table-1.1 : All India Estimates of Area of Agricultural Commodities

(Million hectares)

S.No.	Crops		2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Rice	Kharif	39.45	40.81	37.62	38.05	40.14	38.91	39.45	39.25
		Rabi	4.46	4.73	4.30	4.81	3.87	3.84	4.69	4.17
		Total	43.91	45.54	41.92	42.86	44.01	42.75	44.14	43.42
2	Wheat	Rabi	28.04	27.75	28.46	29.07	29.86	30.00	30.47	30.32
3	Barley	Rabi	0.60	0.71	0.62	0.71	0.64	0.70	0.67	0.71
	Coarse Cereals	Kharif	22.62	20.83	21.31	22.05	20.75	18.82	19.27	18.42
		Rabi	5.87	6.62	6.37	6.29	5.67	5.94	5.95	5.37
		Total	28.48	27.45	27.68	28.34	26.42	24.76	25.22	23.78
	Cereals	Kharif	62.07	61.64	58.92	60.10	60.89	57.73	58.72	57.67
		Rabi	38.36	39.10	39.13	40.17	39.40	39.78	41.11	39.85
		Total	100.43	100.74	98.05	100.27	100.29	97.52	99.83	97.52
4	Jowar	Kharif	3.50	2.89	3.24	3.07	2.62	2.43	2.28	1.94
		Rabi	4.26	4.64	4.55	4.31	3.63	3.79	3.52	3.10
		Total	7.76	7.53	7.79	7.38	6.25	6.21	5.79	5.04
5	Bajra	Kharif	9.57	8.75	8.90	9.61	8.78	7.30	7.81	7.14
6	Maize	Kharif	7.12	6.89	7.06	7.28	7.38	7.21	7.31	7.49
		Rabi	1.00	1.28	1.20	1.27	1.40	1.46	1.76	1.56
		Total	8.12	8.17	8.26	8.55	8.78	8.67	9.07	9.05
7	Ragi	Kharif	1.39	1.38	1.27	1.29	1.18	1.13	1.19	1.17
8	Tur (Arhar)	Kharif	3.73	3.38	3.47	4.37	4.01	3.89	3.90	3.70
9	Moong	Kharif	3.73	2.84	3.07	3.51	3.39	2.72	3.38	3.08
10	Urad	Kharif	3.23	2.67	2.96	3.25	3.22	3.13	3.06	3.19
11	Gram	Rabi	7.54	7.89	8.17	9.19	8.30	8.52	9.93	8.36
12	Lentil (Masur)	Rabi	1.31	1.38	1.48	1.60	1.56	1.42	-	-
13	Pulses	Kharif	11.49	9.81	10.58	12.32	11.19	9.95	10.33	9.69
		Rabi	12.14	12.29	12.70	14.08	13.27	13.30	14.88	13.68
		Total	23.63	22.09	23.28	26.40	24.46	23.26	25.21	23.37

Annex Table-1.1 : All India Estimates of Area of Agricultural Commodities

(Million hectares)

S.No.	Crops		2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Foodgrains	Kharif	73.58	71.45	69.51	72.42	72.08	67.69	69.05	67.36
		Rabi	50.49	51.39	51.83	54.25	52.67	53.09	55.99	53.53
		Total	124.07	122.83	121.33	126.67	124.75	120.78	125.04	120.89
14	Groundnut	Kharif	5.31	5.29	4.62	4.98	4.32	3.93	4.65	3.76
		Rabi	0.98	0.88	0.86	0.88	0.95	0.79	0.86	0.90
		Total	6.29	6.16	5.48	5.86	5.26	4.72	5.51	4.66
15	Soyabean	Kharif	8.88	9.51	9.73	9.60	10.11	10.84	11.72	11.07
16	Sunflower	Kharif	0.76	0.66	0.57	0.32	0.26	0.30	0.25	0.19
		Rabi	1.15	1.15	0.91	0.61	0.47	0.53	0.42	0.37
		Total	1.91	1.81	1.48	0.93	0.73	0.83	0.67	0.56
17	Sesamum	Kharif	1.80	1.81	1.94	2.08	1.90	1.71	1.68	1.63
18	Nigerseed	Kharif	0.41	0.39	0.38	0.37	0.36	0.31	0.30	0.28
19	Rapeseed/ Mustard	Rabi	5.83	6.30	5.59	6.90	5.89	6.36	6.65	6.20
20	Safflower	Rabi	0.29	0.29	0.29	0.24	0.25	0.18	0.18	0.16
	Total Oilseeds	Kharif	17.95	18.53	17.97	18.23	18.42	18.32	19.65	18.07
		Rabi	8.74	9.03	7.99	9.00	7.89	8.16	8.40	7.93
		Total	26.69	27.56	25.96	27.22	26.31	26.48	28.05	26.00
21	Cotton		9.41	9.41	10.13	11.24	12.18	11.98	11.96	12.97
	Jute		0.81	0.79	0.81	0.77	0.81	0.78	0.76	0.76
	Mesta		0.15	0.12	0.09	0.10	0.10	0.09	0.08	0.06
22	Jute & Mesta		0.96	0.90	0.91	0.87	0.90	0.86	0.84	0.82
23	Sugarcane		5.06	4.42	4.17	4.88	5.04	5.00	4.99	5.07

Source : Directorate of Economics & Statistics, Ministry of Agriculture

Annex Table -1.2 : All India Estimates of Production of Agricultural Commodities

(Million tonnes)

S.No.	Crops		2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Rice	Kharif	82.66	84.94	75.95	80.68	92.78	92.36	91.50	89.55
		Rabi	14.03	14.23	13.14	15.29	12.52	12.87	15.15	13.49
		Total	96.69	99.17	89.08	95.97	105.30	105.23	106.65	103.04
2	Wheat		78.57	80.68	80.80	86.87	94.88	93.51	95.85	95.76
3	Barley		1.20	1.69	1.35	1.66	1.62	1.75	1.83	1.77
	Coarse Cereals	Kharif	31.89	28.54	23.83	33.08	32.44	29.80	31.20	28.73
		Rabi	8.86	11.49	9.72	10.32	9.58	10.25	12.09	11.11
		Total	40.75	40.04	33.55	43.40	42.01	40.04	43.29	39.83
	Cereals	Kharif	114.55	113.49	99.78	113.77	125.22	122.16	122.70	118.28
		Rabi	101.46	106.40	103.65	112.48	116.98	116.63	123.09	120.36
		Total	216.01	219.89	203.44	226.24	242.20	238.78	245.79	238.64
4	Jowar	Kharif	4.11	3.05	2.76	3.44	3.29	2.84	2.39	2.01
		Rabi	3.81	4.19	3.94	3.56	2.69	2.44	3.15	2.83
		Total	7.93	7.25	6.70	7.00	5.98	5.28	5.54	4.84
5	Bajra		9.97	8.89	6.51	10.37	10.28	8.74	9.25	7.11
6	Maize	Kharif	15.11	14.12	12.29	16.64	16.49	16.20	17.14	16.46
		Rabi	3.85	5.61	4.43	5.09	5.27	6.05	7.11	6.51
		Total	18.96	19.73	16.72	21.73	21.76	22.26	24.26	22.97
7	Ragi	Kharif	2.15	2.04	1.89	2.19	1.93	1.57	1.98	1.89
8	Tur (Arhar)	Kharif	3.08	2.27	2.46	2.86	2.65	3.02	3.17	2.75
9	Moong	Kharif	1.52	1.03	0.69	1.80	1.63	1.19	1.61	1.39
10	Urad	Kharif	1.49	1.17	1.24	1.76	1.77	1.95	1.70	1.61
11	Gram	Rabi	5.75	7.06	7.48	8.22	7.70	8.83	9.53	8.28
12	Lentil (Masur)	Rabi	0.81	0.95	1.03	0.94	1.06	1.13	-	-
13	Pulses	Kharif	6.40	4.69	4.20	7.12	6.06	5.92	5.99	5.50
		Rabi	8.36	9.88	10.46	11.12	11.03	12.43	13.79	12.92
		Total	14.76	14.57	14.66	18.24	17.09	18.34	19.78	18.43

Annex Table -1.2 : All India Estimates of Production of Agricultural Commodities

(Million tonnes)

S.No.	Crops		2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Foodgrains	Kharif	120.96	118.17	103.99	120.89	131.27	128.07	128.69	123.78
		Rabi	109.82	116.28	114.11	123.60	128.01	129.05	136.88	133.28
		Total	230.78	234.46	218.10	244.48	259.29	257.12	265.57	257.07
14	Groundnut	Kharif	7.36	5.62	3.85	6.64	5.13	3.19	8.06	5.65
		Rabi	1.82	1.55	1.58	1.62	1.84	1.51	1.66	1.82
		Total	9.18	7.17	5.43	8.26	6.96	4.69	9.71	7.47
15	Soyabean		10.97	9.91	9.96	12.74	12.21	14.67	11.86	11.64
16	Sunflower	Kharif	0.46	0.36	0.21	0.19	0.15	0.19	0.15	0.10
		Rabi	1.00	0.80	0.64	0.46	0.37	0.36	0.35	0.32
		Total	1.46	1.16	0.85	0.65	0.52	0.54	0.50	0.42
17	Sesamum	Kharif	0.76	0.64	0.59	0.89	0.81	0.69	0.71	0.70
18	Nigerseed	Kharif	0.11	0.12	0.10	0.11	0.10	0.10	0.10	0.10
19	Rapeseed/ Mustard	Rabi	5.83	7.20	6.61	8.18	6.60	8.03	7.88	7.36
20	Safflower	Rabi	0.19	0.19	0.18	0.15	0.15	0.11	0.11	0.08
	Nine Oilseeds	Kharif	20.71	17.81	15.73	21.92	20.69	20.79	22.61	20.10
		Rabi	9.91	9.91	9.15	10.56	9.11	10.15	10.14	9.73
		Total	30.62	27.72	24.88	32.48	29.80	30.94	32.75	29.83
21	Cotton\$		30.70	29.00	30.50	33.90	35.50	37.00	39.80	40.00
	Cotton ^		25.88	22.28	24.02	33.00	35.20	34.22	35.90	35.15
	Jute +		10.22	9.63	11.23	10.01	10.74	10.34	11.08	10.98
	Mesta +		0.99	0.73	0.59	0.61	0.66	0.59	0.61	0.49
22	Jute & Mesta +		11.21	10.37	11.82	10.62	11.40	10.93	11.69	11.47
23	Sugarcane		348.19	285.03	292.30	342.38	361.04	341.20	352.14	354.95

Source : Directorate of Economics & Statistics, Ministry of Agriculture, Cotton Advisory Board.

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

^: E&S estimates of Million bales of 170 kgs each

+ : Million bales of 180 kgs each

Annex Table -1.3 : All India Estimates of Yield of Agricultural Commodities

(Kgs per hectare)

S.No.	Crops		2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
1	Rice	Kharif	2095	2081	2019	2121	2311	2373	2319	2282
		Rabi	3147	3010	3055	3176	3238	3353	3232	3238
		Total	2202	2178	2125	2239	2393	2461	2416	2373
2	Wheat		2802	2907	2839	2989	3177	3117	3145	3158
3	Barley		1985	2394	2172	2357	2516	2521	2718	2491
	Coarse Cereals	Kharif	1410	1371	1119	1500	1563	1583	1619	1560
		Rabi	1510	1735	1525	1641	1689	1725	2034	2070
		Total	1431	1459	1212	1531	1590	1617	1717	1675
	Cereals	Kharif	1846	1841	1693	1893	2056	2116	2089	2051
		Rabi	2645	2721	2649	2800	2969	2931	2995	3020
		Total	2151	2183	2075	2256	2415	2449	2462	2447
4	Jowar	Kharif	1176	1055	853	1119	1257	1171	1050	1036
		Rabi	894	904	865	827	741	644	896	913
		Total	1021	962	860	949	957	850	957	961
5	Bajra		1042	1015	731	1079	1171	1198	1184	995
6	Maize	Kharif	2122	2048	1740	2285	2234	2246	2346	2198
		Rabi	3854	4387	3694	4003	3765	4152	4050	4176
		Total	2335	2414	2024	2540	2478	2566	2676	2539
7	Ragi	Kharif	1552	1477	1489	1705	1641	1396	1661	1607
8	Tur (Arhar)	Kharif	826	671	711	655	662	776	813	742
9	Moong	Kharif	409	364	225	513	483	436	475	450
10	Urad	Kharif	462	440	418	542	549	622	555	505
11	Gram	Rabi	762	895	915	895	928	1036	960	991
12	Lentil (Masur)	Rabi	622	693	697	591	678	797	-	-
13	Pulses	Kharif	557	478	397	578	541	594	580	568
		Rabi	688	804	823	790	831	934	927	945
		Total	625	659	630	691	699	789	785	788

Annex Table -1.3 : All India Estimates of Yield of Agricultural Commodities

(Kgs per hectare)

S.No.	Crops		2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
	Foodgrains	Kharif	1644	1654	1496	1669	1821	1892	1864	1838
		Rabi	2175	2263	2202	2278	2430	2431	2445	2490
		Total	1860	1909	1798	1930	2078	2129	2124	2126
14	Groundnut	Kharif	1386	1063	835	1335	1188	811	1735	1502
		Rabi	1857	1764	1830	1846	1938	1908	1926	2031
		Total	1459	1163	991	1411	1323	994	1764	1604
15	Soyabean		1235	1041	1024	1327	1208	1353	1012	1052
16	Sunflower	Kharif	607	540	378	608	566	622	621	531
		Rabi	870	696	700	748	783	674	826	858
		Total	765	639	576	701	706	655	750	748
17	Sesamum	Kharif	421	354	303	429	426	402	426	430
18	Nigerseed	Kharif	269	297	266	290	269	325	328	354
19	Rapeseed/ Mustard	Rabi	1001	1143	1183	1185	1121	1262	1185	1187
20	Safflower	Rabi	642	642	621	617	580	591	638	476
	Nine Oilseeds	Kharif	1154	961	875	1203	1123	1135	1151	1113
		Rabi	1134	1097	1146	1174	1155	1244	1207	1227
		Total	1147	1006	958	1193	1133	1168	1168	1147
21	Cotton \$		554	524	512	513	496	525	566	524
	Cotton		467	403	403	499	491	486	510	461
	Jute		2260	2207	2492	2329	2389	2396	2639	2604
	Mesta		1221	1141	1122	1115	1248	1237	1338	1515
22	Jute & Mesta		2102	2071	2349	2192	2268	2281	2512	2527
23	Sugarcane		68877	64553	70020	70091	71667	68254	70520	70019

Source : Directorate of Economics & Statistics, Ministry of Agriculture \$: CAB estimates

Annex Table - 1.4 : Share of Kharif Crops (under MSP) in Total Production, TE 2014-15

(Percent)

S No.	Crops	AP + Telan	As- sam	Bi- har	Chhatt	Guj	Har	H.P	J&K	Jhar	Kar	Ker- ala	M.P	Maha	Odi- sha	Pun- jab	Raj	TN	U. P	UK	W.B	Oth- ers	Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)
1	Paddy	10.3	4.6	6.1	6.7	1.6	3.9	0.1	0.6	3.2	3.2	0.5	2.9	2.7	6.9	11.3	0.3	4.9	13.9	0.6	13.6	2.0	100.0
2	Jowar	7.3	-	0.1	0.1	2.6	0.9	-	-	0.0	22.4	-	9.2	38.4	0.1	-	8.8	5.2	4.8	-	-	0.1	100.0
3	Maize	14.8	0.1	8.1	1.1	3.2	0.2	3.2	2.5	2.2	17.3	-	7.5	10.4	1.1	2.6	7.5	5.6	5.7	0.2	1.7	5.1	100.0
4	Bajra	1.0	-	-	0.0	12.5	9.2	-	-	-	3.2	-	4.3	6.8	-	0.0	42.1	0.8	19.9	-	-	0.2	100.0
5	Ragi	2.4	-	0.5	0.1	0.9	-	-	-	0.5	62.2	-	0.0	6.6	2.6	-	-	12.4	-	10.3	-	1.4	100.0
6	Tur	7.1	-	1.6	1.0	8.4	0.6	-	-	6.8	15.3	-	14.5	28.3	4.9	0.1	0.4	1.3	9.4	0.1	0.1	0.2	100.0
7	Moong	11.5	-	5.9	0.3	5.6	-	-	-	1.2	5.5	-	4.3	17.0	6.0	2.4	28.2	4.7	3.1	-	-	4.3	100.0
8	Urad	13.6	-	0.8	2.0	3.5	-	-	-	5.8	2.5	-	22.0	10.9	1.9	-	5.7	6.0	18.7	0.8	3.2	2.6	100.0
9	Ground- nut	14.2	-	-	0.5	42.1	-	-	-	-	7.0	-	4.1	4.2	0.9	0.1	11.5	11.4	1.3	0.0	1.9	0.8	100.0
10	Sunflow- er	-	-	-	-	-	4.4	-	-	-	51.7	-	-	6.6	-	5.2	-	2.4	1.0	0.0	-	28.8	100.0
11	Soyabean	-	-	-	0.8	0.4	-	-	-	-	-	-	50.1	35.4	-	-	8.9	-	0.1	0.2	-	4.2	100.0
12	Niger- seed	3.6	-	-	12.6	-	-	-	-	1.6	3.6	-	27.7	8.3	32.9	-	-	-	-	-	-	9.6	100.0
13	Sesam- um	2.6	-	-	0.8	11.0	-	-	-	-	4.0	-	20.8	1.1	0.8	-	14.4	2.7	7.7	0.1	30.6	3.4	100.0
14	Cotton	20.6	-	-	-	29.4	6.4	-	-	-	5.7	-	4.8	21.3	-	4.8	4.1	1.4	-	-	-	1.5	100.0

Annex Table - 2.1 : Procurement as Percentage of Production of Kharif Crops

(Kgs per hectare)

S.No.	Parameter	Rice			Coarse Grains			Tur/Arhar			Urad			Moong		
		2012-13	2013-14	2014-15	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	Production	105.24	106.65	103.04	40.04	43.29	39.83	3.02	3.17	2.75	1.90	1.70	1.61	1.19	1.61	1.39
2	Procurement*	34.03	31.84	30.43	0.07	1.23	1.01	0.02	0.04	0.00	0.08	0.00	0.00	0.00	0.00	0.00
3	% Procurement	32.33	29.85	29.53	0.18	2.84	2.54	0.53	1.39	0.00	4.20	0.27	0.00	0.09	0.00	0.00
4	Stocks with FCI (as on 1st July)	30.71	31.51	21.24	0.05	0.04	1.20	Not Available								
5	Storage capacity with FCI (Rice and Wheat as on 1st July)	36.44	39.18	38.74												
6	Storage capacity with States (Rice and Wheat as on 1st July)	36.00	37.69	37.55												
7	Total Storage capacity (Rice and Wheat as on 1st July)	72.44	76.87	76.29												
8	Buffer Stock Norms (as on 1st July)	11.80	11.80	11.80												
S.No.	Parameter	Soyabean			Sunflowerseed			Groundnutpods			Cotton (DES)**			Cotton (CAB)**		
		2012-13	2013-14	2014-15	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15	2012-13	2013-14	2014-15^	2012-13	2013-14	2014-15^
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
1	Production	14.67	11.86	11.64	0.54	0.50	0.42	4.70	9.71	7.47	34.22	35.90	35.15	37.00	39.80	40.00
2	Procurement*	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.33	0.62	2.29	0.41	2.49	2.29	0.41	2.49
3	% Procurement	0.13	0.00	0.00	0.28	0.87	0.98	0.06	3.44	8.34	6.68	1.14	7.09	6.18	1.03	6.23

Source : FCI, NAFED and CCI for procurement of cotton

Note : Procurement of Rice and Coarse Grains are projected for 2014-15

* Procurement of Tur, Moong, Urad, Soyabean, Sunflowerseed and Groundnutpods for 2014-15 is upto 29.01.2015

** Million bales of 170 Kg each

^ procurement of cotton for 2014-15 is as on 14th Dec.,2014

Annex Table - 2.2: Decentralized Procurement (DCP) States for Paddy

S.No.	State/UT
(1)	(2)
1	A&N Islands
2	Bihar
3	Chhattisgarh
4	Karnataka
5	Kerala
6	Madhya Pradesh
7	Odisha
8	Tamil Nadu
9	Uttarakhand
10	West Bengal
11	Andhra Pradesh (6 Districts)
12	Telengana (9 Districts)

Source : FCI

**Annex Table - 2.3 : States/Centres with Prices of Kharif Crops Below MSP
During 2014-15 Marketing Season**

(Rs per quintal)

S. No.	State	Centre	MSP	Month		
				Oct	Nov	Dec
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Paddy			1360			
1	Andhra Pd.	Nizamabad		1270	1300	1320
2	Assam	Jorhat		1300	1030	1020
3	Bihar	Buxur			1150	1215
		Sitamarhi			1125	1190
		Darbhanga				1150
4	Chhattisgarh	Raipur		1250	1260	1200
		Jagdalpur		1120	1050	1075
5	Gujarat	Ahmedabad		1340	1315	1275
6	Karnataka	Mysore			1130	1300
		Raichur		1166	1207	1162
7	Uttar Pd.	Shahjahanpur		1105	1300	1300
		Attara		1175	1100	1225
		Pilibhit		1075	1320	1185
8	West Bengal	Contai				1150
Jowar			1530			
1	Karnataka	Bellary		1414	1168	1410
		Dharwad		1350	1400	1300
		Gulbarga		1188	1213	
2	Madhya Pd.	Khargaon			1326	1385
3	Maharashtra	Ahmednagar		1500	1500	
		Amrawati		1500	1500	
4	Rajasthan	Ajmer		1400	1525	
5	Uttar Pd.	Bahraich		1255	1250	1255
Bajra			1250			
1	Gujarat	Rajkot		1195	1215	
		Deesa		1181	1216	1212
		Harij		1075	1110	1160
		Patan		1170	1105	
2	Haryana	Hissar		1150	1125	1150
3	Karnataka	Bijapur		1075	1150	1085
		Bagalkot		1067	1168	1049
4	Rajasthan	Ajmer		1150	1150	1225
		Alwar		1050	1065	1060
		Jaipur		1100	1150	1150
		Kekri		1033	1110	1150
5	Uttar Pd.	Hathras		1070	990	1090
		Jaswant Nagar			1000	1070
		Agra		1230	1225	

**Annex Table - 2.3 : States/Centres with Prices of Kharif Crops Below MSP
During 2014-15 Marketing Season**

(Rs per quintal)

S. No.	State	Centre	MSP	Month		
				Oct	Nov	Dec
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Maize			1310			
1	Andhra Pd.	Hyderabad		1250	1200	1200
		Karimnagar		1140	1140	1080
		Nizamabad		1195	1100	1100
		Warangal		1112	1140	1090
2	Gujarat	Ahmedabad		1050	1275	1300
3	Karnataka	Gokak		1090	1070	1120
		Davangere		965	1035	1080
		Bijapur		1075	1085	1025
		Jamkandi		1100	1100	1100
4	Madhya Pd.	Jhabua		1150	1100	1180
5	Maharashtra	Jalgaon		1100	1150	1100
		Kolhapur		1300	1250	1200
		Miraj		1250		
6	Punjab	Hoshiarpur		1025	1250	
		Patiala		1200	1200	1200
7	Rajasthan	Nimbahera		1230	1242	
		Udaipur				1225
8	Uttar Pd.	Bahraich		1000	1120	1120
		Bulandshahr		1150	1140	1130
		Farukhabad		1150	1150	1150
		Lakhimpur		1220	1235	1275

**Annex Table - 2.3 : States/Centres with Prices of Kharif Crops Below MSP During 2014-15
Marketing Season**

(Rs per quintal)

S.No.	State	Centre	MSP	Month		
				Oct	Nov	Dec
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Tur			4350			
1	Bihar	Naugachhia		3320	3350	3340
2	Gujarat	Talod				3528
3	Karnataka	Gulbarga			4256	
		Raichur		3696		
4	Madhya Pd.	Bhopal		3200	3300	3400
5	Maharashtra	Akola		4300		
6	Uttar Pd.	Hapur		4275	4125	
7	West Bengal	Kolkata				4200
Urad			4350			
1	Andhra Pd.	Suryapeta			3511	
2	Gujarat	Talod		4026		
3	Karnataka	Gulbarga			4035	
4	Madhya Pd.	Bhopal		3900	4000	
Sunflower Seed			3750			
1	Andhra Pd.	Adoni		3061	3000	3028
		Hyderabad		3355	3400	3325
		Kurnool		3250	3039	3166
2	Karnataka	Gulbarga		2878	2975	3028
		Raichur		2900	2981	2751
3	Madhya Pd.	Goregaon		1850		1850
4	Maharashtra	Khamgaon			3200	3200
5	Tamil Nadu	Virudhunagar		3600	3500	3500

**Annex Table - 2.3 : States/Centres with Prices of Kharif Crops Below MSP During 2014-15
Marketing Season**

(Rs per quintal)

S.No.	State	Centre	MSP	Month		
				Oct	Nov	Dec
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Groundnut			4000			
1	Andhra Pd.	Kurnool		3638	3390	3259
		Mahbubnagar		3910	3600	3809
		Rayachoti		3400	3600	3400
		Suryapeta		3829		3769
2	Gujarat	Rajkot		3575	3490	3665
		Gondal			3300	3580
		Jamnagar		3882	3877	3766
		Talod		3480	3150	3691
3	Karnataka	Raichur		3250	3744	3886
		Gadag			3401	3172
		Devangere			3850	3477
		Chitradurga		3834	3608	3947
4	Maharashtra	Khamgaon			3500	3600
		Nashik		3900	3800	
5	Rajasthan	Jaipur		4000	4000	3350
6	Uttar Pd.	Agra			3460	
		Jhansi	3450	3425	3720	
Nigerseed			3600			
1	Jharkhand	Gumla			3400	3400
		Ranchi			3400	
Sesamum			4600			
1	Madhya Pd.	Shivpuri		2800	3125	3100
2	Maharashtra	Nagpur		3000	3100	3050
		Sangli		3000	3200	3200
3	Rajasthan	Jaipur		3350	3200	3450
Cotton (Medium Staple)			3750			
1	Andhra Pd.	Nandyal			3650	
		Proddatur			3700	
2	Gujarat	Bharuch			3300	
3	Tamil Nadu	Virudhunagar				3066

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

(concluded)

Annex Table-3.1: Benchmarking of Productivity Levels across Countries and States in India

S.No	Crop	Yield (Tn/ Ha)	Benchmarking States	Benchmarking Countries TE 2013 (Tn/ Ha)	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	3.64	Punjab (5.85, 10.5%), TN (4.93, 5.4%), Haryana (4.79, 3.7%), AP (4.59, 11.8%)	United States of America (8.29, 1.2%), China (6.73, 27.8%), Japan (6.71, 1.4%), Vietnam (5.58, 5.9%), India (3.66, 21.5%)	56.1	37.8
2	Tur	0.76	Bihar (1.85, 1.5%), Gujarat (1.12, 8.5%), Jharkhand (1.02, 5.7%), UP (1.00, 10.4%)	Myanmar (1.36, 19.5%), Malawi (1.21, 5.5%), Uganda (0.88, 2.0%), Haiti (0.80, 1.8%), India (0.65, 62.8%)	44	58.8
3	G'nut	1.38	TN (2.63, 13.2%), WB (2.39, 2.2%), Raj (1.82, 10.9%), Gujarat (1.74, 39.3%)	United States of America (4.38, 5.2%), China (3.57, 39.4%), Argentina (2.47, 1.9%), Indonesia (2.23, 2.9%), India (1.38, 16.7%)	68.6	47.7
4	Cotton	0.54	TN (0.74, 1.5%), Gujarat (0.71, 30.0%), Haryana (0.70, 6.6%), Punjab (0.68, 5.5%)	Turkey (1.61, 3.1%), Australia (1.58, 3.4%), China (1.40, 25.9%), Brazil (1.20, 5.9%), India (0.52, 24.6%)	66.7	27.7
5	Soya-bean	1.17	Maharashtra (1.32, 34.5%), Raj (1.23, 9.9%), MP (1.08, 50.0%)	Brazil (2.90, 28.5%), Canada (2.88, 1.9%), United States of America (2.80, 32.8%), Uruguay (2.67, 1.0%), India (1.17, 5.0%)	59.6	11.2
6	Maize	2.54	TN (4.99, 6.6%), AP (4.64, 19.7%), WB (3.92, 1.9%), Punjab (3.85, 2.2%)	Canada (9.25, 1.4%), France (9.02, 1.7%), United States of America (8.98, 33.9%), Argentina (6.27, 2.8%), India (2.49, 2.4%)	72.6	49.1
7	Jowar	0.91	AP (1.63, 7.7%), MP (1.62, 8.9%), Guj (1.24, 2.5%), UP (1.17, 3.8%)	Egypt (5.32, 1.3%), Argentina (4.38, 7.0%), China (3.80, 3.4%), Mexico (3.76, 11.2%), USA (3.46, 12.2%), India (0.92, 10.3%)	82.9	44.1
8	Sun-flower	0.71	Punjab (1.85, 4.3%), Haryana (1.75, 3.5%), UP (1.62, 1.0%), TN (1.58, 3.2%)	China (2.5, 5.7%), Serbia (2.48, 1.1%), Hungary (2.33, 3.4%), France (2.30, 4.1%), India (0.76, 1.4%)	71.5	61.4

Source: Collated from FAO and DES

1. Above figures are based on TE 2013/ TE 2013-14

2. Figures in parentheses indicate yield (Tn/Ha.) and share of production (%) respectively.

3. Countries and States with less than 1% share in total production have not been considered.

4. Yield of India in column (3) relates to Agriculture year whereas that in column (5) relates to calendar year.

5. Efficiency Gap= (1- Avg. yield/ Max. yield)* 100

Annex Table-3.2(a): District-wise Productivity Levels of Paddy, TE 2013-14

S.No	Yield Band (Kgs/Ha.)	AP *		Punjab		UP		WB	
		Area (%)	No. of Distts.	Area (%)	No. of Distts.	Area (%)	No. of Distts.	Area (%)	No. of Distts.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
1	2000-3000	9.2	2	-	-	1.7	1	-	-
2	3000-4000	8.5	3	-	-	71.1	34	46.8	8
3	4000-5000	48.1	9	21.1	4	13.6	7	52.6	9
4	5000-6000	34.1	6	36.4	8	-	-	-	-
5	6000-7000	-	-	42	8	-	-	-	-
Summary Indicators of Land Productivity	Total Area ('000 ha)	4077		2838		5929		5458	
	Max Yield (Kgs/Ha.)	5887		6866		4666		4833	
	Top 3 distts. In descending order of Yields	Nellore, Nizamabad, Prakasham		Sangrur, Barnala, Moga		Auraiya, Barabanki, Etawah		Birbhum, Burdwan, Malda	
	Area under top 3 distts (%) (highest yield levels)	14.4		19.7		4.8		21.5	
	Minimum Yield. (Kgs/Ha.)	2290		4191		2943		3327	
	Distt. Having Min. Yield.	Visakhapatnam		Amritsar		Unnao		Purba Midnapur	
	Share of Area under Min. Yield (%)	3.1		6.5		1.7		7.2	
	Average Yield (Kgs/Ha.)	4591		5846		3632		4117	
	Efficiency Gap (%)	22		15		22		15	

Source: Concerned State Governments;

* including Telangana

Note: Districts with less than 1% share in total production of the state have not been considered.

Annex Table-3.2(b): District-wise Productivity Levels of Maize, TE 2013-14

S.No	Yield Band (Kgs/Ha.)	AP*		Bihar**		Karnataka	
		Area (%)	No. of Distts.	Area (%)	No. of Distts.	Area (%)	No. of Distts.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	1000-2000	-	-	15.7	3	-	-
2	2000-3000	41.8	4	43.6	10	57.8	11
3	3000-4000	31	7	25.8	5	40.2	7
4	4000-5000	12.3	3	6.6	1	-	-
5	5000-6000	11.3	2	-	-	-	-
Summary Indicators of Land Productivity	Total Area ('000 ha)	958		670		1347	
	Max Yield (Kgs/Ha.)	5635		4015		3634	
	Top 3 distts. In descending order of Yields	Guntur, East Godavari, Prakasham		Saharsa, Madhepura, Supaul		Koppal, Ramanagar, Shimoga	
	Area under top 3 distts (%) (highest yield levels)	13.7		14.8		11.6	
	Minimum Yield. (Kgs/Ha.)	2160		1687		2164	
	Distt. having Min. Yield.	Rangareddy		Saran		Chamarajanagar	
	Share of Area under Min. Yield (%)	5.1		4.2		7.6	
	Average Yield (Kgs/Ha.)	3350		2679		2846	
	Efficiency Gap (%)	41		33		22	

Source : Concerned State Governments

* including Telangana **Bihar Data is for TE 2012-13

Note: Districts with less than 1% share in total production of the state have not been considered

Annex Table-3.2(c): District-wise Productivity Levels of Cotton, TE 2013-14

S.No.	Yield Band (Kgs/Ha.)	AP *		Gujarat		Maharashtra	
		Area (%)	No. of Distts.	Area (%)	No. of Distts.	Area (%)	No. of Distts.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1	200-400	-	-	-	-	94.5	18
2	400-600	57.5	7	26.2	4	4.5	1
3	600-800	29.9	5	46	8	-	-
4	800-1000	7.9	1	26.3	5	-	-
Summary Indicators of Land Productivity	Total Area ('000 ha)	2183		2697		4048	
	Max Yield (Kgs/Ha.)	862		976		500	
	Top 3 distts. In descending order of Yields	Guntur, Prakasham, Krishna		Kutch, Mehsana, Gandhinagar		Amravati, Jalgaon, Hingoli	
	Area under top 3 distts (%) (highest yield levels)	13.6		6.3		20.1	
	Minimum Yield. (Kgs/Ha.)	446		452		244	
	Distt. Having Min. Yield.	Cuddapah		Bharuch		Beed	
	Share of Area under Min. Yield (%)	1.4		4.5		8	
	Average Yield (Kgs/Ha.)	576		675		335	
	Efficiency Gap (%)	33		31		33	

*including Telangana

Note: Districts with less than 1% share in total production of the state have not been considered

Annex Table-3.3: Simulation-Impact of Oil content on MSP of Sunflower

S.N.	Oil Content (%)	Oil Cake(%) {100-col(2)}	Realisation from oil cake on processing of 1 quinal of oilseeds, assuming price of cake/q= Rs. 2290 {col(3)*Price of Oil cake}/100	Cost of Oil Content i.e. oilseeds without cake (Rs/ qtl.), assuming MSP/ qtl.= 3800 MSP-Col(4)	Cost of Oil Content i.e. oilseeds without cake for each 0.25 percent point of oil content (Rs/qtl.) {col(5)/col(2)}*0.25	MSP at Oil Content given in col. (2)[MSP+{Average of col.(6)* percent points of oil content that is over & above 35%}]/(0.25)
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	35.00	65.00	1489	2312	16.51	3800
2	35.25	64.75	1483	2317	16.43	3815
3	35.50	64.50	1477	2323	16.36	3830
4	35.75	64.25	1471	2329	16.28	3845
5	36.00	64.00	1466	2334	16.21	3860
6	36.25	63.75	1460	2340	16.14	3874
7	36.50	63.50	1454	2346	16.07	3889
8	36.75	63.25	1448	2352	16.00	3904
9	37.00	63.00	1443	2357	15.93	3919
10	37.25	62.75	1437	2363	15.86	3934
11	37.50	62.50	1431	2369	15.79	3949
12	37.75	62.25	1426	2374	15.73	3964
13	38.00	62.00	1420	2380	15.66	3979
14	38.25	61.75	1414	2386	15.59	3994
15	38.50	61.50	1408	2392	15.53	4009
16	38.75	61.25	1403	2397	15.47	4023
17	39.00	61.00	1397	2403	15.40	4038
18	39.25	60.75	1391	2409	15.34	4053
19	39.50	60.50	1385	2415	15.28	4068
20	39.75	60.25	1380	2420	15.22	4083
21	40.00	60.00	1374	2426	15.16	4098
22	40.25	59.75	1368	2432	15.10	4113
23	40.50	59.50	1363	2437	15.05	4128
24	40.75	59.25	1357	2443	14.99	4143

Annex Table-3.3: Simulation-Impact of Oil content on MSP of Sunflower

S.N.	Oil Content (%)	Oil Cake(%) {100-col(2)}	Realisation from oil cake on processing of 1 quinal of oilseeds, assuming price of cake/q= Rs. 2290 {col(3)*Price of Oil cake}/100	Cost of Oil Content i.e. oilseeds without cake (Rs/ qtl.), assuming MSP/ qtl.= 3800 MSP-Col(4)	Cost of Oil Content i.e. oilseeds without cake for each 0.25 percent point of oil content (Rs/qtl.) {col(5)/col(2)}*0.25	MSP at Oil Content given in col. (2)[MSP+{Average of col.(6)* percent points of oil content that is over & above 35%}]/(0.25)
25	41.00	59.00	1351	2449	14.93	4158
26	41.25	58.75	1345	2455	14.88	4172
27	41.50	58.50	1340	2460	14.82	4187
28	41.75	58.25	1334	2466	14.77	4202
(1)	(2)	(3)	(4)	(5)	(6)	(7)
30	42.25	57.75	1322	2478	14.66	4232
31	42.50	57.50	1317	2483	14.61	4247
32	42.75	57.25	1311	2489	14.56	4262
33	43.00	57.00	1305	2495	14.50	4277
34	43.25	56.75	1300	2500	14.45	4292
35	43.50	56.50	1294	2506	14.40	4307
36	43.75	56.25	1288	2512	14.35	4321
37	44.00	56.00	1282	2518	14.30	4336
38	44.25	55.75	1277	2523	14.26	4351
39	44.50	55.50	1271	2529	14.21	4366
40	44.75	55.25	1265	2535	14.16	4381
41	45.00	55.00	1260	2541	14.11	4396
42	45.25	54.75	1254	2546	14.07	4411
43	45.50	54.50	1248	2552	14.02	4426
44	45.75	54.25	1242	2558	13.98	4441
45	46.00	54.00	1237	2563	13.93	4456
46	46.25	53.75	1231	2569	13.89	4470
47	46.50	53.50	1225	2575	13.84	4485
48	46.75	53.25	1219	2581	13.80	4500
49	47.00	53.00	1214	2586	13.76	4515
53	48.00	52.00	1191	2609	13.59	4575
Average increase in MSP with 0.25 percent point increase in oil content					14.90	

Annex Table-3.4: Drivers of Productivity of Major Kharif Crops

Crop	Elasticities											
	Gross Returns in preceding year at constant prices (2012-13=100)		Fertiliser (Quantity)		Seed (Quantity)		% Area Irrigated	Monsoon Rainfall	Manure			
(1)	(2)		(3)		(4)		(5)		(6)	(7)		
Paddy	0.11	*	0.22	*			0.2	*		0.1	*	
Maize	0.12	*	0.64	*								
Bajra	0.07	*	0.42	*								
Jowar			0.39	*					0.16	*	0.13	*
Tur	0.2	*						0.08	*	0.29	*	
Moong	0.08	*	0.2	*								
Urad	0.2	*	0.09	*	0.33	*						
Groundnut	0.13	*	0.25	*							0.2	*
Sesamum			0.16	*				0.23	*			
Soyabean									0.34	*		
Sunflower	0.08	*	0.72	*	0.5	*			0.38	*		
Cotton	0.15	*	0.43	*				0.17	*			

Asterisk (*) denote that elasticity is statistically significant at 95% level of confidence.

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

Annex Table - 4.1 : State-wise Gross and Net returns of Kharif crops
(Average of 2010-11 to 2012-13)

(Rs/Ha)

S. No.	State	Cost A ₂	Cost A ₂ +FL	Cost C ₂	GVO	Gross Returns over A ₂		Gross Returns over A ₂ +FL		Net Returns	
						Rs./ha. (Col.6-Col.3)	Percent (Col.7/Col.3*100)	Rs./ha. (Col.6-Col.4)	Percent (Col.9/Col.4*100)	Rs./ha. (Col.6-Col.5)	Percent (Col.11/Col.5*100)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Paddy											
1	Andhra Pradesh	32645	38569	59227	66319	33674	103	27750	72	7091	12
2	Assam	12855	22716	29855	23768	10914	85	1052	5	-6087	-20
3	Bihar	14555	19992	26480	25508	10952	75	5515	28	-973	-4
4	Chhatisgarh	14736	19440	29350	34249	19513	132	14810	76	4899	17
5	Gujarat	25081	28772	39140	53603	28523	114	24831	86	14464	37
6	Haryana	26970	33859	55115	74946	47976	178	41087	121	19831	36
7	Himachal Pradesh	5963	14844	21603	31144	25180	422	16300	110	9541	44
8	Jharkhand	13899	18756	24897	17713	3814	27	-1043	-6	-7184	-29
9	Kerala	36157	38766	53008	70305	34148	94	31540	81	17297	33
10	Karnataka	33089	38753	54306	66228	33140	100	27475	71	11922	22
11	Madhya Pradesh	14445	18979	29867	37713	23268	161	18734	99	7847	26
12	Maharashtra	30198	38158	48953	44929	14731	49	6771	18	-4024	-8
13	Odisha	18213	30032	36651	44828	26615	146	14797	49	8177	22
14	Punjab	28708	33049	56612	76331	47623	166	43283	131	19719	35
15	Tamilnadu	37571	45215	58797	63493	25922	69	18278	40	4696	8
16	Uttar Pradesh	19023	26289	38671	43659	24636	130	17370	66	4987	13
17	Uttarakhand	20473	28441	38914	39528	19055	93	11087	39	614	2
18	West Bengal	26547	37868	49382	43723	17176	65	5855	15	-5659	-11
	All-India	22645	30070	42441	46797	24151	107	16727	56	4356	10

**Annex Table - 4.1 : State-wise Gross and Net returns of Kharif crops
(Average of 2010-11 to 2012-13)**

(Rs/Ha)

S. No.	State	Cost A ₂	Cost A ₂ +FL	Cost C ₂	GVO	Gross Returns over A ₂		Gross Returns over A ₂ +FL		Net Returns	
						Rs./ha. (Col.6-Col.3)	Percent (Col.7/Col.3*100)	Rs./ha. (Col.6-Col.4)	Percent (Col.9/Col.4*100)	Rs./ha. (Col.6-Col.5)	Percent (Col.11/Col.5*100)
Maize											
1	Andhra Pradesh	26535	31349	48295	55738	29203	110	24389	78	7443	15
2	Bihar	16374	19860	26722	45550	29176	178	25690	129	18829	70
3	Chhatisgarh	4878	11357	15423	14269	9391	193	2912	26	-1154	-7
4	Gujarat	17305	22378	27866	24632	7327	42	2254	10	-3234	-12
5	Himachal Pradesh	6969	14739	20893	19548	12579	181	4810	33	-1345	-6
6	Karnataka	19579	23139	33401	40073	20493	105	16933	73	6672	20
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
7	Madhya Pradesh	11319	15693	22721	24528	13209	117	8835	56	1807	8
8	Rajasthan	11473	24026	30297	28759	17286	151	4733	20	-1539	-5
9	Tamilnadu	33603	40608	55176	69404	35801	107	28796	71	14229	26
10	Uttar Pradesh	10311	18097	26530	22822	12511	121	4725	26	-3708	-14
All-India		16253	22491	31492	35357	19104	118	12867	57	3865	12
Jowar											
1	Andhra Pradesh	16155	20736	29766	30341	14186	88	9606	46	576	2
2	Karnataka	9611	12254	17785	19059	9449	98	6805	56	1274	7
3	Maharashtra	18456	22938	32272	31834	13378	72	8896	39	-438	-1
4	Rajasthan	4021	10301	13045	12422	8401	209	2121	21	-623	-5
5	Tamilnadu	10161	13804	19304	22117	11956	118	8313	60	2813	15
6	Madhya Pradesh	9791	13244	18282	16908	7116	73	3664	28	-1374	-8
All-India		14396	19358	27292	27227	12831	89	7869	41	-66	-0.2

**Annex Table - 4.1 : State-wise Gross and Net returns of Kharif crops
(Average of 2010-11 to 2012-13)**

(Rs/Ha)

S.No.	State	Cost A ₂	Cost A ₂ +FL	Cost C ₂	GVO	Gross Returns over A ₂		Gross Returns over A ₂ +FL		Net Returns	
						Rs./ha. (Col.6- Col.3)	Percent (Col.7/ Col.3*100)	Rs./ha. (Col.6- Col.4)	Percent (Col.9/ Col.4*100)	Rs./ha. (Col.6- Col.5)	Percent (Col.11/ Col.5*100)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Bajra											
1	Gujarat	16461	21307	28839	38731	22270	135	17424	82	9892	34
2	Haryana	9000	17409	25744	20364	11365	126	2956	17	-5379	-21
3	Tamilnadu	14307	18398	26089	29283	14976	105	10885	59	3194	12
4	Karnataka	9023	11013	14083	10767	1744	19	-245	-2	-3315	-24
5	Maharashtra	17033	20945	27984	26767	9734	57	5822	28	-1217	-4
6	Rajasthan	5624	11901	15690	15123	9499	169	3221	27	-567	-4
7	Uttar Pradesh	9083	14604	22223	17869	8786	97	3265	22	-4354	-20
All-India		8584	14380	19558	19064	10480	122	4684	33	-494	-3
Ragi											
1	Andhra Pradesh	16517	29490	38597	29359	12841	78	-131	-0	-9239	-24
2	Karnataka	19012	24090	32746	22769	3757	20	-1321	-5	-9976	-30
3	Tamilnadu	13426	26111	30052	43257	29831	222	17146	66	13204	44
4	Maharashtra	15463	21528	33450	22576	7113	46	1048	5	-10874	-33
5	Uttarakhand	18119	36697	42217	28079	9960	55	-8618	-23	-14138	-33
All-India		17935	25070	33446	24761	6826	38	-309	-1	-8685	-26
Tur											
1	Andhra Pradesh	16779	20311	30925	30261	13482	80	9950	49	-664	-2
2	Bihar	6707	7550	15476	27056	20350	303	19506	258	11580	75
3	Gujarat	15391	19056	25620	31822	16431	107	12766	67	6202	24
4	Karnataka	13968	17021	25608	33124	19156	137	16103	95	7516	29
5	Madhya Pradesh	9856	13028	22046	27843	17987	182	14814	114	5797	26
6	Maharashtra	28436	35810	49964	57248	28811	101	21438	60	7284	15
7	Odisha	5634	10648	15908	17758	12123	215	7110	67	1850	12

Annex Table - 4.1 : State-wise Gross and Net returns of Kharif crops (Average of 2010-11 to 2012-13)

(Rs/Ha)

S.No.	State	Cost A ₂	Cost A ₂ +FL	Cost C ₂	GVO	Gross Returns over A ₂		Gross Returns over A ₂ +FL		Net Returns	
						Rs./ha. (Col.6-Col.3)	Percent (Col.7/Col.3*100)	Rs./ha. (Col.6-Col.4)	Percent (Col.9/Col.4*100)	Rs./ha. (Col.6-Col.5)	Percent (Col.11/Col.5*100)
8	Tamilnadu	13275	17289	22668	27804	14529	109	10515	61	5136	23
9	Uttar Pradesh	10748	17939	32512	36064	25316	236	18125	101	3552	11
All-India		18011	23008	34012	39517	21506	119	16509	72	5505	16
Moong											
1	Andhra Pradesh	8189	10765	18116	23115	14926	182	12350	115	4999	28
2	Karnataka	8332	10247	14090	15146	6814	82	4899	48	1056	7
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
3	Maharashtra	17968	22351	28579	25690	7722	43	3339	15	-2889	-10
4	Odisha	5263	9313	13397	13520	8257	157	4207	45	123	1
5	Rajasthan	7853	12894	16615	18660	10807	138	5766	45	2045	12
6	Tamilnadu	11731	14549	18658	20145	8413	72	5596	38	1487	8
All-India		9711	13688	18391	19518	9807	101	5830	43	1126	6
Urad											
1	Andhra Pradesh	15853	17170	28603	37383	21531	136	20214	118	8781	31
2	Chhatisgarh	4608	9841	15883	22785	18178	394	12945	132	6903	43
3	Madhya Pradesh	8950	12286	19236	25621	16672	186	13335	109	6385	33
4	Maharashtra	16477	21015	26117	21586	5109	31	571	3	-4531	-17
5	Odisha	4976	9203	13224	13426	8450	170	4223	46	201	2
6	Rajasthan	7085	15049	20068	22158	15073	213	7109	47	2090	10
7	Tamilnadu	12617	15007	20609	21624	9007	71	6617	44	1016	5
8	Uttar Pradesh	5569	11032	15582	14832	9263	166	3800	34	-750	-5
All-India		9727	14410	20938	23540	13813	142	9130	63	2602	12

**Annex Table - 4.1 : State-wise Gross and Net returns of Kharif crops
(Average of 2010-11 to 2012-13)**

(Rs/Ha)

S.No	State	Cost A ₂	Cost A ₂ +FL	Cost C ₂	GVO	Gross Returns over A ₂		Gross Returns over A ₂ +FL		Net Returns	
						Rs./ha. (Col.6- Col.3)	Percent (Col.7/ Col.3*100)	Rs./ha. (Col.6- Col.4)	Percent (Col.9/ Col.4*100)	Rs./ha. (Col.6- Col.5)	Percent (Col.11/ Col.5*100)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Groundnut											
1	Andhra Pradesh	35119	41501	66650	76625	41506	118	35125	85	9975	15
2	Gujarat	26577	31986	41586	49562	22985	86	17576	55	7976	19
3	Karnataka	20648	25041	33344	32307	11659	56	7266	29	-1037	-3
4	Maharashtra	31297	39747	53574	65871	34574	110	26125	66	12297	23
5	Odisha	16885	27272	40886	50483	33598	199	23211	85	9597	23
6	Tamilnadu	28825	39067	49038	52058	23233	81	12991	33	3020	6
All-India		28612	34850	49425	56513	27901	98	21664	62	7088	14
Soyabean											
1	Chhatisgarh	10848	12522	18576	19956	9108	84	7434	59	1380	7
2	Madhya Pradesh	12763	15936	25390	34071	21308	167	18134	114	8680	34
3	Maharashtra	21238	24280	32663	38567	17329	82	14287	59	5904	18
4	Rajasthan	10121	14198	21616	31626	21504	212	17427	123	10009	46
All-India		15142	18342	27250	35121	19979	132	16779	91	7871	29
Sunflower											
1	Andhra Pradesh	19340	23223	32768	30378	11038	57	7154	31	-2391	-7
2	Karnataka	10532	12219	16517	17162	6630	63	4943	40	645	4
3	Maharashtra	16740	20032	27177	34826	18086	108	14794	74	7649	28
All-India		13828	16343	22461	23613	9785	71	7270	44	1152	5
Sesamum											
1	Andhra Pradesh	9245	12218	18090	18010	8764	95	5792	47	-80	-0.4
2	Gujarat	11818	16614	21934	29209	17390	147	12595	76	7275	33
3	Madhya Pradesh	7824	13116	21996	32781	24958	319	19665	150	10785	49
4	Odisha	5366	9102	12882	12252	6886	128	3150	35	-631	-5
5	Rajasthan	4346	9093	13025	16406	12060	277	7313	80	3381	26
6	Tamilnadu	12714	18699	26604	30800	18086	142	12100	65	4196	16

Annex Table - 4.1 : State-wise Gross and Net returns of Kharif crops
(Average of 2010-11 to 2012-13)

(Rs/Ha)

S.No	State	Cost A ₂	Cost A ₂ +FL	Cost C ₂	GVO	Gross Returns over A ₂		Gross Returns over A ₂ +FL		Net Returns	
						Rs./ha. (Col.6- Col.3)	Percent (Col.7/ Col.3*100)	Rs./ha. (Col.6- Col.4)	Percent (Col.9/ Col.4*100)	Rs./ha. (Col.6- Col.5)	Percent (Col.11/ Col.5*100)
7	West Bengal	14427	19763	26591	25541	11114	77	5777	29	-1050	-4
All-India		8078	12880	18396	22790	14712	182	9911	77	4395	24
Nigerseed											
1	Odisha	5440	9632	13627	12998	7558	139	3366	35	-629	-5
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
All-India		5440	9632	13627	12998	7558	139	3366	35	-629	-5
Cotton											
1	Andhra Pradesh	33820	39527	60548	63972	30152	89	24445	62	3424	6
2	Gujarat	30934	39298	55511	79425	48491	157	40127	102	23914	43
3	Haryana	23131	37316	58758	74926	51795	224	37610	101	16167	28
4	Karnataka	23231	27304	41570	57247	34016	146	29942	110	15677	38
5	Madhya Pradesh	15467	21916	39319	63251	47785	309	41335	189	23932	61
6	Maharashtra	38517	46044	61857	65176	26659	69	19132	42	3319	5
7	Odisha	21933	30332	43477	48978	27045	123	18646	61	5502	13
8	Punjab	33974	39641	66485	79381	45408	134	39740	100	12896	19
9	Rajasthan	16966	33544	51986	96882	79915	471	63338	189	44896	86
10	Tamilnadu	31916	48851	63662	65368	33452	105	16517	34	1706	3
All-India		32098	39983	57666	70400	38301	119	30417	76	12734	22

Source: DES, Ministry of Agriculture

(concluded)

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

(Rupees)

S. No.	Daily Wage Rates	A. P.	Assam	Bihar	Gujarat	Hary-ana	H. P.	Karna-taka	Kerala	M. P.	Maha.	Odis-ha	Punjab	Rajast-han	T. N.	U. P.	W. B.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1	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
2	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
3	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
4	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
5	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
6	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
7	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
8	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
9	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
10	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
11	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
12	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
13	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
14	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
15	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
16	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
17	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
18	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
19	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
20	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

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

(Rupees)

S. No.	Daily Wage Rates	A. P.	Assam	Bihar	Gujarat	Hary-ana	H. P.	Karna-taka	Kerala	M. P.	Maha.	Odis-ha	Punjab	Rajast-han	T. N.	U. P.	W. B.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
21	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
22	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
23	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
24	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
25	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
26	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
27	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
28	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
29	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
30	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
31	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
32	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
33	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
34	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
35	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
36	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
37	January, 2013	224.26	146.42	161.97	129.99	245.55	272.62	183.94	464.62	125.98	186.26	136.32	257.00	218.59	253.30	162.62	178.46
38	February	227.65	156.95	164.48	129.99	245.40	259.44	188.46	464.62	125.96	192.02	133.65	260.00	204.32	259.05	164.78	180.34
39	March	221.04	153.73	166.36	133.29	245.40	259.44	189.41	461.29	129.92	194.17	136.46	260.00	207.64	264.83	165.99	181.05
40	April	229.93	153.47	166.82	130.44	247.27	263.89	191.98	478.49	135.17	195.08	136.90	283.75	216.93	264.88	168.32	182.33
41	May	222.85	150.01	167.22	130.93	244.86	266.25	192.39	489.16	137.83	197.24	141.25	272.78	243.76	265.94	169.44	184.85

Annex Table - 4.2 : Month-wise average daily wage rates for Agricultural Labour (Man)

S. No.	Daily Wage Rates	A. P.	As-sam	Bihar	Gujarat	Haryana	H. P.	Karnataka	Kerala	M. P.	Maha.	Odisha	Punjab	Rajasthan	T. N.	U. P.	W. B.
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
42	June	222.49	161.60	168.20	132.37	244.08	262.08	195.90	483.38	133.58	188.88	142.89	289.67	235.19	271.17	173.03	185.29
43	July	220.65	178.20	174.73	136.24	258.41	263.29	203.31	485.38	132.06	201.20	150.42	290.71	220.31	272.10	173.80	197.76
44	August	210.11	182.83	176.74	136.95	316.60	283.89	209.85	486.98	133.33	200.22	156.81	279.00	214.75	274.73	180.69	199.55
45	September	212.88	177.53	175.73	138.19	312.05	289.72	211.94	490.15	137.61	196.04	149.82	283.18	219.08	284.48	180.58	200.43
46	October	211.95	174.84	175.32	138.80	311.78	297.50	212.64	487.42	143.97	199.04	155.72	282.50	228.83	293.65	179.78	199.43
47	November	246.95	183.60	205.40	141.53	328.19	337.28	235.15	584.90	140.30	220.62	196.40	285.01	248.47	330.03	191.90	224.35
48	December	241.57	180.72	190.60	164.65	324.54	355.89	227.97	580.47	150.89	215.90	179.45	277.90	246.96	352.07	185.82	228.95
49	January, 2014	229.41	182.19	194.48	171.76	319.82	335.55	236.94	580.47	154.87	214.86	177.92	276.48	262.19	355.05	191.31	229.22
50	February	225.90	187.58	200.32	172.46	329.44	335.55	240.24	628.84	158.03	213.94	179.74	275.36	250.74	362.46	191.35	229.73
51	March	221.77	189.42	201.92	175.46	333.44	341.11	242.86	593.63	161.12	218.68	163.91	279.29	269.60	355.74	194.60	222.69
52	April	221.62	198.60	203.83	178.54	335.00	352.22	240.30	593.63	163.25	222.96	160.24	305.63	290.57	360.78	200.62	226.35
53	May	224.60	203.47	206.17	178.54	345.56	334.58	241.69	593.63	164.72	223.23	172.95	307.06	283.45	364.12	202.26	224.89
54	June	217.26	204.06	206.90	178.65	347.38	340.55	240.90	593.63	164.47	230.36	191.15	304.28	280.20	361.98	198.90	226.92
55	July	230.29	208.23	217.58	185.45	345.24	345.31	240.96	598.84	172.56	224.55	200.97	301.68	320.16	372.06	199.98	225.66
56	August	225.57	220.14	220.18	190.24	348.46	342.61	241.31	598.84	172.69	226.17	208.40	304.19	304.59	371.10	202.11	230.34
57	September	239.34	225.18	220.36	190.23	349.82	342.93	241.83	585.81	179.80	222.16	204.31	310.04	295.88	417.20	197.95	233.76
58	October	241.45	225.96	222.06	197.99	353.74	338.92	241.61	586.26	171.23	222.39	201.94	310.04	296.76	411.64	200.91	236.53
59	November	247.01	237.90	220.38	197.99	357.07	330.40	243.84	597.03	170.33	222.85	199.58	311.96	305.49	421.45	199.10	235.61

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

(concluded)

Notes: 1. Daily Wage rate - average of five operations i.e. Ploughing, Sowing, Weeding, Transplanting and Harvesting

2. Due to non-availability of data for the month of September 2013 and November 2013 in Punjab, average of preceding 5 months has been considered.

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

S.No.	Month/Year	Fertilisers	Electricity (Irrigation)	Pesticides	Non-electrical Machinery	Tractors	Lubricants	High Speed Diesel (HSD)	Fodder	Cattle Feed
Annual Average (July - June)		(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1	2011-12	137.2	136.8	116.0	123.7	137.9	235.3	167.8	195.9	190.3
2	2012-13	151.1	170.9	122.2	123.0	142.7	248.3	192.7	237.8	220.0
3	2013-14	153.0	206.4	128.4	124.4	147.3	262.1	224.9	281.6	248.7
4	2014-15*	154.7	211.4	136.3	127.3	151.9	272.7	231.2	304.4	262.1
2010										
5	January	108.9	117.4	110.2	117.7	123.5	174.5	133.9	182.3	173.1
6	February	109.0	117.4	110.2	118.0	123.5	174.5	136.6	176.5	175.6
7	March	109.8	117.4	111.8	118.6	123.7	174.5	144.6	199.1	175.8
8	April	114.6	117.4	114.6	118.8	123.5	174.5	145.6	182.2	177.0
9	May	115.2	126.2	113.6	117.6	123.9	194.2	145.6	165.2	177.0
10	June	115.3	126.2	113.6	117.8	124.0	194.2	147.4	171.3	177.0
11	July	115.3	126.2	113.4	117.9	124.0	194.2	153.5	173.4	177.6
12	August	116.5	126.2	113.3	117.9	124.0	194.2	153.5	180.7	177.8
13	September	116.5	126.2	113.4	118.0	124.2	194.2	153.5	186.5	178.0
14	October	116.3	126.2	113.7	118.0	125.0	194.2	153.5	192.7	178.2
15	November	116.6	126.2	114.0	118.2	125.6	194.2	153.6	190.7	178.6
16	December,2010	116.3	126.2	113.9	118.1	125.6	194.2	153.6	190.1	178.5
2011										
17	January	117.8	128.1	112.9	121.0	128.0	194.2	153.6	193.9	181.3
18	February	120.3	128.1	113.1	122.9	128.3	194.2	153.6	198.5	181.4
19	March	120.7	128.1	113.9	123.2	128.9	194.2	153.6	205.8	180.5
20	April	122.9	128.1	114.1	123.6	131.4	214.0	153.6	200.6	183.8
21	May	125.2	128.1	113.9	123.1	134.8	220.8	153.6	176.8	181.2
22	June	125.7	128.1	113.8	123.5	134.8	220.8	157.1	179.5	180.0
23	July	127.0	128.1	114.5	123.5	136.0	221.8	167.8	182.7	184.9

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

S.No.	Month/Year	Fertilisers	Electricity (Irrigation)	Pesticides	Non-electrical Machinery	Tractors	Lubricants	High Speed Diesel (HSD)	Fodder	Cattle Feed
	Annual Average (July - June)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
24	August	127.9	128.1	114.6	123.5	136.4	231.2	167.8	188.2	186.3
25	September	130.4	133.8	114.8	123.8	137.2	236.6	167.8	189.8	186.4
26	October	134.9	135.7	114.6	124.2	137.5	236.6	167.8	191.2	186.4
27	November	137.6	135.7	114.6	125.9	137.8	236.6	167.8	196.9	186.2
28	December,2011	138.7	135.7	115.3	125.8	137.8	236.6	167.8	198.9	186.2
2012										
29	January	139.5	135.7	115.9	123.6	137.9	236.6	167.8	198.5	187.3
30	February	140.1	135.7	115.9	124.0	138.0	236.6	167.8	197.4	191.8
31	March	141.1	135.7	116.2	122.8	138.4	236.6	167.8	202.2	197.3
32	April	142.3	135.7	118.9	122.1	138.3	236.6	167.8	205.7	195.4
33	May	142.4	135.7	118.7	122.6	138.3	236.6	167.8	203.4	195.6
34	June	144.3	166.3	117.9	122.6	140.7	241.4	167.8	196.0	199.7
35	July	148.3	166.3	120.4	122.7	140.7	241.4	167.8	208.4	199.7
36	August	149.1	166.3	121.0	122.9	140.9	241.4	168.6	217.8	199.7
37	September	150.5	166.3	122.1	122.9	141.2	241.4	182.8	228.1	201.8
38	October	150.7	166.3	122.1	123.0	141.5	241.4	192.3	236.1	209.3
39	November	151.0	166.3	122.1	123.1	142.4	241.4	192.3	239.6	214.3
40	December,2012	152.1	166.3	122.3	123.0	143.7	253.3	192.3	237.5	225.2
2013										
41	January	152.6	166.3	123.0	123.0	143.7	253.3	198.8	241.9	225.2
42	February	152.5	166.3	122.9	123.5	143.7	253.3	202.7	246.2	231.1
43	March	152.3	166.3	122.5	123.1	143.7	253.3	201.7	250.4	232.2
44	April	152.4	184.8	122.0	123.0	143.7	253.3	202.3	246.0	233.8
45	May	151.5	184.8	123.0	122.9	143.7	253.3	203.4	244.2	233.3
46	June	150.5	184.8	123.5	122.9	143.7	253.3	207.0	257.1	234.1

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

S.No.	Month/Year	Fertilisers	Electricity (Irrigation)	Pesticides	Non-electrical Machinery	Tractors	Lubricants	High Speed Diesel (HSD)	Fodder	Cattle Feed
	Annual Average (July - June)	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
47	July	151.5	184.8	123.6	123.1	143.7	253.3	212.0	265.3	238.2
48	August	152.0	203.0	124.5	123.8	143.8	253.3	215.4	267.6	237.7
49	September	152.4	206.9	125.7	123.9	144.3	263.9	219.8	270.1	238.8
50	October	152.7	209.1	127.7	124.1	144.7	263.9	220.4	270.7	238.4
51	November	152.8	209.1	127.9	124.1	144.7	263.9	222.4	274.1	239.0
52	December, 2013	152.6	205.5	127.5	124.3	145.0	263.9	225.0	278.3	246.6
2014										
53	January	153.0	205.5	127.2	124.3	149.0	263.9	226.6	285.5	244.9
54	February	152.9	205.5	128.2	124.4	149.6	263.9	228.6	299.0	251.4
55	March	153.1	211.3	130.5	124.4	150.1	263.9	231.2	316.8	259.4
56	April	154.4	212.1	130.6	124.5	150.8	263.9	230.1	296.5	263.4
57	May	154.3	212.1	131.7	124.5	150.8	263.9	232.3	275.6	263.7
58	June	154.2	212.1	135.2	126.8	150.9	263.9	235.2	280.0	262.8
59	July	154.4	211.3	135.4	127.3	151.4	263.9	238.8	277.6	262.8
60	August	154.2	211.3	135.4	127.1	151.5	263.9	240.4	285.9	262.8
61	September	154.6	211.5	137.2	127.2	152.0	275.2	242.0	308.4	262.2
62	October	154.4	211.5	135.5	127.2	151.9	277.8	239.2	313.5	262.8
63	November	155.4	211.5	136.7	127.3	152.2	277.8	215.8	318.3	260.7
64	December, 2014	155.2	211.5	137.6	127.4	152.2	277.8	210.8	322.4	261.2
% change of Dec., 2014 over Dec., 2013		1.7	2.9	7.9	2.5	5.0	5.3	-6.3	15.8	5.9

* For the year 2014-15 average is from July, 2014 to December, 2014

(concluded)

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

Annex Table - 4.4 : Projected Cost of Production (A_2 , A_2+FL & C_2) for Kharif 2015-16 and Production Shares

S.No.	States	Cost of Production (Rs./qtl.)			Shares in Production(%)
		A_2	A_2+FL	C_2	
(1)	(2)	(3)	(4)	(5)	(6)
Paddy					
1	Andhra Pradesh	854	999	1351	12
2	Assam	586	1027	1254	5
3	Bihar	765	1047	1280	7
4	Chhattisgarh	625	816	1122	6
5	Gujarat	724	817	1047	2
6	Haryana	746	978	1449	4
7	Himachal Pradesh	303	752	992	1
8	Jharkhand	1112	1485	1823	3
9	Karnataka	835	892	1168	4
10	Kerala	1032	1094	1403	1
11	Madhya Pradesh	608	794	1151	3
12	Maharashtra	1343	1687	2007	3
13	Odisha	729	1067	1359	7
14	Punjab	556	637	998	11
15	Tamil Nadu	899	1065	1321	6
16	Uttar Pradesh	737	1001	1299	14
17	Uttarakhand	730	996	1269	1
18	West Bengal	891	1256	1516	14
All-India		780	1020	1324	
Jowar					
1	Andhra Pradesh	957	1229	1791	9
2	Karnataka	1421	1789	2306	26
3	Madhya Pradesh	760	1022	1322	10
4	Maharashtra	1169	1430	1886	48
5	Tamil Nadu	1098	1467	1859	6
All-India		1170	1467	1929	

Annex Table - 4.4 : Projected Cost of Production (A_2 , A_2+FL & C_2) for Kharif 2015-16 and Production Shares

S.No.	States	Cost of Production (Rs./qtl.)			Shares in Production(%)
		A_2	A_2+FL	C_2	
(1)	(2)	(3)	(4)	(5)	(6)
Bajra					
1	Gujarat	695	879	1107	13
2	Haryana	492	939	1305	11
3	Karnataka	1271	1558	1855	3
4	Maharashtra	913	1119	1397	8
5	Rajasthan	417	869	1098	46
6	Uttar Pradesh	452	727	1018	19
All-India		535	893	1154	
Maize					
1	Andhra Pradesh	651	763	1098	25
2	Bihar	627	765	918	11
3	Chhattisgarh	431	1009	1267	1
4	Gujarat	854	1072	1277	4
5	Himachal Pradesh	594	1232	1556	4
6	Karnataka	824	964	1255	22
7	Madhya Pradesh	588	852	1137	8
8	Rajasthan	615	1267	1495	9
9	Tamil Nadu	772	915	1175	8
10	Uttar Pradesh	730	1250	1640	7
All-India		696	941	1223	
Ragi					
1	Andhra Pradesh	1090	2119	2596	2
2	Karnataka	1306	1742	2148	73
3	Maharashtra	1367	2158	2554	9
4	Tamil Nadu	762	1435	1748	15
All-India		1196	1688	2069	

Annex Table - 4.4 : Projected Cost of Production (A_2 , A_2+FL & C_2) and Production Shares, KMS 2015-16

S.No.	States	Cost of Production (Rs./qtl.)			Shares in Production (%)
		A_2	A_2+FL	C_2	
(1)	(2)	(3)	(4)	(5)	(6)
Tur					
1	Andhra Pradesh	2693	3196	4482	8
2	Bihar	1350	1474	2491	2
3	Gujarat	2425	2983	3663	9
4	Karnataka	2550	3176	4149	16
5	Madhya Pradesh	1714	2300	3397	14
6	Maharashtra	3064	3949	4877	35
7	Odisha	1982	3722	4925	4
8	Uttar Pradesh	1895	3044	4598	11
All-India		2453	3237	4272	
Moong					
1	Andhra Pradesh	2096	2859	4233	18
2	Karnataka	2862	3497	4630	7
3	Maharashtra	3514	4316	5241	24
4	Odisha	2087	3639	4897	8
5	Rajasthan	2620	4426	5318	43
All-India		2714	3993	5025	
Urad					
1	Andhra Pradesh	1992	2131	3323	23
2	Chhatisgarh	980	2103	3033	2
3	Madhya Pradesh	1425	1958	2786	17
4	Maharashtra	4687	5863	6764	15
5	Odisha	1620	2970	3975	2
6	Rajasthan	1696	3569	4425	8
7	Tamil Nadu	3435	4104	5194	10
8	Uttar Pradesh	2571	4140	5279	23
All-India		2529	3455	4483	
Groundnut					

Annex Table - 4.4 : Projected Cost of Production (A_2 , A_2+FL & C_2) and Production Shares, KMS 2015-16

S.No.	States	Cost of Production (Rs./qtl.)			Shares in Production (%)
		A_2	A_2+FL	C_2	
(1)	(2)	(3)	(4)	(5)	(6)
1	Andhra Pradesh	2386	2770	4018	19
2	Gujarat	2606	3314	4061	49
3	Karnataka	3412	4024	5276	9
4	Maharashtra	1201	2882	3659	6
5	Tamil Nadu	2839	3745	4460	16
6	Odisha	1678	2663	3381	1
All-India		2584	3314	4195	
Soyabean					
1	Madhya Pradesh	1041	1296	1939	53
2	Maharashtra	2279	2390	3061	37
3	Rajasthan	1361	2001	2597	10
All-India		1527	1770	2418	
Sunflower					
1	Andhra Pradesh	2545	3023	4005	26
2	Karnataka	3077	3503	4299	63
3	Maharashtra	2220	2619	3285	11
All-India		2846	3282	4114	
Sesamum					
1	Gujarat	3754	5272	6487	21
2	Odisha	2189	3712	4927	1
3	Rajasthan	1798	3628	4884	28
4	Tamil Nadu	3210	4713	6119	6
5	West Bengal	2860	3838	4643	44
All-India		2765	4132	5189	
Nigerseed					
1	Odisha	2119	3146	4068	100
All-India		2119	3146	4068	

Note:- Projected cost is exclusive of cost of marketing, transportation and crop insurance premium

(concluded)

Annex Table - 4.5(a) : Paddy - Break-up of Cost of Cultivation

(Rs/Ha)

S.No.	Cost Items	Kerala	Madhya Pradesh	Maharashtra	Odisha	Punjab	Tamil Nadu	Uttar Pradesh	Uttarakhand	West Bengal									
(1)	(2)	2012-13 (21)	2011-12 (22)	2012-13 (23)	2011-12 (24)	2012-13 (25)	2011-12 (26)	2012-13 (27)	2011-12 (28)	2012-13 (29)	2011-12 (30)	2012-13 (31)	2011-12 (32)	2012-13 (33)	2011-12 (34)	2012-13 (35)	2011-12 (36)	2012-13 (37)	2011-12 (38)
Operational Cost																			
Human Labour																			
1	Casual	20215.88	17947.02	3089.85	3379.74	13363.55	10269.67	8645.43	7296.45	6805.87	6514.73	13768.63	12430.70	5307.69	4824.51	7159.41	6213.19	13010.57	12911.69
2	Attached	0.00	0.00	49.48	40.27	372.77	101.64	193.80	143.48	1359.45	1013.18	462.61	345.14	37.70	38.19	10.65	80.04	30.53	31.18
3	Family	2208.50	2827.56	5825.23	4291.75	9337.56	8654.27	11069.96	9154.43	5155.49	4589.49	8130.46	8540.97	8231.21	7839.65	10881.03	8847.60	13603.43	10370.70
4	Total	22424.38	20774.58	8964.56	7711.76	23073.88	19025.58	19909.19	16594.36	13320.81	12117.40	22361.70	21316.81	13576.60	12702.35	18051.09	15140.83	26644.53	23313.57
Bullock Labour																			
5	Hired	296.85	351.33	131.45	285.05	735.42	457.69	274.11	285.50	2.94	2.08	209.01	244.33	32.88	39.86	4347.78	1463.64	482.04	388.28
6	Owned	0.00	11.67	1962.17	2150.41	5159.46	5644.35	3528.65	3636.25	42.89	42.22	80.91	62.00	1414.88	1688.96	160.09	438.95	1919.68	1669.17
7	Total	296.85	363.00	2093.62	2435.46	5894.88	6102.04	3802.76	3921.75	45.83	44.30	289.92	306.33	1447.76	1728.82	4507.87	1902.59	2401.72	2057.45
Machine Labour																			
8	Hired	9268.51	7814.45	3442.48	2208.33	3112.69	2954.84	1404.14	1129.23	2932.88	2954.37	8868.69	7688.29	3097.30	2829.24	1653.03	1367.70	2337.31	2552.04
9	Owned	19.80	23.15	269.35	252.29	41.34	217.61	36.57	47.09	2165.56	1417.96	298.32	347.79	236.88	226.46	554.82	1162.80	17.92	7.94
10	Total	9288.31	7837.60	3711.83	2460.62	3154.03	3172.45	1440.71	1176.32	5098.44	4372.33	9167.01	8036.08	3334.18	3055.70	2207.85	2530.50	2355.23	2559.98
11	Seed	2326.53	1882.46	1888.93	1269.73	1271.70	1486.96	1063.50	1041.64	1509.04	1328.31	5527.64	5445.76	2568.18	2745.99	2605.89	2715.83	1641.73	1387.54
Fertilisers and Manure																			
12	Fertilisers	5248.54	3747.44	3423.41	2105.14	2607.16	2012.21	2487.74	1758.41	3739.91	3140.28	6650.15	4982.64	3697.73	3358.82	2610.86	2389.15	4066.65	3051.57
13	Manure	1496.55	1135.18	1178.96	942.82	1874.95	1193.40	1426.17	1166.49	389.93	194.64	2078.68	2254.20	73.47	171.22	906.39	918.79	1049.32	815.12
14	Total	6745.09	4882.62	4602.37	3047.96	4482.11	3205.61	3913.91	2924.90	4129.84	3334.92	8728.83	7236.84	3771.20	3530.04	3517.25	3307.94	5115.97	3866.69
Other Inputs																			
15	Insecticides	1409.12	1066.10	700.35	400.52	389.43	410.62	50.32	59.74	3159.29	2672.43	1209.09	1093.16	265.66	152.57	460.17	619.21	567.24	671.38
16	Irrigation charges	315.69	278.33	29.51	0.00	133.78	216.77	79.81	169.13	2638.32	2029.04	1599.03	1299.36	2953.58	2556.78	1087.69	1008.34	2006.76	1904.58
17	Interest on working capital	1268.68	1070.54	506.01	407.46	908.20	780.18	599.85	523.12	773.64	667.00	1275.47	1131.08	615.19	582.27	674.59	575.09	848.54	795.14
18	Miscellaneous	0.37	0.00	26.48	4.33	0.00	0.00	5.00	6.48	10.25	34.82	62.18	1.21	0.02	0.06	30.15	25.39	23.54	54.14
Fixed Cost																			
19	Rental value of owned land	16718.06	14022.35	11700.27	9036.23	9180.72	6892.35	9972.69	7012.32	24826.00	19744.11	10208.83	9927.10	10940.91	9345.55	6538.65	9683.61	11785.82	9545.49
20	Rent paid for leased-in land	4.42	0.00	0.00	0.00	0.00	0.00	151.29	186.61	6166.85	4334.12	556.78	275.13	204.06	440.58	2859.44	0.00	435.78	620.24
21	Land revenue, cesses & taxes	112.21	82.02	2.94	3.41	21.46	21.46	27.71	31.48	0.00	0.00	6.92	7.02	4.94	4.40	1.05	2.38	48.32	46.86
22	Depreciation on implements & Farm buildings	221.55	319.94	575.49	546.57	832.70	831.52	679.20	607.62	251.65	314.06	372.48	304.77	695.61	647.89	515.65	555.21	680.87	682.21
23	Interest on fixed capital	273.13	393.57	1663.72	1811.13	3279.88	3191.21	1965.71	1717.03	2813.28	2821.09	4625.14	3386.40	3189.97	2653.68	1173.93	1489.28	1426.74	1637.72
Total Cost		61404.39	52973.11	36466.08	29135.18	52622.77	45336.75	43661.65	35972.50	64743.24	53813.93	65991.02	59767.05	43567.86	40146.68	44231.27	39556.20	55982.79	49142.99

(concluded)

Source: DES

Annex Table - 4.5(b) : Jowar - Break-up of Cost of Cultivation

(Rs/Ha)

S.No.	Cost Items	Andhra Pradesh		Karnataka		Madhya Pradesh		Maharashtra		Tamil Nadu	
		2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Operational Cost											
Human Labour											
1	Casual	5385.27	5564.29	3806.95	4113.48	2571.32	1761.31	7213.64	5752.14	5026.39	5809.54
2	Attached	11.12	2.55	1.32	8.37	12.11	14.21	466.05	855.01	82.64	46.03
3	Family	5428.23	4148.81	3023.32	2970.25	2916.05	2820.78	4371.83	5305.23	3927.57	3921.59
4	Total	10824.62	9715.65	6831.59	7092.10	5499.48	4596.30	12051.52	11912.38	9036.60	9777.16
Bullock Labour											
5	Hired	684.90	632.81	862.58	485.82	4.76	0.00	1326.18	374.01	148.90	101.02
6	Owned	2665.32	2288.36	745.75	1659.76	810.81	508.72	4078.85	4154.87	0.00	48.22
7	Total	3350.22	2921.17	1608.33	2145.58	815.57	508.72	5405.03	4528.88	148.90	149.24
Machine Labour											
8	Hired	2500.39	1711.84	2225.88	1441.64	2985.29	3075.62	2483.62	2501.65	2463.31	2193.15
9	Owned	2.90	6.01	149.34	103.58	10.03	0.00	124.55	39.98	11.51	1.59
10	Total	2503.29	1717.85	2375.22	1545.22	2995.32	3075.62	2608.17	2541.63	2474.82	2194.74
11	Seed	511.32	695.64	482.86	567.14	1239.41	1093.79	600.28	772.98	1523.18	669.29
Fertilisers and Manure											
12	Fertilisers	2252.71	1944.99	1439.66	1589.33	2633.11	1103.35	1474.25	1539.10	122.14	557.27
13	Manure	316.26	50.41	120.61	115.15	270.59	269.91	1219.88	112.17	684.57	461.32
14	Total	2568.97	1995.40	1560.27	1704.48	2903.70	1373.26	2694.13	1651.27	806.71	1018.59
Other Inputs											
15	Insecticides	474.31	453.78	36.10	14.93	310.90	318.90	18.31	5.95	0.00	59.33
16	Irrigation charges	820.24	846.44	131.10	97.46	0.00	0.00	1192.41	1550.25	57.18	382.41
17	Interest on working capital	488.34	443.83	312.57	318.65	339.01	254.56	633.71	551.82	316.24	322.79
18	Miscellaneous	2.21	5.46	0.00	0.00	0.00	0.00	80.60	0.00	0.00	0.00
Fixed Cost											
19	Rental value of owned land	10640.37	9870.14	5090.96	7560.42	6037.81	4885.70	10453.52	11229.31	7531.72	5820.04
20	Rent paid for leased-in land	9165.95	8227.12	3784.33	5898.85	4857.12	3930.53	4346.57	6559.36	6020.98	4451.14
21	Land revenue, cesses & taxes	0.00	0.00	0.00	0.00	0.00	0.00	56.56	50.95	0.00	0.00
22	Depreciation on implements & Farm buildings	0.43	0.76	6.02	9.14	3.21	2.08	19.74	22.93	8.50	10.57
23	Interest on fixed capital	351.85	385.04	147.76	239.55	318.95	299.15	724.68	561.01	280.60	182.28
Total Cost											
		32183.89	28665.36	18429.00	21045.98	20141.20	16106.85	35737.68	34744.47	21895.35	20393.59

Source: DES

Annex Table - 4.5(c) : Bajra - Break-up of Cost of Cultivation

S.No.	Cost Items	(Rs/Ha)															
		Gujarat		Haryana		Karnataka		Maharashtra		Rajasthan		Tamil Nadu		Uttar Pradesh			
(1)	(2)	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	(15)	(16)
Operational Cost		24437.49	22984.96	19901.07	17182.64	12452.74	11176.13	21481.03	21726.25	13398.70	12793.19	19742.67	16405.26	15450.51	13657.94		
Human Labour																	
1	Casual	6230.33	5841.77	1023.02	2458.42	3748.79	3013.57	6825.50	7029.35	1756.26	2102.63	6972.44	7377.86	4485.75	2152.41		
2	Attached	83.83	6.22	80.09	192.98	0.00	0.00	294.14	452.56	13.84	71.59	0.00	0.00	0.00	0.00		
3	Family	5588.45	5444.16	10887.00	7675.65	2059.91	2399.40	3622.58	3383.42	7343.08	6732.81	4687.88	3494.74	5140.03	5864.41		
4	Total	11902.61	11292.15	11990.11	10327.05	5808.70	5412.97	10742.22	10865.33	9113.18	8907.03	11660.32	10872.60	9625.78	8016.82		
Bullock Labour																	
5	Hired	328.20	521.67	0.58	1.75	600.50	555.80	409.25	435.05	72.00	20.44	0.00	190.18	0.00	0.00		
6	Owned	822.47	597.08	445.37	270.18	1105.47	1133.60	2575.60	1400.11	48.94	104.75	0.00	0.00	84.96	165.24		
7	Total	1150.67	1118.75	445.95	271.93	1705.97	1689.40	2984.85	1835.16	120.94	125.19	0.00	190.18	84.96	165.24		
Machine Labour																	
8	Hired	3323.13	3043.47	3893.95	3394.77	1938.31	1226.78	3268.81	4170.23	2086.07	2219.75	2546.32	1978.66	3498.70	2917.45		
9	Owned	367.73	231.11	785.09	768.05	33.75	152.93	179.32	829.32	102.47	89.08	0.00	272.19	53.51	159.83		
10	Total	3690.86	3274.58	4679.04	4162.82	1972.06	1379.71	3448.13	4999.55	2188.54	2308.83	2546.32	2250.85	3552.21	3077.28		
11	Seed	1625.70	1278.97	803.41	698.96	815.63	695.56	748.49	714.10	723.96	636.68	1166.24	520.10	743.26	685.65		
Fertilisers and Manure																	
12	Fertilisers	2439.45	2579.99	1207.37	1091.40	1260.14	1345.08	2551.93	1292.32	488.95	342.41	2675.42	1281.62	775.89	1050.56		
13	Manure	609.95	493.95	0.00	0.00	504.81	283.06	0.00	451.69	308.02	235.34	470.71	528.48	0.00	0.00		
14	Total	3049.40	3073.94	1207.37	1091.40	1764.95	1628.14	2551.93	1744.01	796.97	577.75	3146.13	1810.10	775.89	1050.56		
Other Inputs																	
15	Insecticides	23.68	17.70	24.77	3.34	0.00	0.00	0.00	0.00	0.00	1.36	249.52	122.73	3.82	0.00		
16	Irrigation charges	2423.38	2397.33	477.27	339.05	70.50	104.39	464.25	1012.26	271.61	52.70	517.93	247.47	352.15	426.22		
17	Interest on working capital	571.19	531.54	273.15	288.09	314.93	265.96	541.16	555.84	183.50	183.65	456.21	391.23	312.44	236.17		
18	Miscellaneous	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		
Fixed Cost																	
19	Rental value of owned land	9949.67	8017.96	10549.23	7707.26	3216.46	3270.86	9305.42	6940.56	4538.52	4074.72	10038.96	5991.06	10057.30	7608.90		
20	Rent paid for leased-in land	640.77	256.26	0.00	0.00	0.00	0.00	0.00	0.00	12.25	0.00	156.38	0.00	194.15	0.00		
21	Land revenue, cesses & taxes	3.86	4.92	0.00	0.00	4.30	7.15	20.96	22.15	4.38	4.08	8.24	6.26	2.78	3.48		
22	Depreciation on implements & Farm buildings	122.67	161.40	464.28	224.31	107.17	123.23	476.40	389.22	307.59	320.11	258.40	219.36	595.22	640.43		
23	Interest on fixed capital	1562.40	1548.11	2329.22	1761.42	669.07	842.08	4010.47	2158.29	1443.91	1383.05	3113.53	1270.54	1136.54	1588.39		
Total Cost		34387.16	31002.92	30450.30	24889.90	15669.20	14446.99	30786.45	28666.81	17937.22	16867.91	29781.63	22396.32	25507.81	21266.84		

Source: DES

Annex Table - 4.5(d) : Maize - Break-up of Cost of Cultivation

(Rs/Ha)

S.No.	Cost Items	Andhra Pradesh		Bihar		Chhattisgarh		Gujarat		Himachal Pradesh	
		2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Operational Cost											
Human Labour											
1	Casual	10035.36	9458.43	5460.17	4939.97	2947.70	326.09	6330.22	6320.82	473.10	525.28
2	Attached	682.12	694.36	55.81	24.72	0.00	0.00	67.31	489.39	42.22	18.44
3	Family	5106.21	3818.57	3968.98	4201.52	5817.78	6435.94	8137.33	4221.12	9640.76	7426.16
4	Total	15823.69	13971.36	9484.96	9166.21	8765.48	6762.03	14534.86	11031.33	10156.08	7969.88
Bullock Labour											
5	Hired	526.69	402.30	0.00	11.35	0.00	0.00	324.09	300.82	324.74	635.19
6	Owned	1047.40	936.74	48.41	24.93	1115.62	636.52	2444.31	2045.34	387.18	144.29
7	Total	1574.09	1339.04	48.41	36.28	1115.62	636.52	2768.40	2346.16	711.92	779.48
Machine Labour											
8	Hired	4193.77	3080.13	3009.85	2352.93	1054.82	0.00	2279.34	2017.85	1322.23	1330.43
9	Owned	149.41	81.51	38.62	39.67	552.20	0.00	940.54	564.02	20.29	7.03
10	Total	4343.18	3161.64	3048.47	2392.60	1607.02	0.00	3219.88	2581.87	1342.52	1337.46
11	Seed	2900.83	2453.02	2313.00	2286.33	1711.54	636.96	1746.73	1468.69	999.24	759.36
Fertilisers and Manure											
12	Fertilisers	5200.37	4022.48	3797.42	2736.84	1338.43	0.00	2790.99	2251.38	653.16	572.61
13	Manure	1629.13	488.11	121.75	458.34	290.90	0.00	665.06	1210.67	2491.40	2322.26
14	Total	6829.50	4510.59	3919.17	3195.18	1629.33	0.00	3456.05	3462.05	3144.56	2894.87
Other Inputs											
15	Insecticides	907.79	648.92	93.64	90.73	719.37	0.00	56.60	6.43	84.79	79.89
16	Irrigation charges	503.73	463.22	2614.88	2458.70	413.22	0.00	744.47	620.14	135.48	82.35
17	Interest on working capital	869.25	710.84	548.55	482.02	317.70	49.99	574.68	540.49	216.68	202.41
18	Miscellaneous	39.55	17.59	0.00	0.00	22.54	0.00	0.00	0.00	0.00	0.00
Fixed Cost											
19	Rental value of owned land	20826.66	16761.92	7201.34	7532.94	6482.33	3545.79	7286.77	4603.42	7011.62	6842.39
20	Rent paid for leased-in land	17607.69	14614.79	5968.65	5909.92	5263.22	3131.52	5308.63	2796.26	4556.40	4183.60
21	Land revenue, cesses & taxes	994.05	523.27	0.00	0.00	0.00	0.00	16.41	0.00	23.87	30.85
22	Depreciation on implements & Farm buildings	0.77	0.35	23.13	27.44	5.46	10.95	10.11	10.13	5.30	7.08
23	Interest on fixed capital	203.75	175.68	221.72	216.87	202.13	104.14	235.46	209.51	473.35	521.53
Total Cost											
		54618.27	44038.14	29272.42	27640.99	22784.15	11631.29	34388.44	26660.58	23802.89	20948.09

Source: DES

Annex Table - 4.5(d) : Maize - Break-up of Cost of Cultivation

(Rs/Ha)

S.No.	Cost Items	Karnataka		Madhya Pradesh		Rajasthan		Tamil Nadu		Uttar Pradesh	
		2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12
(1)	(2)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
Operational Cost											
Human Labour											
1	Casual	6701.62	7193.73	3744.39	2690.82	1682.53	1202.94	15902.68	14147.67	3960.41	3217.42
2	Attached	74.74	55.08	85.06	356.04	74.65	199.04	31.15	127.13	0.00	0.00
3	Family	3993.14	3268.72	4054.57	3902.00	16717.81	13038.80	8746.05	6868.89	9268.58	7992.94
4	Total	10769.50	10517.53	7884.02	6948.86	18474.99	14440.78	24679.88	21143.69	13228.99	11210.36
Bullock Labour											
5	Hired	1075.44	1013.75	362.74	411.19	689.45	807.41	3.62	17.13	27.55	195.52
6	Owned	1069.57	1056.31	1758.22	2074.54	1096.00	897.01	8.42	2.76	532.79	1402.00
7	Total	2145.01	2070.06	2120.96	2485.73	1785.45	1704.42	12.04	19.89	560.34	1597.52
Machine Labour											
8	Hired	3877.65	3943.78	3543.25	1628.47	3492.06	2682.42	4991.37	5197.34	2661.84	1970.30
9	Owned	480.56	273.31	76.71	231.67	152.76	106.45	100.46	78.73	19.97	31.20
10	Total	4358.21	4217.09	3619.96	1860.14	3644.82	2788.87	5091.83	5276.07	2681.81	2001.50
11	Seed	2154.58	2155.61	2407.28	1869.35	1605.17	792.97	3737.91	3407.07	821.69	625.30
Fertilisers and Manure											
12	Fertilisers	5094.59	3575.95	1395.24	1118.19	2238.12	1584.20	5699.58	4554.24	1878.34	1177.62
13	Manure	788.77	1122.51	684.68	363.16	331.84	261.06	4545.20	4107.94	257.56	0.00
14	Total	5883.36	4698.46	2079.92	1481.35	2569.96	1845.26	10244.78	8662.18	2135.90	1177.62
Other Inputs											
15	Insecticides	67.00	23.84	155.40	106.38	1.82	3.39	836.07	930.65	7.52	0.00
16	Irrigation charges	354.83	213.32	0.00	0.00	353.90	5.73	2265.65	1558.39	917.68	679.02
17	Interest on working capital	679.36	644.60	444.16	339.06	366.20	266.96	1191.32	1066.53	346.42	290.57
18	Miscellaneous	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Cost											
19	Rental value of owned land	11571.35	11731.94	9963.82	7972.74	8206.38	5691.11	16984.06	14958.38	11286.99	8879.29
20	Rent paid for leased-in land	8960.37	9722.52	8553.16	6451.43	5906.53	4087.66	13084.30	11308.51	7892.64	6558.47
21	Land revenue, cesses & taxes	0.00	0.00	0.00	0.00	278.30	0.00	145.65	101.92	301.04	0.00
22	Depreciation on implements & Farm buildings	8.10	10.55	2.87	5.50	7.15	11.56	6.71	5.67	8.80	7.59
23	Interest on fixed capital	262.03	239.27	439.66	437.51	351.90	371.10	302.31	331.04	740.63	537.68
Total Cost											
		2340.85	1759.60	968.13	1078.30	1662.50	1220.79	3445.09	3211.24	2343.88	1775.55
		37983.2	36272.45	28675.52	23063.61	37008.69	27539.49	65043.54	57022.85	31987.34	26461.18

(concluded)

Source: DES

Annex Table - 4.5(e) : Ragi - Break-up of Cost of Cultivation

S.No.	Cost Items	Andhra Pradesh		Karnataka		Maharashtra		Tamil Nadu		(Rs/Ha)		
		2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2011-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(12)
Operational Cost												
Human Labour												
1	Casual	8791.08	9776.67	7733.43	10130.83	7832.54	5200.14	8761.36	7019.82	4996.50	5763.80	
2	Attached	0.00	0.00	291.83	118.92	1381.66	1414.46	0.00	0.00	0.00	0.00	0.00
3	Family	13279.94	10630.01	7673.73	6435.74	10649.05	8693.10	15088.23	6150.02	17432.15	19723.83	
4	Total	22071.02	20406.68	15698.99	16685.49	19863.25	15307.70	23849.59	13169.84	22428.65	25487.63	
Bullock Labour												
5	Hired	457.08	1766.67	700.34	593.37	0.00	0.00	97.45	79.61	8394.13	9226.51	
6	Owned	0.00	0.00	2911.12	3224.22	5037.29	3274.69	43.28	12.69	0.00	0.00	0.00
7	Total	457.08	1766.67	3611.46	3817.59	5037.29	3274.69	140.73	92.30	8394.13	9226.51	
Machine Labour												
8	Hired	3750.00	2916.67	2639.43	2399.49	0.00	0.00	3677.10	1896.98	0.00	0.00	0.00
9	Owned	0.00	0.00	86.60	30.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	Total	3750.00	2916.67	2726.03	2429.68	0.00	0.00	3677.10	1896.98	0.00	0.00	0.00
11	Seed	573.14	263.33	345.94	275.56	50.18	38.70	2643.64	540.32	198.18	235.72	
Fertilisers and Manure												
12	Fertilisers	641.76	156.00	2806.32	2007.81	0.00	0.00	65.78	1098.57	0.00	0.00	0.00
13	Manure	1410.45	61.67	565.29	480.64	906.69	289.79	0.00	9.06	2511.89	2563.90	
14	Total	2052.21	217.67	3371.61	2488.45	906.69	289.79	65.78	1107.63	2511.89	2563.90	
Other Inputs												
15	Insecticides	44.77	53.33	0.56	3.52	0.00	0.00	0.00	0.00	0.00	0.00	0.00
16	Irrigation charges	33.83	957.33	577.91	335.22	0.00	0.00	1385.70	556.89	0.00	0.00	0.00
17	Interest on working capital	490.69	498.49	583.09	612.49	475.26	319.31	521.07	350.44	503.15	555.94	
18	Miscellaneous	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Cost												
19	Rental value of owned land	6071.00	8485.82	9022.61	6508.65	13546.52	6491.24	11840.21	5511.18	5390.06	6939.07	
20	Rent paid for leased-in land	5698.29	8060.00	6459.51	4201.60	10581.86	3736.22	8469.65	3782.04	4523.78	5934.93	
21	Land revenue, cesses & taxes	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
22	Depreciation on implements & Farm buildings	161.58	120.35	312.21	383.58	401.44	382.90	341.39	143.68	552.81	734.74	
23	Interest on fixed capital	211.13	302.47	2232.85	1908.17	2527.56	2337.60	3014.95	1577.41	313.47	269.40	
Total Cost		35543.74	35565.99	35938.20	33156.65	39879.19	25721.43	44123.82	23225.58	39426.06	45008.77	

Source: DES

Annex Table - 4.5(f) : Tur (Arhar) - Break-up of Cost of Cultivation

S.No.	Cost Items	Andhra Pradesh		Bihar		Gujarat		Karnataka		Madhya Pradesh		Maharashtra		Odisha		Uttar Pradesh	
		2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Operational Cost																	
Human Labour																	
1	Casual	6111.06	6990.68	3000.00	1680.00	3723.82	3893.34	5485.49	4495.20	3975.02	2420.51	9811.68	7434.76	958.09	1279.92	2564.43	2517.20
2	Attached	374.01	248.07	0.00	0.00	341.66	98.09	0.00	0.00	0.00	24.24	878.11	939.44	95.90	113.00	0.00	0.00
3	Family	5625.25	3085.69	643.70	452.36	3903.09	4861.25	3506.12	2788.76	3319.53	3026.79	8636.58	7612.96	6075.19	5233.58	9000.82	8356.54
4	Total	12110.32	10324.44	3643.70	2132.36	7968.57	8852.68	8991.61	7283.96	7294.55	5471.54	19326.37	15987.16	7129.18	6626.50	11565.25	10873.74
Bullock Labour																	
5	Hired	679.19	250.79	0.00	0.00	1702.65	1252.74	916.43	439.85	117.64	28.31	1296.13	899.55	265.88	85.66	43.00	89.90
6	Owned	2080.00	1061.24	0.00	0.00	2126.58	2831.44	1437.15	1204.84	335.56	374.75	4546.57	5124.29	2177.96	1726.06	635.29	440.28
7	Total	2759.19	1312.03	0.00	0.00	3829.23	4084.18	2353.58	1644.69	453.20	403.06	5842.70	6023.84	2443.84	1811.72	678.29	530.18
Machine Labour																	
8	Hired	1901.99	1573.01	0.00	0.00	1742.84	1744.28	1806.58	1913.50	2288.42	1842.18	4895.11	2787.37	60.41	14.47	2066.81	1840.34
9	Owned	126.85	55.07	420.00	250.00	377.05	61.34	87.27	56.27	346.00	158.14	58.49	204.81	4.29	7.20	91.17	190.88
10	Total	2028.84	1628.08	420.00	250.00	2119.89	1805.62	1893.85	1969.77	2634.42	2000.32	4953.60	2992.18	64.70	21.67	2157.98	2031.22
11	Seed	975.36	1144.77	1680.00	1680.00	784.17	1361.05	838.82	698.74	1896.53	870.41	1356.99	1248.64	854.06	897.16	1202.87	990.90
Fertilisers and Manure																	
12	Fertilisers	3452.06	2428.43	0.00	0.00	1664.83	1472.89	1854.12	1286.35	887.55	551.00	3339.32	2001.24	44.26	18.50	79.11	74.04
13	Manure	55.25	468.76	3000.00	0.00	950.31	510.93	286.00	246.05	327.35	49.35	1310.56	405.15	11.24	0.00	8.62	0.00
14	Total	3507.31	2897.19	3000.00	0.00	2615.14	1983.82	2140.12	1532.40	1214.90	600.35	4649.88	2406.39	55.50	18.50	87.73	74.04
Other Inputs																	
15	Insecticides	1614.75	1697.65	0.00	0.00	585.25	981.09	2505.52	2210.50	980.02	955.08	3409.91	1578.08	6.17	0.00	0.00	0.00
16	Irrigation charges	126.34	112.99	0.00	0.00	683.30	959.70	63.60	50.23	80.22	68.28	404.77	467.93	0.00	0.00	1268.26	810.18
17	Interest on working capital	546.78	502.89	253.13	112.81	459.27	473.96	477.53	393.80	351.07	229.44	979.47	722.38	139.95	129.43	248.74	217.30
18	Miscellaneous	0.00	60.93	0.00	0.00	14.19	0.00	0.00	0.00	0.00	0.00	35.28	24.94	0.00	0.00	0.00	0.00
Fixed Cost																	
19	Rental value of owned land	10872.17	13758.38	7059.32	6905.11	6372.36	7278.58	8861.02	10268.40	12107.50	9394.88	17836.52	14993.49	6121.13	5664.24	25291.41	14826.78
20	Rent paid for leased-in land	8600.98	11513.25	6160.00	6153.85	4277.65	5343.85	7430.79	8552.33	9001.86	6549.88	11996.61	8726.88	3666.74	3581.81	12212.66	10430.55
21	Land revenue, cesses & taxes	0.84	1.20	17.85	30.77	27.54	25.99	9.53	9.68	9.90	0.00	47.71	34.60	473.28	494.38	6754.13	0.00
22	Depreciation on imple-ments & Farm buildings	501.64	527.85	14.95	4.85	319.29	322.70	219.60	273.83	649.44	579.25	917.49	947.78	697.00	543.33	1347.93	953.90
23	Interest on fixed capital	1768.71	1716.08	866.52	715.64	1629.79	1586.04	1201.10	1432.56	2446.30	2257.76	4830.84	5235.18	1272.96	1033.59	4962.93	3431.70
Total Cost		34541.06	33439.35	16056.15	11080.28	25431.37	27780.68	28125.65	26052.49	27012.41	19993.36	58795.49	46445.03	16814.53	15169.22	42500.53	30354.34

Source: DES

Annex Table -4.5(g) : Moong - Break-up of Cost of Cultivation

S.No	Cost Items	Andhra Pradesh		Karnataka		Maharashtra		Odisha		Rajasthan		Tamil Nadu	
		2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Operational Cost													
Human Labour													
1	Casual	5214.84	3861.80	4611.56	3847.31	6943.63	3799.84	1233.00	1336.92	2632.51	3669.69	6063.28	5334.75
2	Attached	77.26	65.15	0.00	0.00	980.60	391.78	111.49	73.74	24.65	9.25	21.54	1.06
3	Family	3114.40	2246.08	2337.35	1678.54	4926.43	5306.98	5198.27	3849.02	5631.18	4894.74	3575.90	2058.75
4	Total	8406.50	6173.03	6948.91	5525.85	12850.66	9498.60	6542.76	5259.68	8288.34	8573.68	9660.72	7394.56
Bullock Labour													
5	Hired	107.39	318.60	553.13	356.82	735.88	727.73	61.02	3.09	0.76	35.82	0.00	0.00
6	Owmed	1549.17	275.29	981.41	610.97	4231.58	4105.21	1938.81	1642.77	89.11	201.25	11.58	8.24
7	Total	1656.56	593.89	1534.54	967.79	4967.46	4832.94	1999.83	1645.86	89.87	237.07	11.58	8.24
Machine Labour													
8	Hired	923.95	888.37	1418.87	821.15	1994.45	2137.30	406.58	339.74	2036.08	1933.70	1591.34	1347.92
9	Owmed	19.15	126.52	9.56	303.62	297.21	78.82	2.68	3.06	101.49	66.19	59.90	23.07
10	Total	943.10	1014.89	1428.43	1124.77	2291.66	2216.12	409.26	342.80	2137.57	1999.89	1651.24	1370.99
11	Seed	1169.18	1358.77	1034.44	1036.21	1605.53	1421.58	1412.49	1414.37	1309.66	1425.90	1506.50	1316.52
Fertilisers and Manure													
12	Fertilisers	352.88	308.77	619.19	805.60	2225.72	1092.85	63.53	80.43	704.36	332.47	1411.50	844.87
13	Manure	120.84	0.00	14.43	46.99	1284.03	567.67	32.85	66.50	50.26	146.57	633.39	329.83
14	Total	473.72	308.77	633.62	852.59	3509.75	1660.52	96.38	146.93	754.62	479.04	2044.89	1174.70
Other Inputs													
15	Insecticides	443.80	780.60	42.36	14.46	633.29	266.24	0.00	0.03	206.22	169.14	822.83	565.04
16	Irrigation charges	34.72	17.49	167.97	30.29	154.47	82.45	4.75	0.00	90.96	6.74	167.84	116.68
17	Interest on working capital	312.91	250.06	295.40	246.04	659.53	458.48	164.60	155.02	226.44	249.90	384.05	309.00
18	Miscellaneous	0.00	0.62	0.00	0.00	18.57	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Cost													
19	Rental value of owned land	7450.33	10171.75	4600.92	4209.79	8513.85	5571.32	4647.80	4387.94	5149.29	4102.44	4602.54	4208.91
20	Rent paid for leased-in land	6340.95	9670.63	3961.45	3334.24	5726.64	3311.00	3510.07	3256.52	2749.65	2593.42	3471.11	3556.89
21	Land revenue, cesses & taxes	109.99	0.00	0.00	0.00	0.00	32.18	23.97	0.00	898.83	229.34	163.88	68.82
22	Depreciation on implements & Farm buildings	6.77	0.00	4.93	4.23	12.48	16.57	15.67	17.06	2.08	3.26	4.94	4.55
23	Interest on fixed capital	137.47	194.57	100.66	111.94	287.61	368.26	297.97	304.09	294.15	248.15	203.26	146.82
Total Cost													
		20890.82	20669.87	16686.59	14007.79	35204.77	26008.25	15277.87	13352.63	18252.97	17243.80	20852.19	16464.64

Source: DES

Annex Table - 4.5(h) : Urad - Break- up of Cost of Cultivation

(Rs/Ha)

S.No.	Cost Items	Andhra Pradesh		Chhattisgarh		Madhya Pradesh		Maharashtra		Odisha		Rajasthan		Tamil Nadu		Uttar Pradesh	
		2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Operational Cost		18355.84	19951.38	11927.49	9428.77	12603.34	11721.16	23546.49	22603.83	10003.17	8881.87	19434.45	13637.29	17265.07	14930.09	10485.35	10659.43
Human Labour																	
1	Casual	8853.86	9305.19	650.78	313.68	2861.05	2227.42	6044.86	3569.17	877.46	1098.35	2398.78	945.07	6332.83	5481.41	1352.54	1688.89
2	Attached	50.70	142.26	0.00	0.00	36.74	44.14	407.02	335.84	14.78	10.95	107.91	64.96	473.30	137.68	9.84	35.44
3	Family	1721.92	1328.22	7665.05	5757.60	3133.07	2798.19	5050.61	6586.06	5095.10	4175.18	10185.42	7765.19	2817.03	2691.98	4533.59	4341.40
4	Total	10626.48	10775.67	8315.83	6071.28	6030.86	5069.75	11502.49	10491.07	5987.34	5284.48	12692.11	8775.22	9623.16	8311.07	5895.97	6065.73
Bullock Labour																	
5	Hired	116.18	43.22	0.00	0.00	22.45	20.14	1315.96	1026.83	256.46	10.78	187.10	160.86	1.12	0.00	8.64	31.84
6	Owned	220.08	56.32	2196.70	2232.32	351.69	468.13	3929.33	3558.17	1780.46	1677.61	1868.01	670.85	27.49	37.73	322.30	146.90
7	Total	336.26	99.54	2196.70	2232.32	374.14	488.27	5245.29	4385.00	2036.92	1688.39	2055.11	831.71	28.61	37.73	330.94	178.74
Machine Labour																	
8	Hired	1846.79	2166.02	158.98	0.00	3127.76	3033.93	2469.93	3211.35	269.37	98.43	1938.75	1925.61	1788.87	1937.98	2147.20	2456.44
9	Owned	39.46	23.55	0.00	0.00	54.49	75.70	63.12	62.54	0.51	1.58	468.21	544.86	359.92	111.41	632.14	395.49
10	Total	1886.25	2189.57	158.98	0.00	3182.25	3109.63	2533.05	3273.89	269.88	100.01	2406.96	2470.47	2148.79	2049.39	2779.34	2851.93
11	Seed	2486.66	2346.43	1126.82	1013.92	1248.39	1314.78	1301.41	1275.69	1347.97	1337.95	977.65	1118.81	1521.52	1514.94	922.04	914.49
Fertilisers and Manure																	
12	Fertilisers	186.66	560.31	0.00	0.00	967.58	665.92	1836.31	1643.91	132.08	200.57	647.97	235.00	1643.53	1188.36	50.95	154.22
13	Manure	9.61	0.00	0.00	0.00	144.34	253.90	83.52	354.04	79.52	126.44	178.41	0.00	922.73	684.99	0.00	0.00
14	Total	196.27	560.31	0.00	0.00	1111.92	919.82	1919.83	1997.95	211.60	327.01	826.38	235.00	2566.26	1873.35	50.95	154.22
Other Inputs																	
15	Insecticides	2315.95	3327.97	0.00	0.00	368.80	137.14	483.94	360.66	0.73	1.39	195.97	28.14	629.55	540.82	299.70	224.41
16	Irrigation charges	1.17	83.49	0.00	0.00	0.00	411.38	0.00	134.18	0.00	0.00	0.00	0.00	309.36	231.94	26.05	78.45
17	Interest on working capital	504.06	564.34	129.16	111.25	286.98	270.39	560.48	485.39	148.73	142.64	280.27	177.94	437.82	370.85	180.36	191.46
18	Miscellaneous	2.74	4.06	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Cost		13489.74	13356.29	7654.95	5861.96	7554.68	6628.17	4649.54	5512.68	3914.57	3920.37	5808.21	4970.79	5456.14	6752.26	5855.34	5286.36
19	Rental value of owned land	13011.85	12695.01	7147.27	5229.05	6732.76	5869.56	3484.94	3245.52	2801.85	2898.79	4302.14	2846.05	3459.33	5086.81	2979.32	3448.65
20	Rent paid for leased-in land	0.00	21.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	147.79	1557.06	208.89
21	Land revenue, cesses & taxes	3.48	0.12	8.18	7.00	3.90	3.59	18.04	20.79	12.08	13.68	7.86	9.60	6.92	6.19	3.66	3.40
22	Depreciation on implements & Farm buildings	131.38	166.27	160.70	183.21	147.96	177.62	159.21	358.61	321.77	288.91	311.76	338.97	340.11	318.94	313.05	420.90
23	Interest on fixed capital	343.03	473.51	338.80	442.70	670.06	577.40	987.35	1887.76	778.87	718.99	1186.45	1776.17	1649.78	1192.53	1002.25	1204.52
Total Cost		31845.58	33307.67	19582.44	15290.73	20158.02	18349.33	28196.03	28116.51	13917.74	12802.24	25242.66	18608.08	22721.21	21682.35	16340.69	15945.79

Source: DES

Annex Table - 4.5(i) : Groundnut - Break-up of Cost of Cultivation

(Rs/Ha)

S.No.	Cost Items	Andhra Pradesh		Gujarat		Karnataka		Maharashtra		Odisha		Tamil Nadu	
		2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
Operational Cost													
Human Labour													
1	Casual	16280.80	15154.89	4772.42	5389.58	4563.51	5367.50	10123.31	12152.73	7276.57	6144.73	13748.61	9846.96
2	Attached	444.19	191.96	13.16	44.36	16.92	1.87	3710.02	26.69	178.34	131.05	378.73	63.46
3	Family	7641.47	5706.55	6703.62	5678.43	6129.31	3857.05	10111.92	9581.18	13334.02	9360.72	11507.73	10335.95
4	Total	24366.46	21053.40	11489.20	11112.37	10709.74	9226.42	23945.25	21760.60	20788.93	15636.50	25635.07	20246.37
Bullock Labour													
5	Hired	965.67	962.21	490.21	657.01	710.15	268.33	322.20	1607.91	22.58	138.33	1008.61	857.07
6	Owned	789.02	529.72	2615.08	2394.08	2350.28	1719.65	2196.65	753.30	2071.21	1545.19	215.08	328.80
7	Total	1754.69	1491.93	3105.29	3051.09	3060.43	1987.98	2518.85	2361.21	2093.79	1683.52	1223.69	1185.87
Machine Labour													
8	Hired	3133.45	3040.47	3043.65	3415.19	1639.50	1890.53	2341.06	3376.32	1167.78	974.18	3673.40	2490.53
9	Owned	26.02	65.33	514.14	395.66	99.31	85.14	54.46	826.78	17.13	6.31	107.59	81.17
10	Total	3159.47	3105.80	3557.79	3810.85	1738.81	1975.67	2395.52	4203.10	1184.91	980.49	3780.99	2571.70
11	Seed	11062.46	8270.83	10691.68	8170.91	8146.49	7001.91	8778.49	7959.11	5615.66	3379.48	8828.92	7702.21
Fertilisers and Manure													
12	Fertilisers	3448.89	2780.58	2481.69	2008.62	4578.31	1583.37	2736.16	2353.71	3344.97	1832.84	2994.23	1169.63
13	Manure	1680.86	875.47	2967.88	1154.04	14.49	2817.29	405.11	2059.36	218.80	117.16	3151.01	2740.91
14	Total	5129.75	3656.05	5449.57	3162.66	4592.80	4400.66	3141.27	4413.07	3563.77	1950.00	6145.24	3910.54
Other Inputs													
15	Insecticides	600.06	778.26	659.62	1361.48	645.75	194.51	404.58	79.81	0.00	21.40	548.82	361.97
16	Irrigation charges	1323.91	826.06	1507.17	917.98	1078.45	1179.33	2986.40	1685.57	231.58	192.60	1513.60	770.17
17	Interest on working capital	1242.41	1046.82	930.01	810.02	745.10	690.92	1064.33	1027.54	629.52	452.60	1130.27	825.40
18	Miscellaneous	1.92	22.44	3.52	11.86	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Fixed Cost													
19	Rental value of owned land	33054.14	25380.54	10620.80	10427.35	10365.51	8918.39	18376.10	12174.04	16850.72	14527.75	12142.93	10340.95
20	Rent paid for leased-in land	30159.27	22194.62	7591.90	8331.84	8352.31	7171.28	15431.29	7874.34	15188.54	13212.38	9115.16	6880.42
21	Land revenue, cesses & taxes	0.00	24.72	506.23	314.09	0.00	0.00	0.00	0.00	14.97	18.54	63.79	0.00
22	Depreciation on implements & Farm buildings	1.00	0.14	5.64	4.47	8.77	7.17	23.86	31.37	11.20	11.18	6.48	6.12
23	Interest on fixed capital	361.05	399.76	234.03	177.29	217.53	208.60	354.46	557.51	336.73	364.60	332.60	308.33
Total Cost													
		81695.27	65632.13	48014.65	42836.57	41083.08	35575.79	63610.79	55664.05	50958.88	38824.34	60949.53	47915.18

Source: DES

Annex Table - 4.5(j) : Soyabean - Break-up of Cost of Cultivation

(Rs/Ha)

S.No.	Cost Items	Chhattisgarh		Madhya Pradesh		Maharashtra		Rajasthan	
		2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Operational Cost		14156.32	10381.13	18759.16	14418.07	28974.35	22368.55	16988.79	12257.65
Human Labour									
1	Casual	1417.54	1534.83	2580.03	1927.66	6592.00	4462.59	2462.52	1533.68
2	Attached	0.00	0.00	83.77	68.85	218.65	357.36	70.80	76.82
3	Family	1722.80	1624.90	3719.34	3032.26	3359.28	3233.94	3822.60	3760.58
4	Total	3140.34	3159.73	6383.14	5028.77	10169.93	8053.89	6355.92	5371.08
Bullock Labour									
5	Hired	827.67	394.37	251.07	285.94	584.49	660.83	108.74	58.69
6	Owned	646.45	465.32	589.71	351.84	2507.92	3113.88	285.92	255.76
7	Total	1474.12	859.69	840.78	637.78	3092.41	3774.71	394.66	314.45
Machine Labour									
8	Hired	2982.19	1753.86	3288.90	2910.84	5969.27	3864.21	3097.16	2251.39
9	Owned	0.00	109.83	338.52	204.84	171.32	210.27	418.86	521.05
10	Total	2982.19	1863.69	3627.42	3115.68	6140.59	4074.48	3516.02	2772.44
11	Seed	2640.22	2160.68	3676.67	2467.09	3513.34	2613.83	4507.90	2811.70
Fertilisers and Manure									
12	Fertilisers	2012.15	1345.77	1472.32	880.92	2473.94	1675.29	329.24	127.42
13	Manure	258.62	0.00	676.28	591.47	1332.29	463.58	505.03	0.00
14	Total	2270.77	1345.77	2148.60	1472.39	3806.23	2138.87	834.27	127.42
Other Inputs									
15	Insecticides	1271.85	621.54	1611.16	1324.16	1277.05	864.03	965.07	603.07
16	Irrigation charges	0.00	102.79	0.00	0.00	191.17	259.05	15.97	0.00
17	Interest on working capital	376.83	265.34	455.75	345.02	776.21	579.84	398.98	257.49
18	Miscellaneous	6281.93	1.90	15.64	27.18	7.42	9.85	0.00	0.00
Fixed Cost		5585.53	6331.41	12182.14	8143.30	11650.72	8440.26	Source: DES	
19	Rental value of owned land	0.00	4392.49	10982.97	6660.40	9189.91	5354.18	7271.20	5158.30
20	Rent paid for leased-in land	0.00	0.00	0.00	0.00	47.33	0.00	0.00	0.00
21	Land revenue, cesses & taxes	3.51	6.92	3.51	3.81	19.86	22.54	6.40	7.18
22	Depreciation on implements & Farm buildings	191.29	303.05	259.08	314.36	438.57	584.48	278.70	283.07
23	Interest on fixed capital	501.60	1628.95	936.58	1164.73	1955.05	2479.06	1627.06	1888.56
Total Cost		20438.25	16712.54	30941.30	22561.37	40625.07	30808.81	26172.15	19594.76

Source: DES

Annex Table-4.5(k) : Sunflower - Break-up of Cost of Cultivation

(Rs/Ha)

S.No.	Cost Items	Andhra Pradesh		Karnataka		Maharashtra	
		2012-13	2011-12	2012-13	2011-12	2012-14	2011-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Operational Cost		28261.54	21904.57	14034.45	11736.05	23832.44	19937.88
Human Labour							
1	Casual	6336.75	7339.35	3038.09	3389.64	7259.33	4897.38
2	Attached	0.00	0.00	0.00	0.00	352.23	782.22
3	Family	5565.27	3905.53	2018.55	1689.10	3599.22	3670.02
4	Total	11902.02	11244.88	5056.64	5078.74	11210.78	9349.62
Bullock Labour							
5	Hired	2026.89	572.10	910.93	621.36	87.79	344.02
6	Owened	186.62	1139.07	775.80	841.79	3843.66	5928.91
7	Total	2213.51	1711.17	1686.73	1463.15	3931.45	6272.93
Machine Labour							
8	Hired	3253.90	2586.91	2649.46	1995.44	2088.77	1144.90
9	Owened	321.95	14.16	171.70	23.86	0.00	31.68
10	Total	3575.85	2601.07	2821.16	2019.30	2088.77	1176.58
11	Seed	2351.25	1441.41	1702.85	1690.62	2249.14	1688.26
Fertilisers and Manure							
12	Fertilisers	3717.44	2475.56	2023.16	1001.76	2208.33	957.52
13	Manure	858.58	922.20	127.18	0.00	0.00	0.00
14	Total	4576.02	3397.76	2150.34	1001.76	2208.33	957.52
Other Inputs							
15	Insecticides	2101.16	632.85	101.20	81.31	0.00	0.00
16	Irrigation charges	818.82	330.00	151.41	96.72	1530.84	0.00
17	Interest on working capital	687.77	545.43	364.12	304.45	613.13	492.97
18	Miscellaneous	35.14	0.00	0.00	0.00	0.00	0.00
Fixed Cost		10803.96	12202.80	5439.79	4423.61	9136.00	7886.64
19	Rental value of owned land	9985.77	9197.75	4264.39	3572.06	7300.67	6284.47
20	Rent paid for leased-in land	0.00	1087.85	0.00	0.00	0.00	0.00
21	Land revenue, cesses & taxes	4.64	0.26	6.29	11.93	11.75	11.15
22	Depreciation on implements & Farm buildings	115.77	320.87	179.85	140.88	214.76	218.43
23	Interest on fixed capital	697.78	1596.07	989.26	698.74	1608.82	1372.59
Total Cost		39065.50	34107.37	19474.24	16159.66	32968.44	27824.52

Source: DES

Source: DES

Annex Table-4.5(m) : Nigerseed - Break-up of Cost of Cultivation

(Rs/Ha)

S.No.	Cost Items	Odisha	
		2012-13	2011-12
(1)	(2)	(3)	(4)
Operational Cost		11028.88	10208.54
Human Labour			
1	Casual	870.81	1663.48
2	Attached	16.66	1.00
3	Family	6031.72	4750.37
4	Total	6919.19	6414.85
Bullock Labour			
5	Hired	12.37	251.48
6	Owened	3511.50	3118.18
7	Total	3523.87	3369.66
Machine Labour			
8	Hired	66.70	0.00
9	Owened	0.00	0.00
10	Total	66.70	0.00
11	Seed	367.69	258.63
Fertilisers and Manure			
12	Fertilisers	0.00	0.00
13	Manure	0.00	0.00
14	Total	0.00	0.00
Other Inputs			
15	Insecticides	0.00	0.00
16	Irrigation charges	0.00	0.00
17	Interest on working capital	151.43	165.40
18	Miscellaneous	0.00	0.00
Fixed Cost		5702.48	3743.20
19	Rental value of owned land	4536.82	2421.40
20	Rent paid for leased-in land	0.00	0.00
21	Land revenue, cesses & taxes	9.22	9.42
22	Depreciation on implements & Farm buildings	356.91	401.90
23	Interest on fixed capital	799.53	910.48
Total Cost		16731.36	13951.74

Source: DES

Annex Table-4.5(n) : Cotton - Break-up of Cost of Cultivation

(Rs/Ha)

S.No.	Cost Items	Andhra Pradesh		Gujarat		Haryana		Karnataka		Madhya Pradesh	
		2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Operational Cost		49164.10	38052.87	40688.94	40193.62	43367.47	38499.16	29710.46	29498.31	24392.77	22265.92
Human Labour											
1	Casual	18317.15	13387.05	9490.78	11438.54	4726.73	8117.67	8335.17	10182.32	4095.39	4526.54
2	Attached	939.90	695.34	92.01	193.56	498.45	858.99	0.00	0.00	8.00	5.97
3	Family	7054.03	5268.73	9446.19	8381.14	20560.94	12916.48	5098.52	3812.29	6860.90	6953.94
4	Total	26311.08	19351.12	19028.98	20013.24	25786.12	21893.14	13433.69	13994.61	10964.29	11486.45
Bullock Labour											
5	Hired	861.99	491.15	577.62	542.02	135.23	113.71	617.80	740.20	370.62	95.49
6	Owned	2097.69	1675.68	1678.29	1362.54	1022.00	1282.96	1751.39	1375.84	1849.91	2133.71
7	Total	2959.68	2166.83	2255.91	1904.56	1157.23	1396.67	2369.19	2116.04	2220.53	2229.20
Machine Labour											
8	Hired	2617.19	2179.62	2650.28	2571.48	2352.94	1887.28	2920.36	2861.67	1807.49	781.47
9	Owned	188.85	222.33	837.96	533.53	1028.92	1092.31	195.69	219.79	3.10	4.60
10	Total	2806.04	2401.95	3488.24	3105.01	3381.86	2979.59	3116.05	3081.46	1810.59	786.07
11	Seed	4120.46	3711.15	3456.53	2956.61	4522.28	4532.93	4872.56	3777.29	2403.27	2346.50
Fertilisers and Manure											
12	Fertilisers	7338.36	4922.69	3735.67	3642.49	2674.63	2123.81	3294.90	3193.61	2832.67	1693.22
13	Manure	1120.11	1461.39	3274.29	2434.72	0.00	16.28	518.44	1387.77	1028.73	818.00
14	Total	8458.47	6384.08	7009.96	6077.21	2674.63	2140.09	3813.34	4581.38	3861.40	2511.22
Other Inputs											
15	Insecticides	3134.40	2738.21	1594.90	2458.25	1440.51	1992.39	929.57	902.87	2073.25	1943.07
16	Irrigation charges	92.93	291.93	2907.67	2705.02	3693.83	2699.34	430.24	266.30	528.17	499.41
17	Interest on working capital	1276.06	993.46	946.75	964.01	691.11	775.23	745.82	778.36	531.27	464.00
18	Miscellaneous	4.98	14.14	0.00	9.71	19.90	89.78	0.00	0.00	0.00	0.00
Fixed Cost		21445.41	23581.13	14080.51	17844.26	23762.08	23830.82	14724.38	15236.81	17039.07	19595.47
19	Rental value of owned land	17272.16	19313.33	8546.31	12660.61	20205.15	20497.23	11878.13	12771.76	15292.28	16820.11
20	Rent paid for leased-in land	1544.46	364.47	873.00	922.20	0.00	0.00	0.00	0.00	0.00	0.00
21	Land revenue, cesses & taxes	0.57	0.51	11.66	13.66	0.00	0.00	8.64	9.73	2.00	2.84
22	Depreciation on implements & Farm buildings	239.10	354.64	299.79	338.90	431.12	304.26	298.53	299.84	383.59	725.18
23	Interest on fixed capital	2389.12	3548.18	4349.75	3908.89	3125.81	3029.33	2539.08	2155.48	1361.20	2047.34
Total Cost		70609.51	61634.00	54769.45	58037.88	67129.55	62329.98	44434.84	44735.12	41431.84	41861.39

Annex Table-4.5(n) : Cotton - Break-up of Cost of Cultivation

(Rs/Ha)

S.No.	Cost Items	Maharashtra		Odisha		Punjab		Rajasthan		Tamil Nadu	
		2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12	2012-13	2011-12
(1)	(2)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
Operational Cost		53319.90	44844.73	34108.72	30431.21	43310.95	39115.74	39292.59	35570.57	55948.84	47392.59
Human Labour											
1	Casual	13769.79	10547.72	8848.97	8801.10	12532.83	11963.33	3917.76	3496.57	12698.55	12580.85
2	Attached	1333.58	1582.22	752.57	735.05	2674.95	1728.67	847.89	376.61	0.00	0.00
3	Family	7880.43	7997.34	9521.39	8300.61	7372.33	5297.52	18096.68	18326.04	24044.62	17822.55
4	Total	22983.80	20127.28	19122.93	17836.76	22580.11	18989.52	22862.33	22199.22	36743.17	30403.40
Bullock Labour											
5	Hired	1052.43	620.41	143.82	32.82	2.32	3.77	143.55	75.46	127.57	104.89
6	Owmed	6281.83	5390.50	3277.85	2614.73	232.29	209.35	479.48	442.71	176.93	382.77
7	Total	7334.26	6010.91	3421.67	2647.55	234.61	213.12	623.03	518.17	304.50	487.66
Machine Labour											
8	Hired	3122.53	2383.57	735.28	813.57	846.08	608.33	2037.08	1625.15	3886.48	3160.79
9	Owmed	179.98	398.02	53.34	43.98	4347.97	3158.91	298.45	447.59	79.80	203.85
10	Total	3302.51	2781.59	788.62	857.55	5194.05	3767.24	2335.53	2072.74	3966.28	3364.64
11	Seed	3690.78	3750.78	3255.97	3744.23	5511.90	5793.77	4593.98	3954.46	2745.88	2374.20
Fertilisers and Manure											
12	Fertilisers	6901.08	5475.06	4992.43	3327.32	3949.15	3230.52	2871.73	2029.80	6046.13	6007.58
13	Manure	2680.29	1332.09	1315.13	1066.31	11.39	0.00	1883.10	1017.50	2390.69	1004.77
14	Total	9581.37	6807.15	6307.56	4393.63	3960.54	3230.52	4754.83	3047.30	8436.82	7012.35
Other Inputs											
15	Insecticides	2794.33	2198.44	466.88	277.54	4332.81	5655.54	2187.93	2460.13	1895.70	1622.27
16	Irrigation charges	2183.71	2006.57	0.00	0.00	395.44	387.92	1281.17	795.99	889.70	1232.01
17	Interest on working capital	1376.94	1116.59	745.09	670.62	1089.05	1024.79	642.30	522.56	966.79	896.06
18	Miscellaneous	72.20	45.42	0.00	3.33	12.44	53.32	11.49	0.00	0.00	0.00
Fixed Cost		17759.83	17062.76	13783.91	13003.12	30164.37	27581.82	18363.40	18725.68	16971.71	13926.31
19	Rental value of owned land	11658.28	10276.44	11454.52	11273.22	24044.97	21763.10	15522.38	15796.61	12654.58	9928.63
20	Rent paid for leased-in land	14.83	92.81	0.00	0.00	2677.89	1796.81	28.37	0.00	36.05	0.00
21	Land revenue, cesses & taxes	28.65	29.55	9.77	10.00	0.00	0.00	9.62	8.07	8.40	11.15
22	Depreciation on implements & Farm buildings	666.98	776.29	547.96	414.28	375.06	468.13	284.43	242.53	288.12	477.02
23	Interest on fixed capital	5391.09	5887.67	1771.66	1305.62	3066.45	3553.78	2518.60	2678.47	3984.56	3509.51
Total Cost		71079.73	61907.49	47892.63	43434.33	73475.32	66697.56	57655.99	54296.25	72920.55	61318.90

Source: DES

(concluded)

Annex Table - 4.6 : Index of Terms of Trade Between Agricultural and Non-Agricultural Sectors

TE 2011-12=100

S.No.	Year	Index of Prices Received (IPR)	Index of Prices Paid (IPP)	Index of Terms of Trade (ITT)
(1)	(2)	(3)	(4)	(5)
1	2004-05	62.4	71.0	87.8
2	2005-06	61.4	72.4	84.8
3	2006-07	64.0	73.5	87.1
4	2007-08	72.1	78.2	92.2
5	2008-09	82.1	82.1	100.0
6	2009-10	90.9	90.8	100.2
7	2010-11	101.3	98.4	102.9
8	2011-12	107.8	110.9	97.3
9	2012-13	119.5	122.8	97.3
10	2013-14*	130.7	136.8	95.5

Source: Committee's Report on Terms of Trade (TOT)

* Provisional

Annex Table - 5.1 : Quarterly Domestic and International Prices of Kharif Crops

(Rs/Tonne)

S.No.	Quarter	Rice		Maize		Jowar		Tur		Urad		Moong		Cotton	
		D	I	D	I	D	I	D	I	D	I	D	I	D	I
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
1	2010 Q4	18750	21148	9500	10832	12366	9359	34690	30731	37730	43479	63500	46134	43188	49361
2	2011 Q1	18200	21067	10581	12802	12015	11553	37160	41689	34570	44142	63500	59988	58074	68950
3	2011 Q2	17283	20424	12078	13975	11027	12092	34007	33866	36130	41690	34510	55624	36006	57637
4	2011 Q3	17217	24355	12022	13829	11521	13162	33627	27810	36930	39102	36290	43870	38917	39582
5	2011 Q4	19667	28534	10790	13480	16704	13107	33423	31954	37830	38489	29580	46594	41865	38105
6	2012 Q1	20731	26844	11616	13960	15109	13554	33781	30460	40230	31004	32570	41563	39583	37087
7	2010 Q2	20969	29111	11789	14566	14212	12423	35478	34129	39350	31695	36790	44409	38789	35742
8	2012 Q3	23011	29921	14161	17945	14661	12741	39852	42611	42870	41047	45500	52091	44000	33780
9	2012 Q4	23938	29010	13407	17335	14500	15597	37914	35919	43050	34701	41990	54736	40268	32699
10	2013 Q1	24645	29008	13552	16519	12417	15815	38812	37870	43470	34395	54620	55429	42290	35746
11	2013 Q2	25582	29106	13661	16292	12650	14536	40585	39849	44600	36446	51330	55462	43739	38032
12	2013 Q3	26088	26162	15144	15058	12950	13645	39446	38281	47000	34857	48300	48966	50611	41915
13	2013 Q4	26316	25372	12124	12373	13450	12945	41752	38369	48830	36611	52500	57554	43530	39712
14	2014 Q1	23711	23168	12227	12968	12083	13851	40745	39653	53830	42887	68330	68654	48190	42628
15	2014 Q2	24417	21008	12678	12797	18800	13120	41021	42981	53000	54568	61170	68322	46420	40664
16	2014 Q3	23446	24244	12899	10552	13567	11170	44276	45963	55250	60004	60000	69398	45110	34346
17	2014 Q4	22736	24914	11410	10745	13133	12448	45339	44899	55470	57285	74990	71529	40700	31378

Annex Table - 5.1 : Quarterly Domestic and International Prices of Kharif Crops

(Rs/Tonne)

S.No.	Quarter	Soyabean		Soyabean Oil		Soyabean Meal		Groundnut		Groundnut Oil		Sunflower seed		Sunflower Oil	
		D	I	D	I	D	I	D	I	D	I	D	I	D	I
(1)	(2)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1	2010 Q4	21120	22027	54271	50769	17256	18275	27483	22327	78269	73978	26710	30148	63409	62493
2	2011 Q1	22733	23965	61686	56864	17549	16482	31633	23059	76071	78927	28583	31903	65998	65451
3	2011 Q2	22509	22444	61413	54499	16778	17090	33200	22756	86540	78865	29187	30402	63366	63739
4	2011 Q3	22605	23896	63835	56688	16737	16804	39833	23636	97002	94576	29232	26917	65768	61937
5	2011 Q4	21750	23424	63202	57305	16421	18636	37333	34509	88126	109212	32735	27396	64780	61956
6	2012 Q1	25063	24502	68252	58624	21280	24797	41983	37423	108339	106186	30767	28591	63419	62394
7	2010 Q2	30758	29251	71323	63264	32642	33574	46533	41064	120536	127032	31676	32425	66297	68367
8	2012 Q3	35586	35470	75281	66043	36174	29656	46350	40624	120007	131681	31940	36685	70930	71584
9	2012 Q4	30910	30775	67572	59348	27285	26559	48375	41623	119005	119958	33953	36081	68548	67705
10	2013 Q1	32800	29032	68572	59401	31245	27442	47333	34684	124675	104214	36167	36236	70822	67977
11	2013 Q2	37210	29921	67046	54940	31884	30895	43667	33258	111688	98750	35167	31021	69843	68158
12	2013 Q3	34440	33177	65239	54797	31418	33033	31317	33488	92586	113909	34500	26828	73844	64300
13	2013 Q4	35130	33488	68455	56572	33136	32785	32230	35184	85584	107207	33250	29806	68096	61391
14	2014 Q1	37110	33093	66419	54181	34779	31475	32120	33917	77074	84803	35750	30746	62955	58259
15	2014 Q2	40100	31375	66131	52225	40037	26971	32670	29840	75428	76105	36500	28505	59767	56053
16	2014 Q3	35160	28285	62180	49599	34673	26599	32850	29073	78693	81601	35250	24830	56987	51276
17	2014 Q4	30080	27280	60533	47748	28257	32980	35770	28612	85357	82336	33917	26692	57479	54684

(concluded)

D: Domestic and I: International

Source : DES, Agmarknet, NAFED,SEA, USDA and World Bank

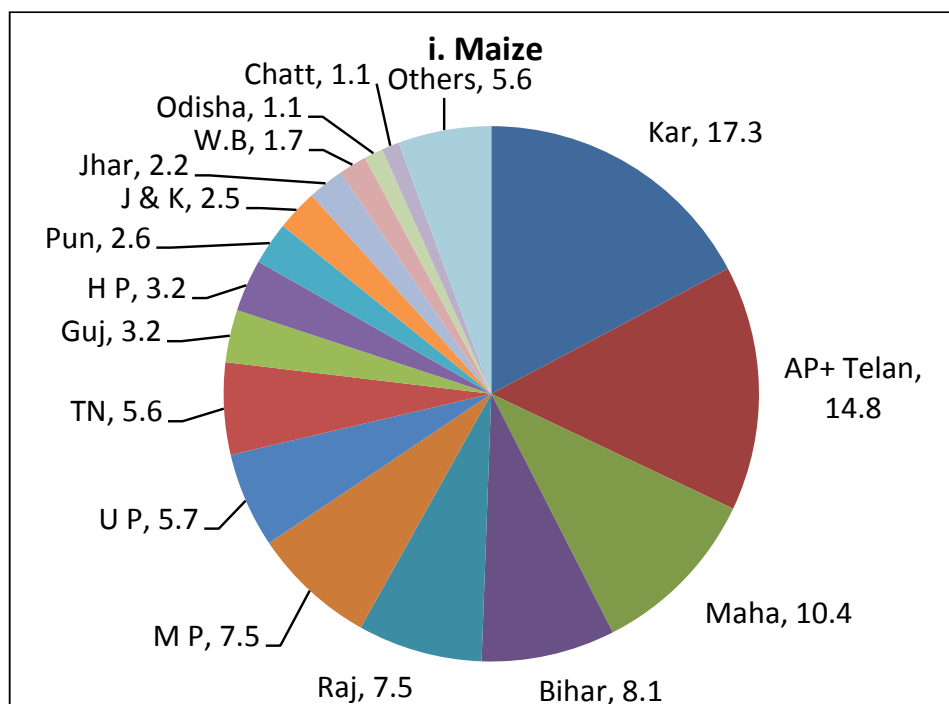
Annex Table - 6.1 : MSP Suggested by State Governments for the Kharif Crops of 2015-16

(Rs./Qtl.)																					
S.No.	State	Paddy (Common)	Paddy (Gr-A)/(S. Fine)	Jowar	Bajra	Maize	Ragi	Moong	Urad	Tur	Groundnut (in shell)	Sesamum	Soyabean	Soyabean (Yellow)	Soyabean (Black)	Sunflow-er-seed	Niger-seed	Cotton	Cotton (Long Staple)	Cotton (Medium Staple)	Cotton (American)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)
1	Andhra Pd.	2636	3238	2673	2255	2358	2724	7565	7066	8141	6802	9792	4197			6892			7461	7305	
2	Assam	1475	1520					4750	4450	4450		4650									
3	Chhattisgarh	2100	2150			1400		6000	5200	6500	5000	6000		3200	3100	4600	5000				
4	Gujarat	2000			1950	1950		5500	5500	5500	5200	6100							5500	5200	
5	Haryana	2193			1557	2042															5368
6	Himachal Pd.	1400		1530	1250	1310	1550	4600	4350	4350	4000	4600	2500			3750	3600		4050	3750	
7	Jharkhand	1616				1614			5444	4698											
8	Karnataka	1900		2900	2200	1650	2000	5900	5600	6000	6000			4600		4900		5500			
9	Kerala	2100	2200																		
10	Madhya Pd.	2100	2550	2000		2000				5700	4250	4900		3250			4500	6000			
11	Odisha	2500						5500	5000	4800	4500	5200					4000	4500			
12	Punjab	1900	1960			1850		6200	6000	5900	5400							5551			
13	Rajasthan				1500	1550		5000	5000			5500	3000					4500			
14	Tamil Nadu	2100	2200	1700	1500	1600	1700	5100	4800	4800	4500	5000	3000			4500			4500	4000	
15	Tripura	1685																			
16	West Bengal	1610																			

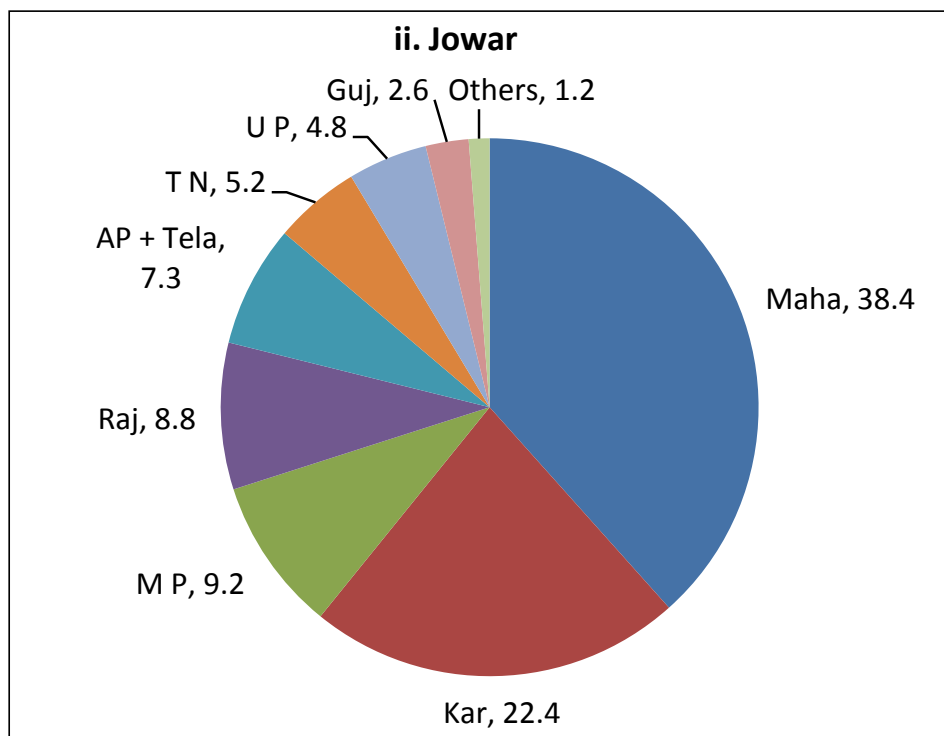
Source : State Governments

Annex Charts

Annex Chart - 1.1 (i & ii) : Production Shares of Kharif Crops

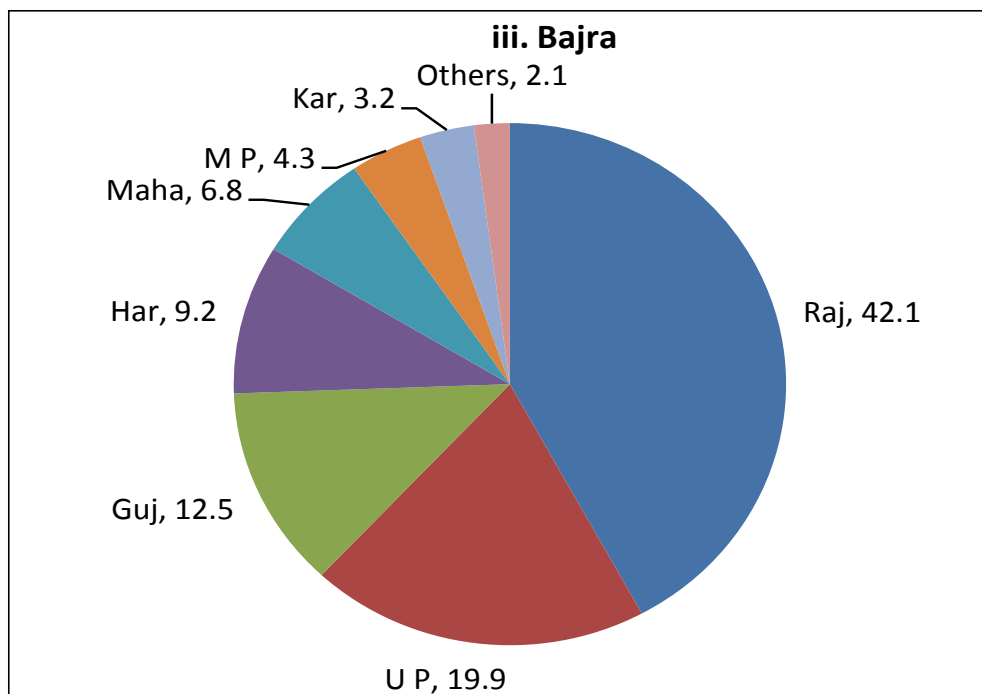


Source : Directorate of Economics & Statistics, Ministry of Agriculture

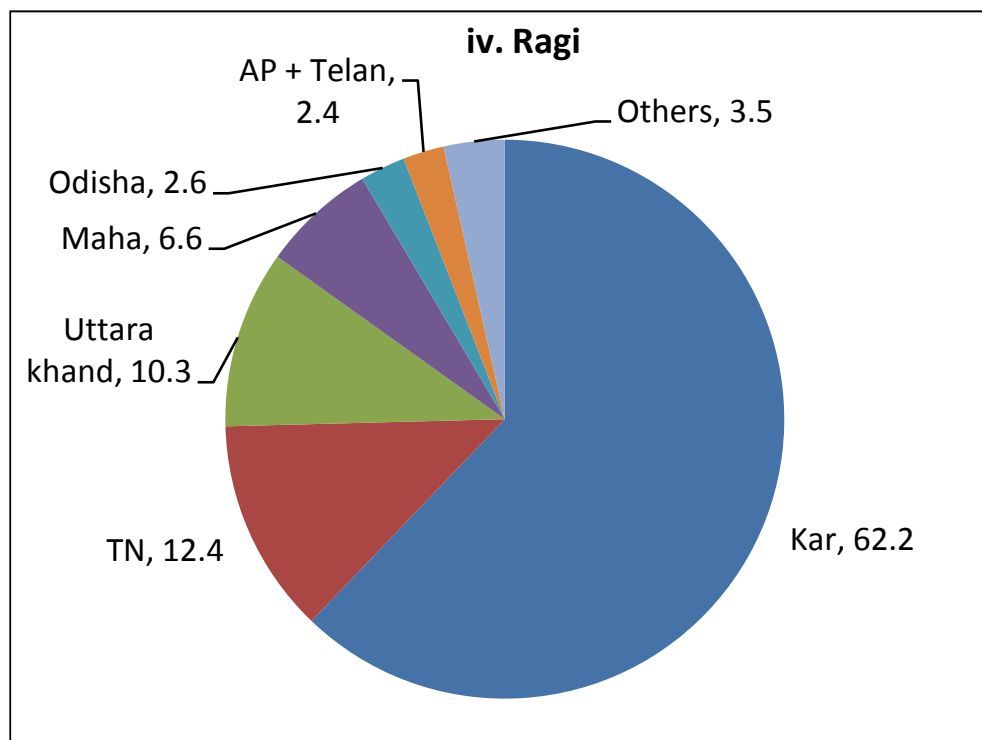


Source : Directorate of Economics & Statistics, Ministry of Agriculture

Annex Chart - 1.1 (iii & iv) : Production Shares of Kharif Crops

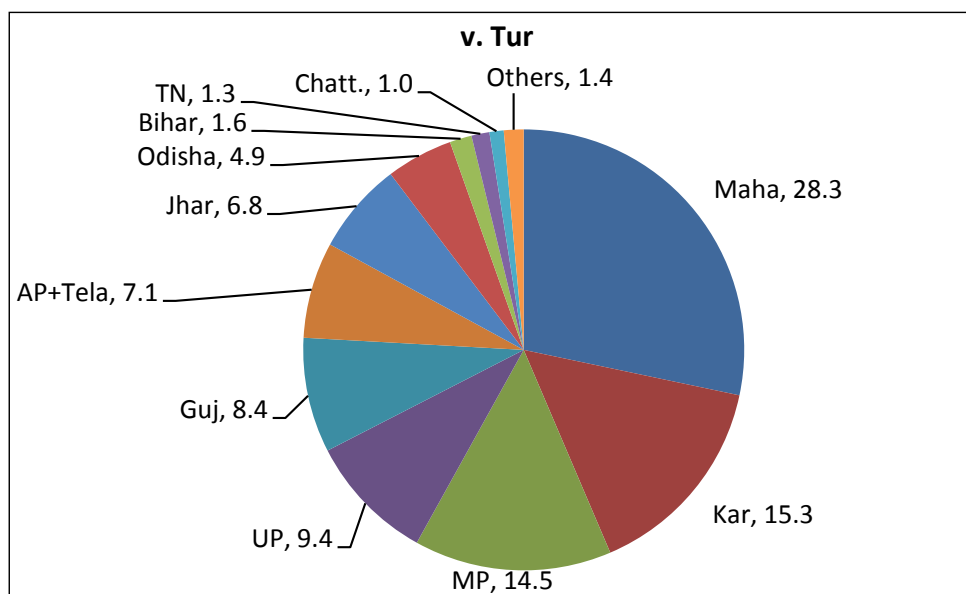


Source : Directorate of Economics & Statistics, Ministry of Agriculture

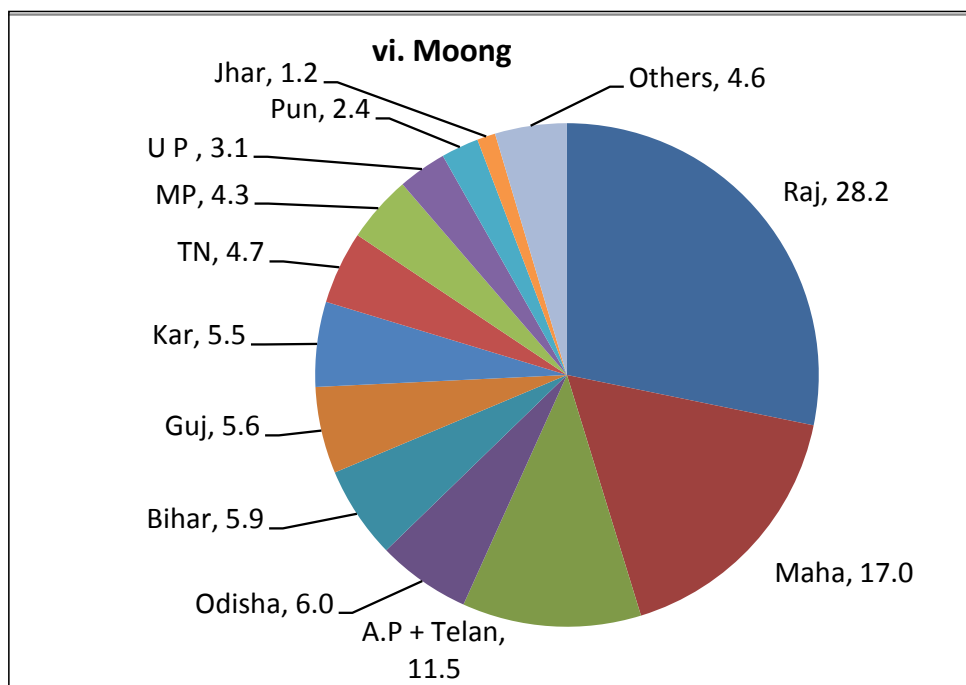


Source : Directorate of Economics & Statistics, Ministry of Agriculture

Annex Chart - 1.1 (v & vi) : Production Shares of Kharif Crops

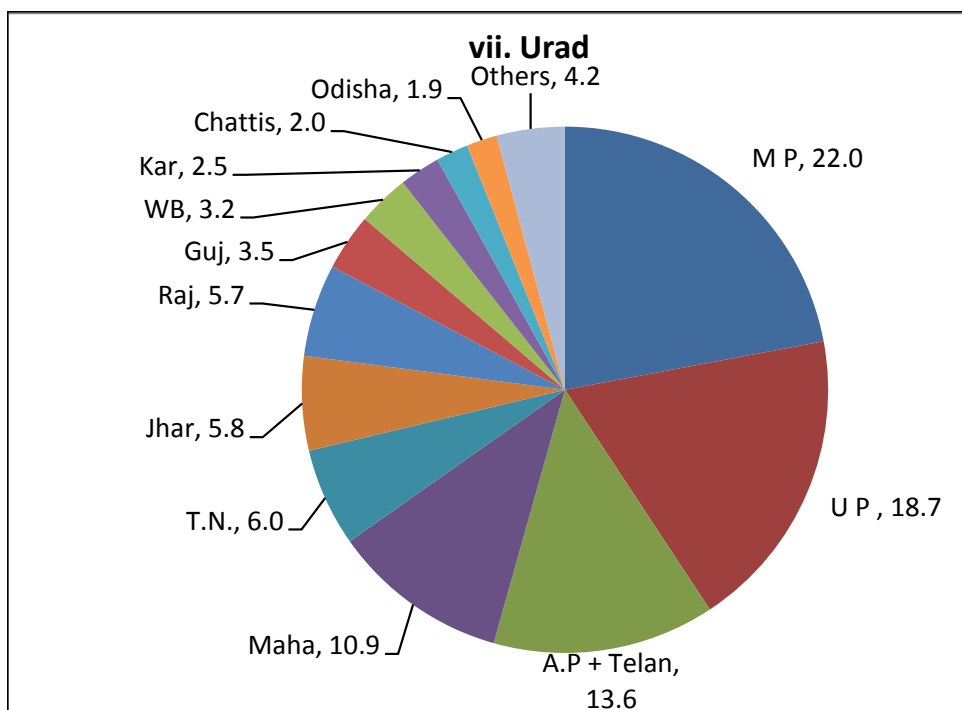


Source : Directorate of Economics & Statistics, Ministry of Agriculture

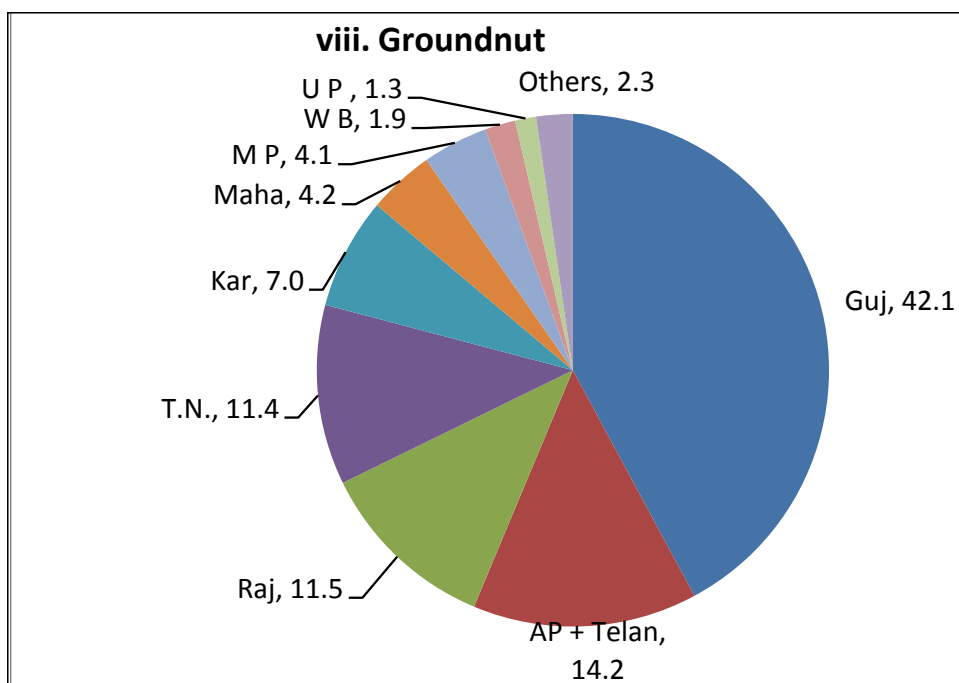


Source : Directorate of Economics & Statistics, Ministry of Agriculture

Annex Chart - 1.1 (vii & viii) : Production Shares of Kharif Crops

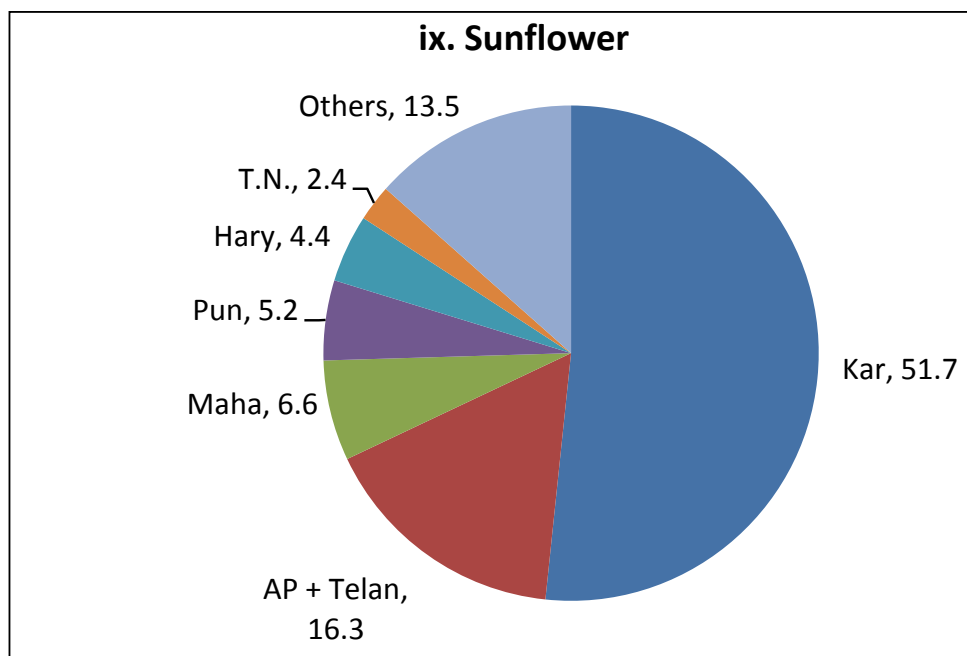


Source : Directorate of Economics & Statistics, Ministry of Agriculture

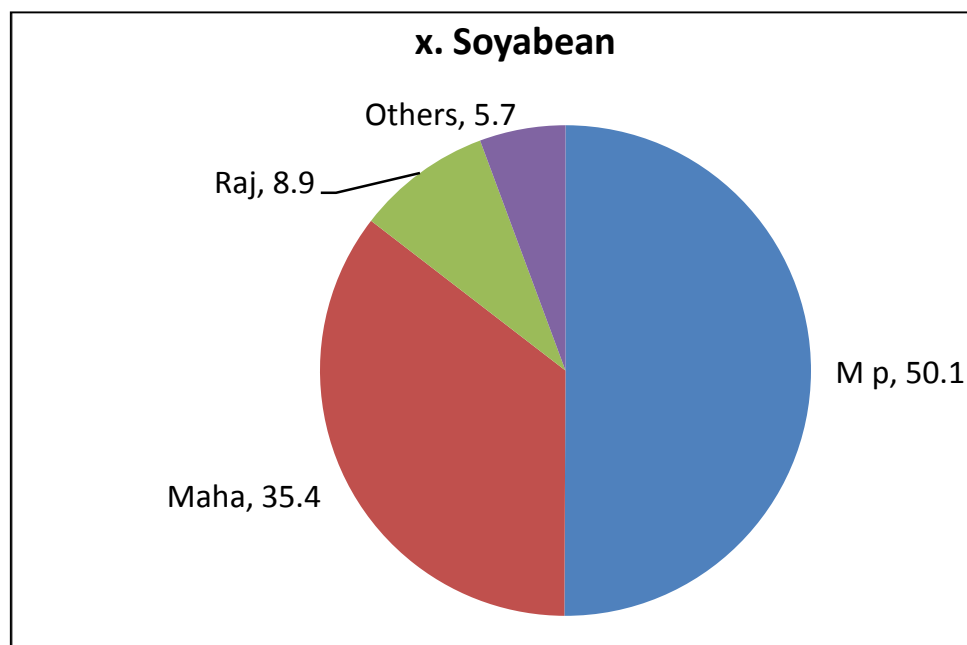


Source : Directorate of Economics & Statistics, Ministry of Agriculture

Annex Chart - 1.1 (ix & x) : Production Shares of Kharif Crops

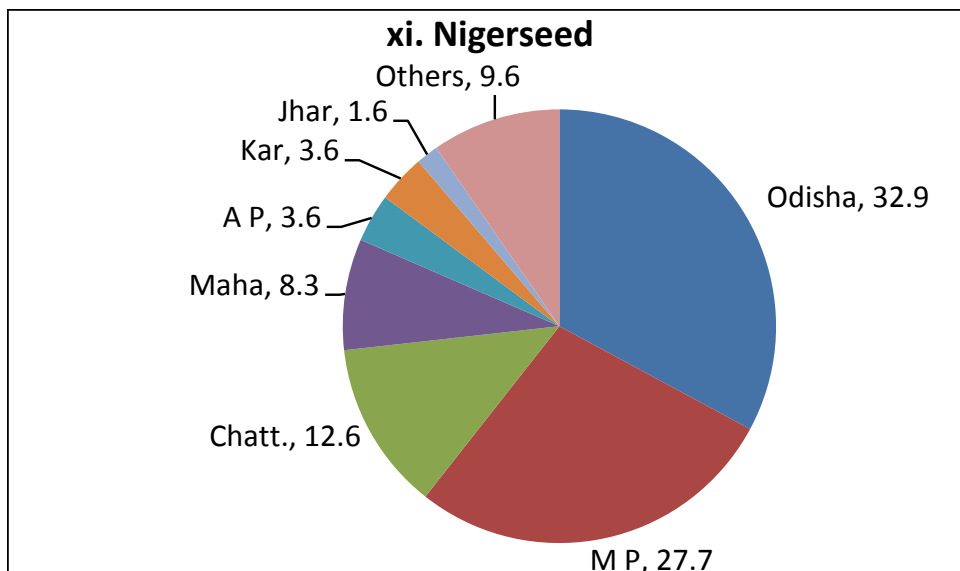


Source : Directorate of Economics & Statistics, Ministry of Agriculture

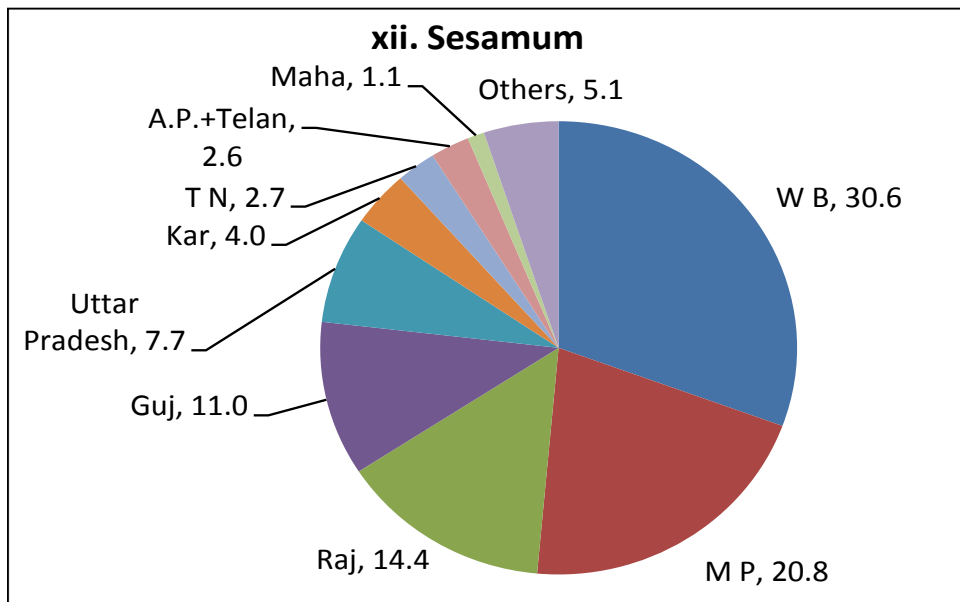


Source : Directorate of Economics & Statistics, Ministry of Agriculture

Annex Chart - 1.1 (xi & xii) : Production Shares of Kharif Crops

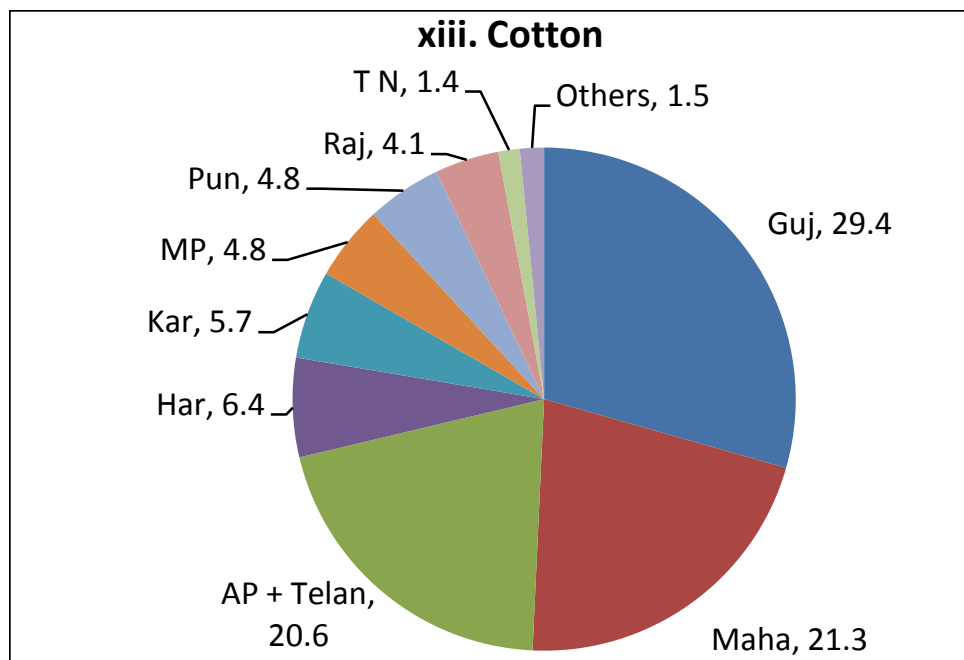


Source : Directorate of Economics & Statistics, Ministry of Agriculture



Source : Directorate of Economics & Statistics, Ministry of Agriculture

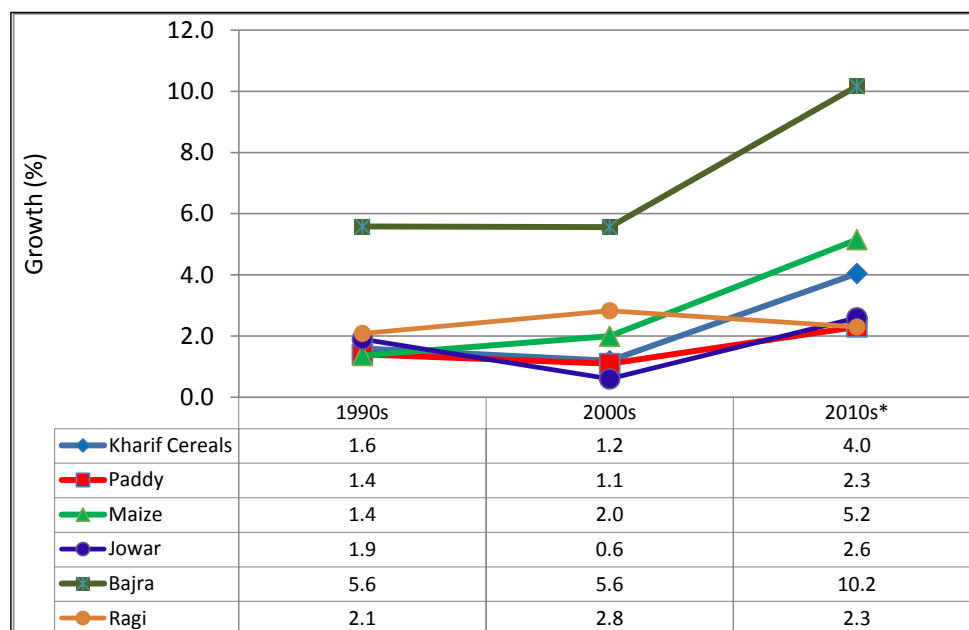
Annex Chart - 1.1 (xiii) : Production Shares of Kharif Crops



Source : Directorate of Economics & Statistics, Ministry of Agriculture

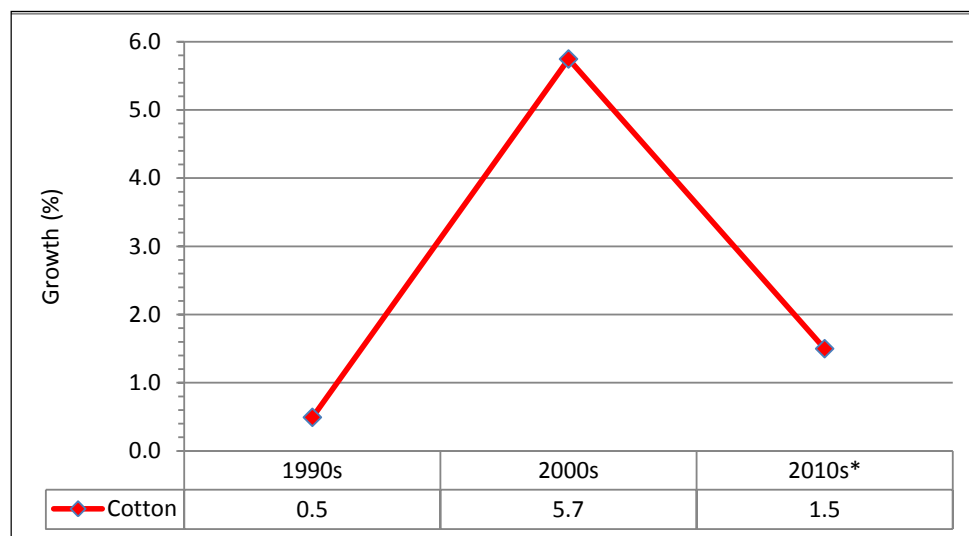
Annex Chart - 3.1 (i) & (ii): Growth in Productivity of Kharif Cereals and Cotton

Chart-3.1 (i) : Kharif Cereals



Source : Directorate of Economics & Statistics, Ministry of Agriculture

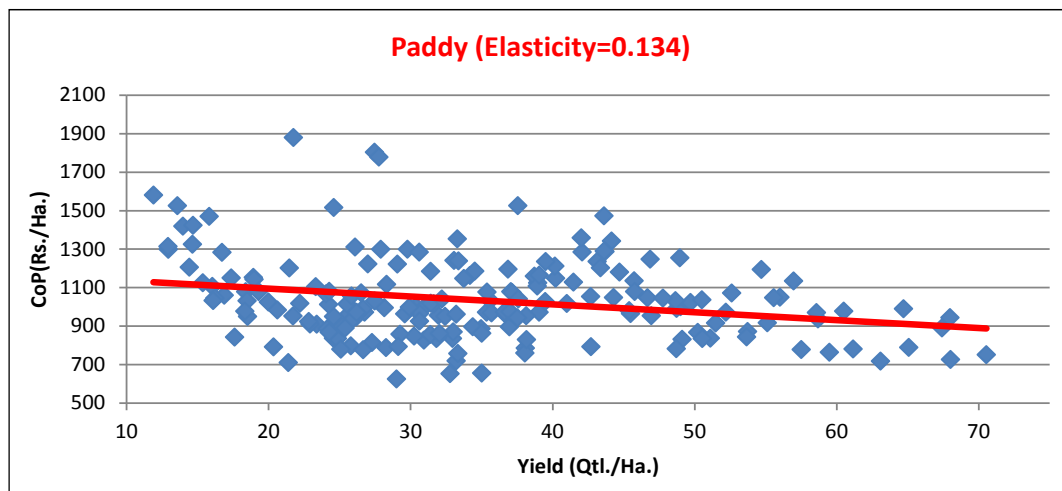
Chart-3.1 (ii) : Cotton



Source : Directorate of Economics & Statistics, Ministry of Agriculture

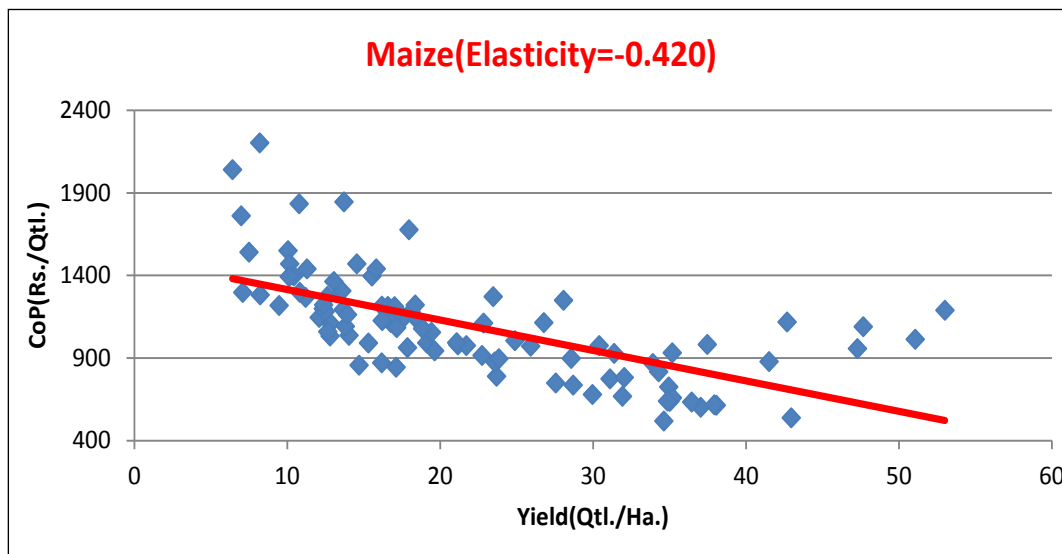
Annex Chart - 3.2 (i) & (ii): Relationship Between Cost of Production and Productivity Levels

Chart-3.2 (i) : Paddy



Source : Directorate of Economics & Statistics, Ministry of Agriculture

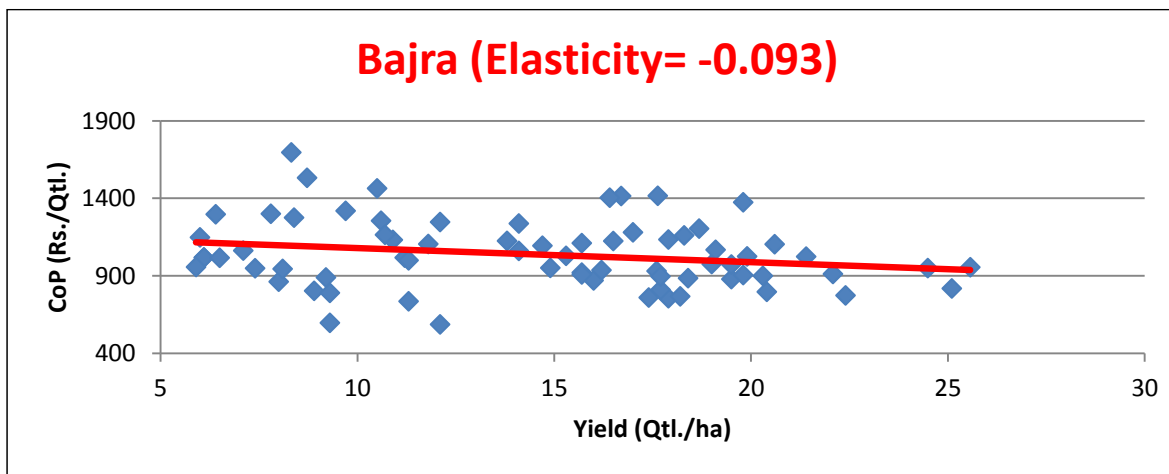
Chart-3.2 (ii) : Maize



Source : Directorate of Economics & Statistics, Ministry of Agriculture

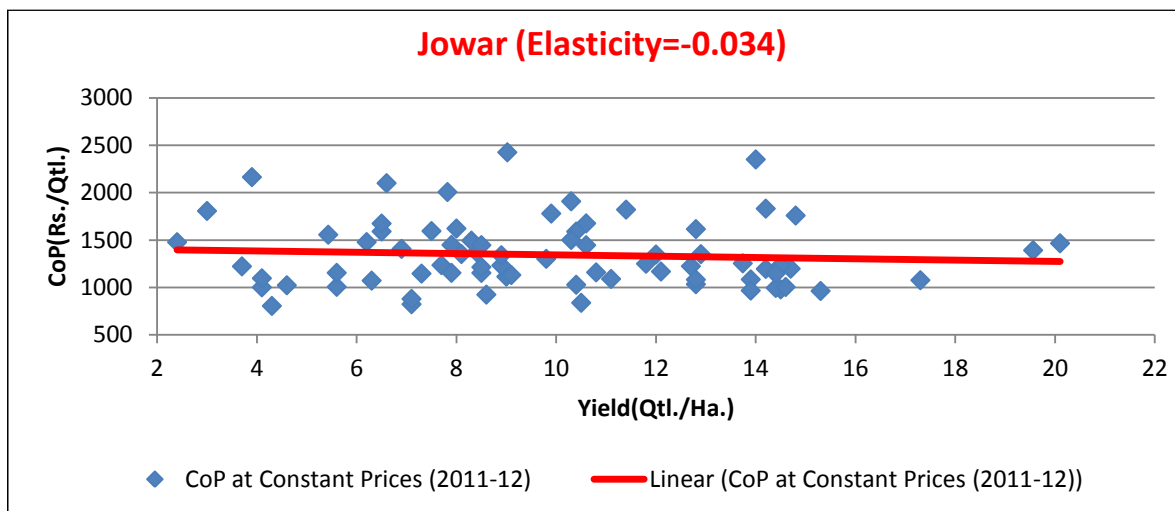
Annex Chart - 3.2 (iii) & (iv): Relationship Between Cost of Production and Productivity Levels

Chart-3.2 (iii) : Bajra



Source : Directorate of Economics & Statistics, Ministry of Agriculture

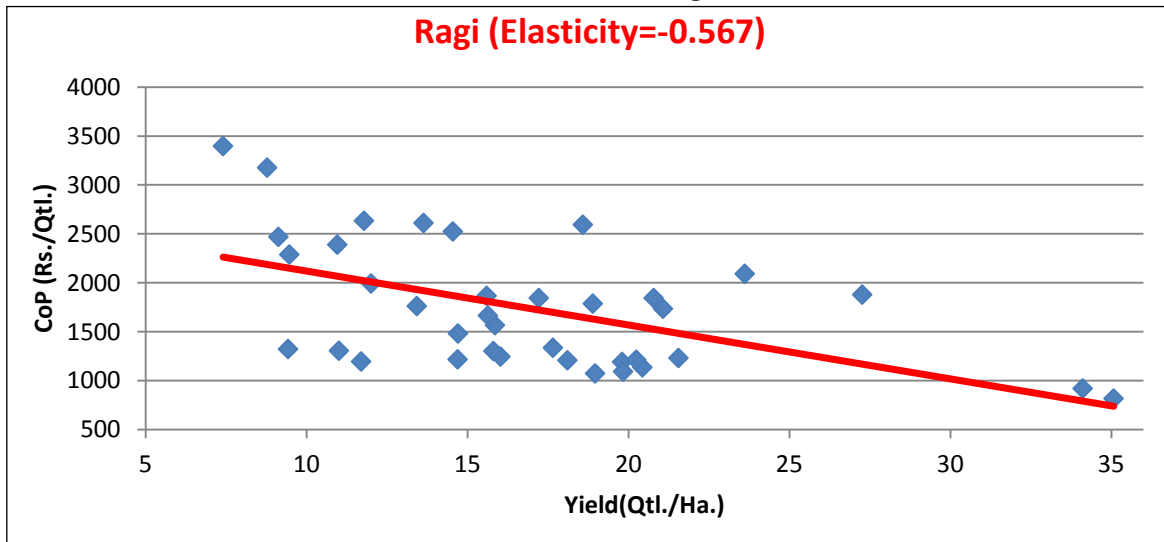
Chart-3.2 (iv) : Jowar



Source : Directorate of Economics & Statistics, Ministry of Agriculture

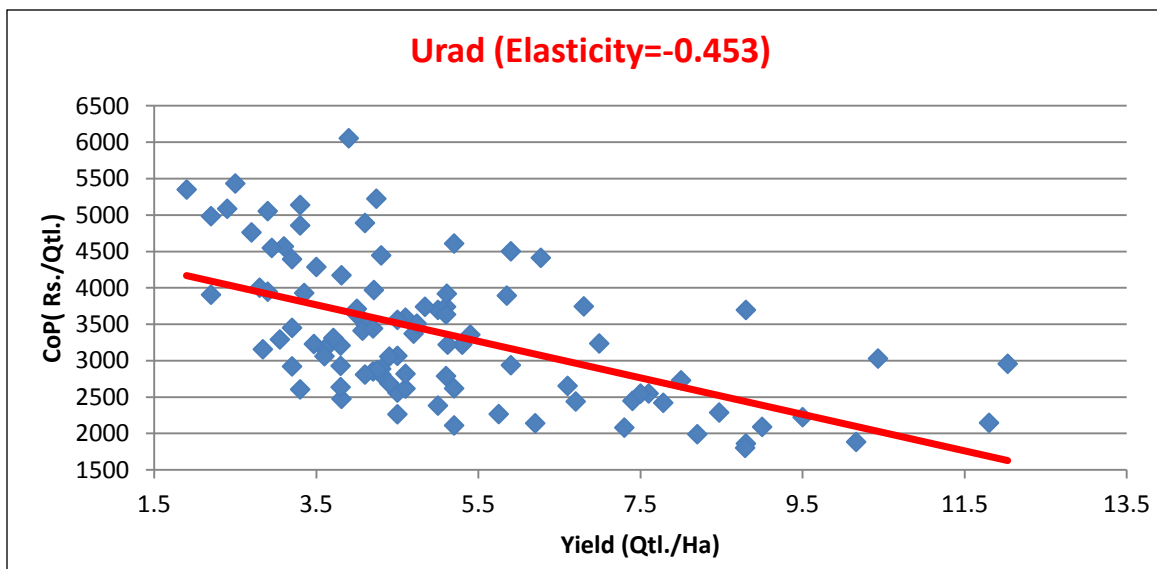
Annex Chart - 3.2 (v) & (vi): Relationship Between Cost of Production and Productivity Levels

Chart-3.2 (v) : Ragi



Source : Directorate of Economics & Statistics, Ministry of Agriculture

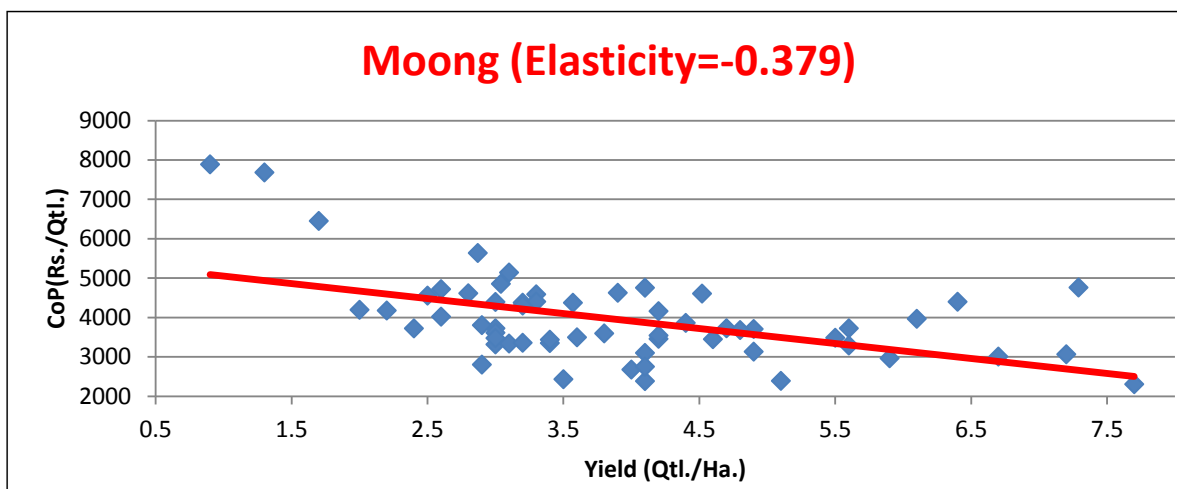
Chart-3.2 (vi) : Urad



Source : Directorate of Economics & Statistics, Ministry of Agriculture

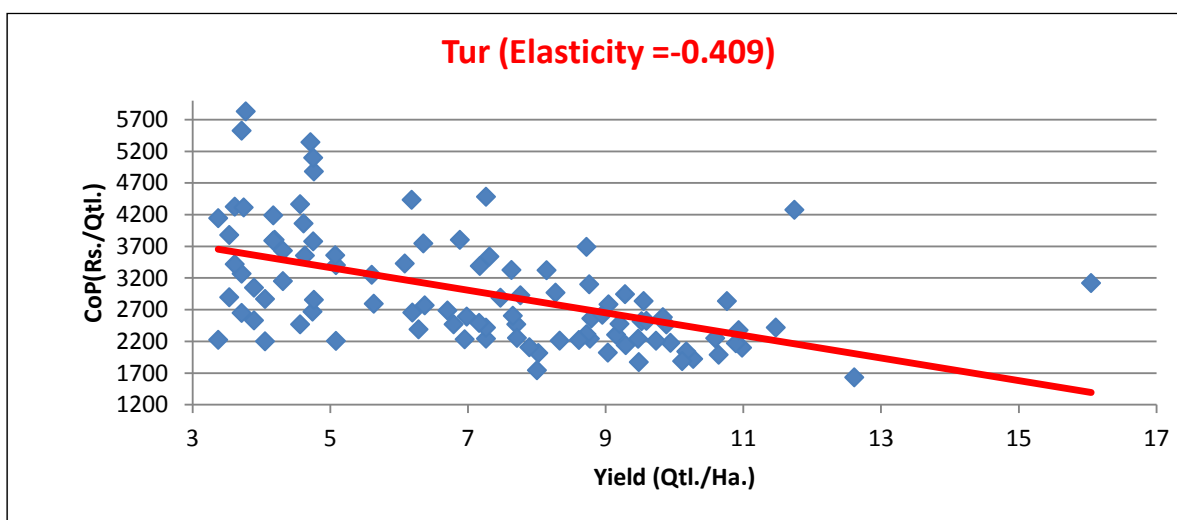
Annex Chart - 3.2 (vii) & (viii): Relationship Between Cost of Production and Productivity Levels

Chart-3.2 (vii) : Moong



Source : Directorate of Economics & Statistics, Ministry of Agriculture

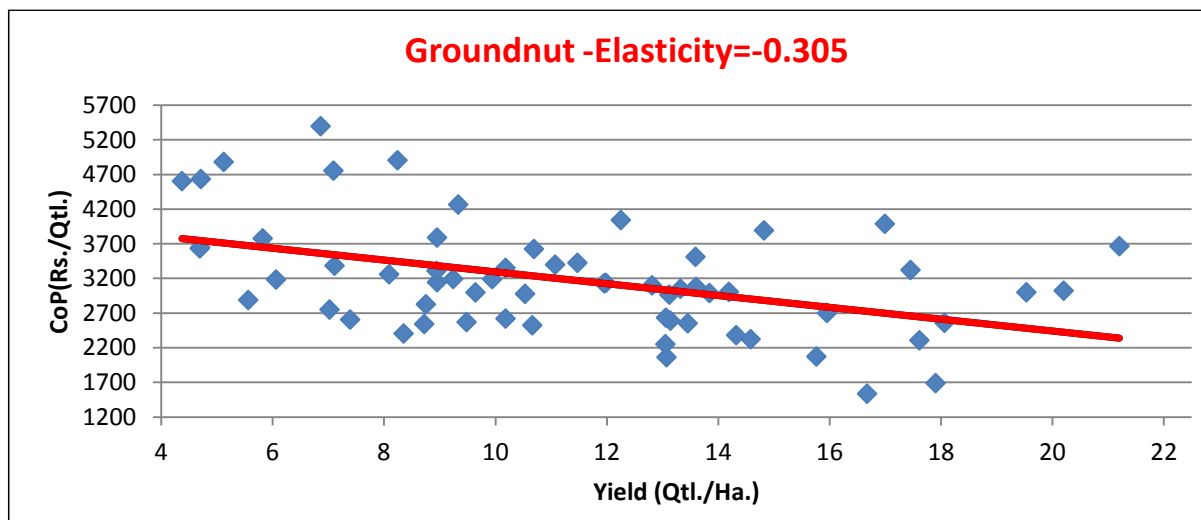
Chart-3.2 (viii) : Tur



Source : Directorate of Economics & Statistics, Ministry of Agriculture

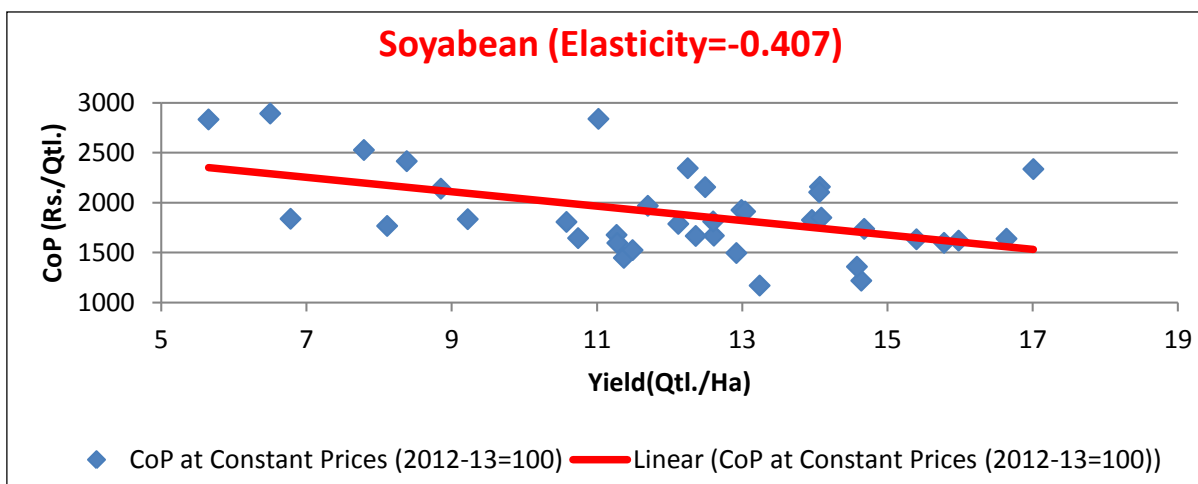
Annex Chart - 3.2 (ix) & (x): Relationship Between Cost of Production and Productivity Levels

Chart-3.2 (ix) : Groundnut



Source : Directorate of Economics & Statistics, Ministry of Agriculture

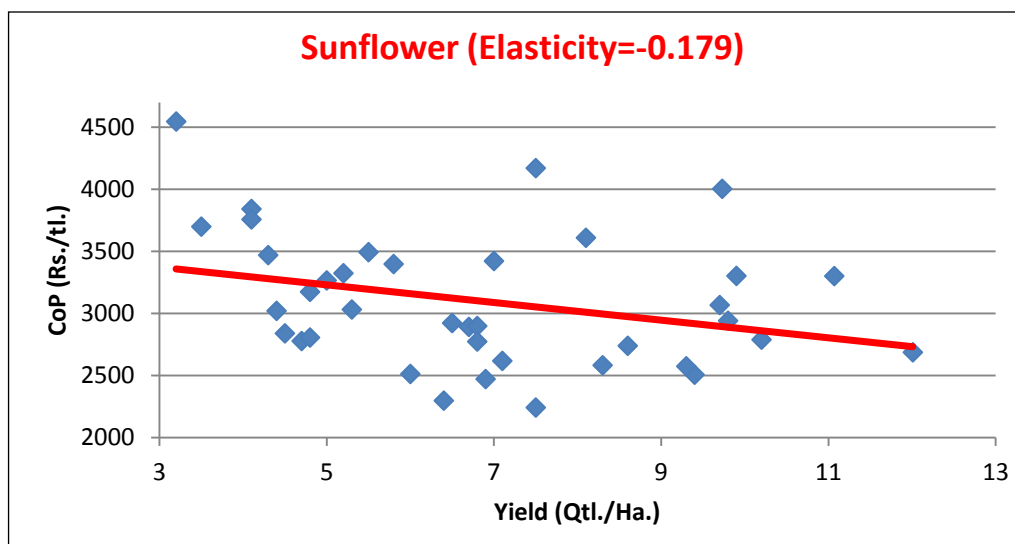
Chart-3.2 (x) : Soyabean



Source : Directorate of Economics & Statistics, Ministry of Agriculture

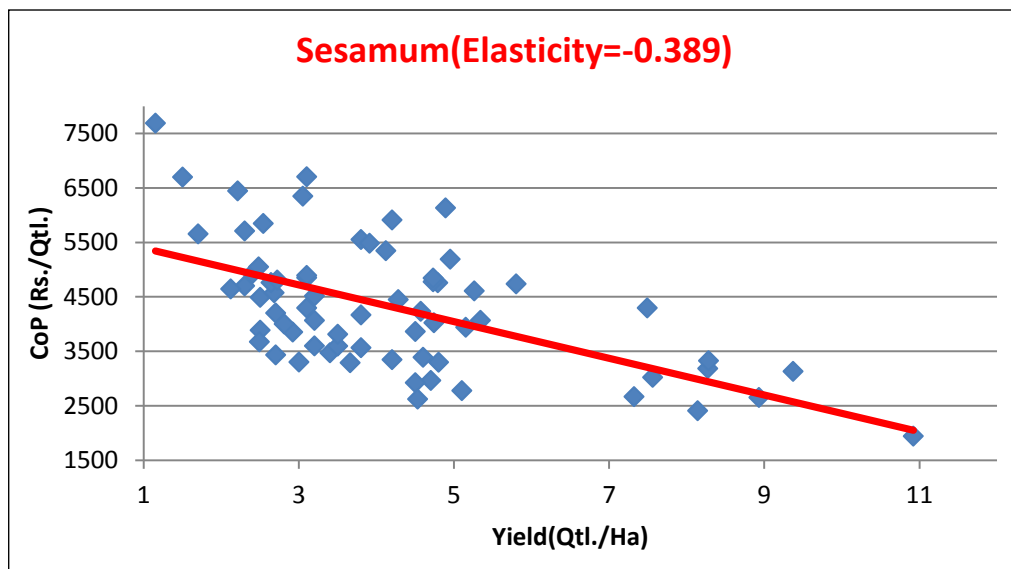
Annex Chart - 3.2 (xi) & (xii): Relationship Between Cost of Production and Productivity Levels

Chart-3.2 (xi) : Sunflower



Source : Directorate of Economics & Statistics, Ministry of Agriculture

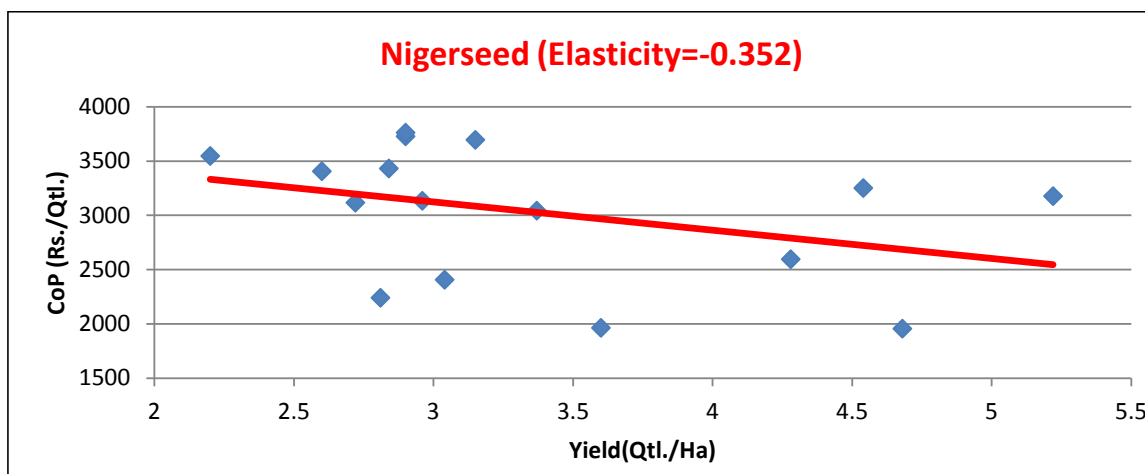
Chart-3.2 (xii) : Sesamum



Source : Directorate of Economics & Statistics, Ministry of Agriculture

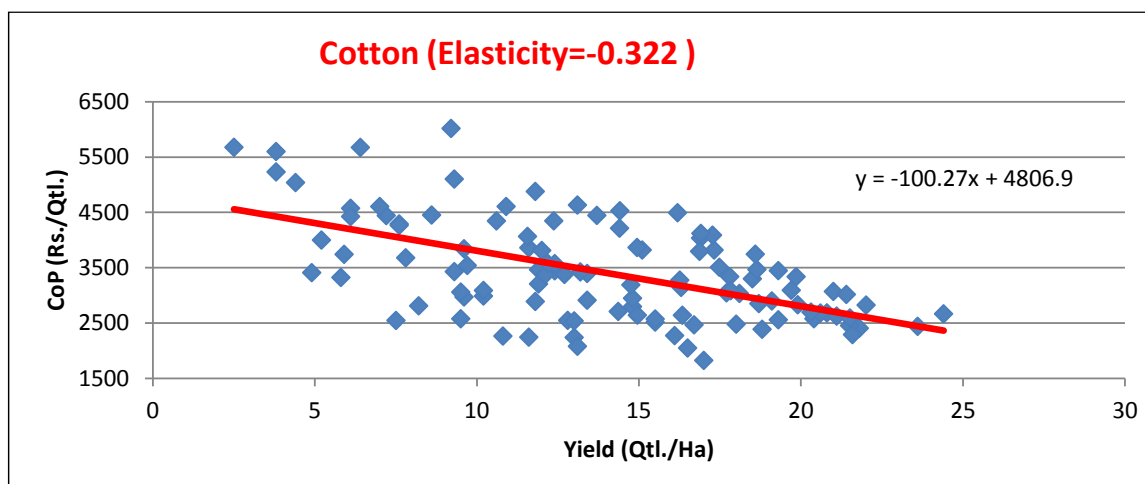
Annex Chart - 3.2 (xiii) & (xiv): Relationship Between Cost of Production and Productivity Levels

Chart-3.2 (xiii) : Nigerseed



Source : Directorate of Economics & Statistics, Ministry of Agriculture

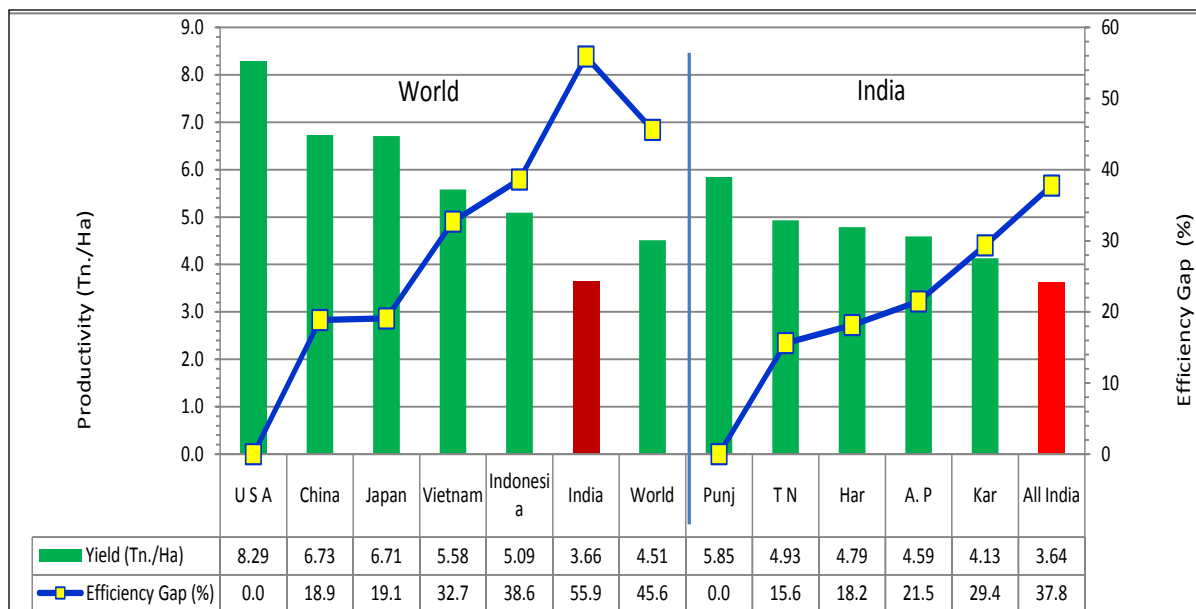
Chart-3.2 (xiv) : Cotton



Source : Directorate of Economics & Statistics, Ministry of Agriculture

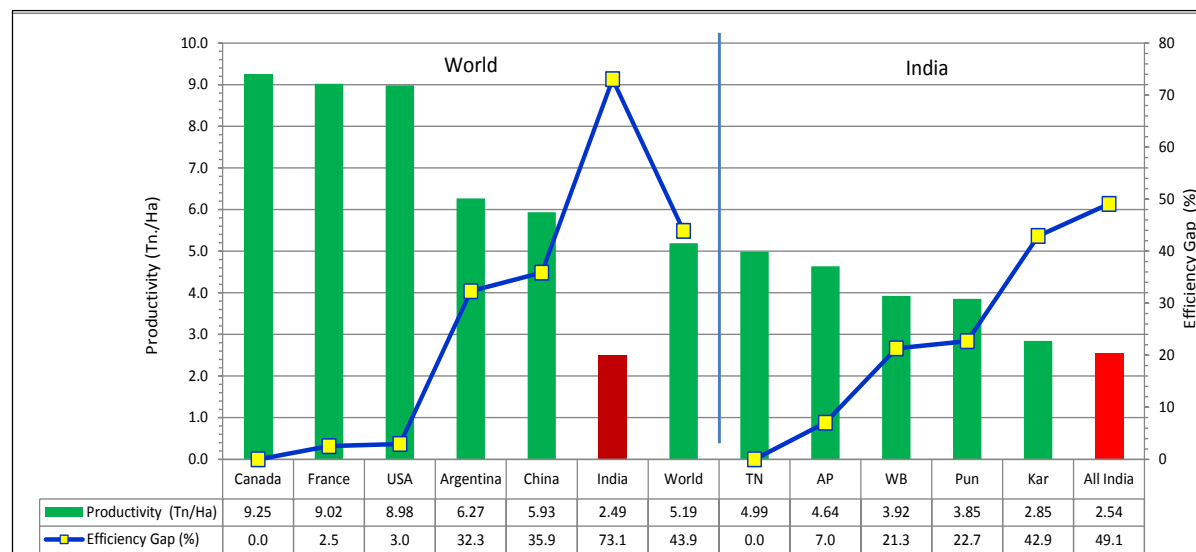
Annex Chart - 3.3 (i) & (ii): Benchmarking of Productivities of Paddy and Maize

Chart-3.3 (i) : Paddy



Source : FAO, DES

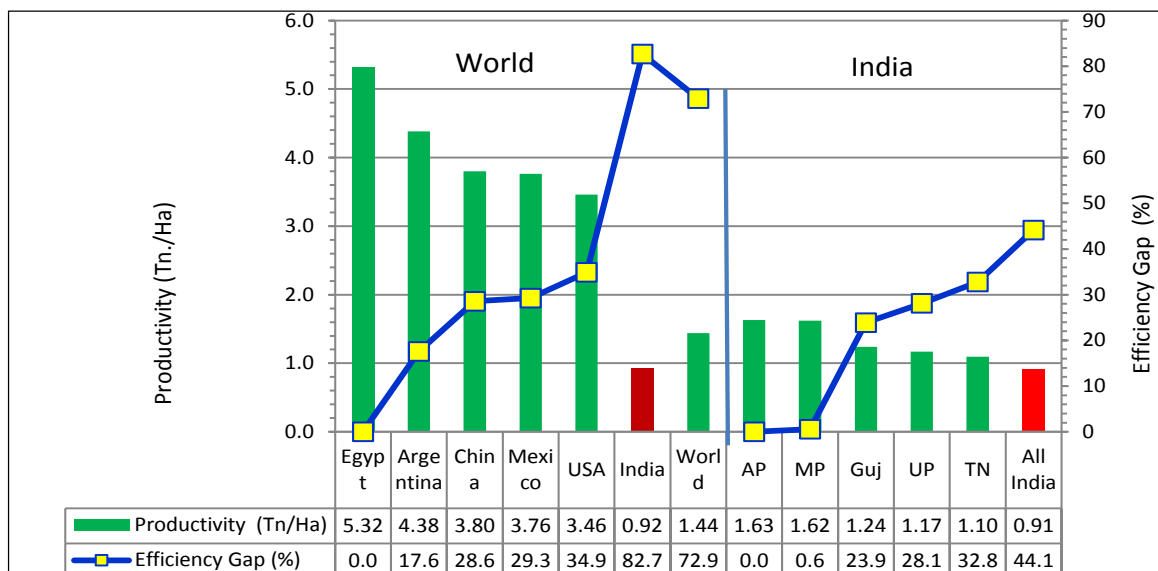
Chart-3.3 (ii) : Maize



Source : FAO, DES

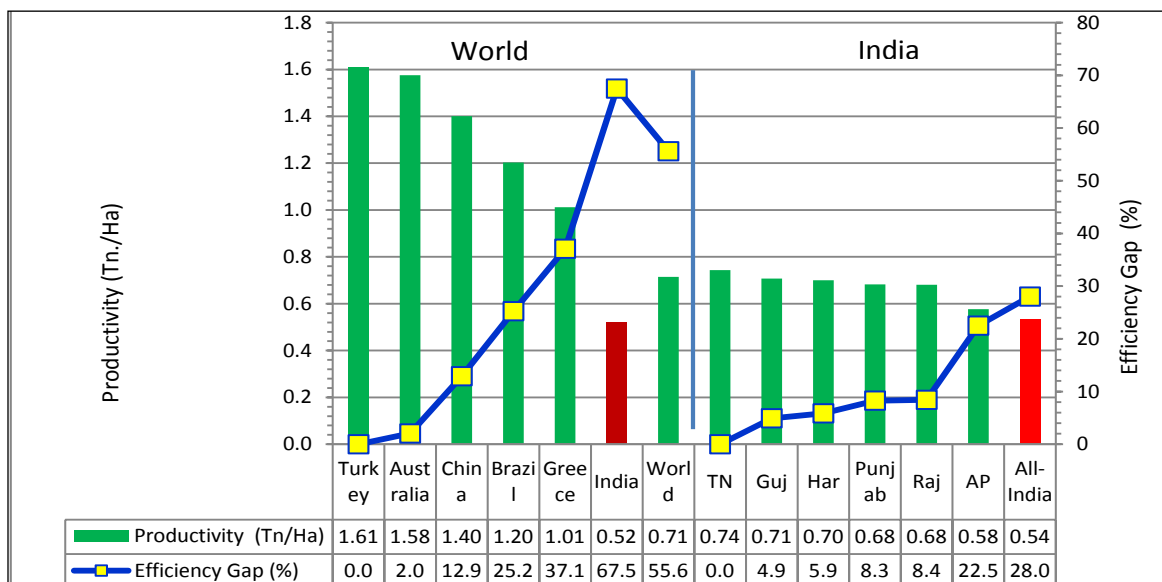
Annex Chart - 3.3 (iii) to (iv): Benchmarking of Productivities of Paddy and Maize

Chart-3.3 (iii) : Jowar



Source : FAO, DES

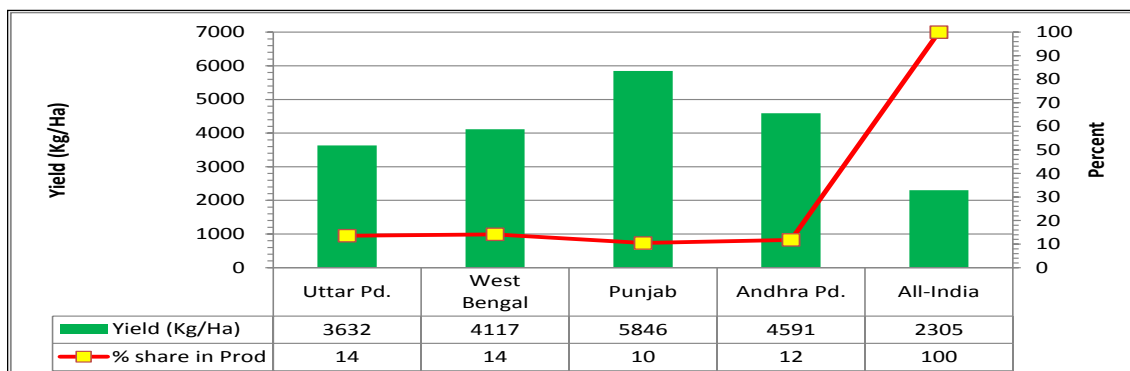
Chart-3.3 (iv) : Cotton



Source : FAO, DES

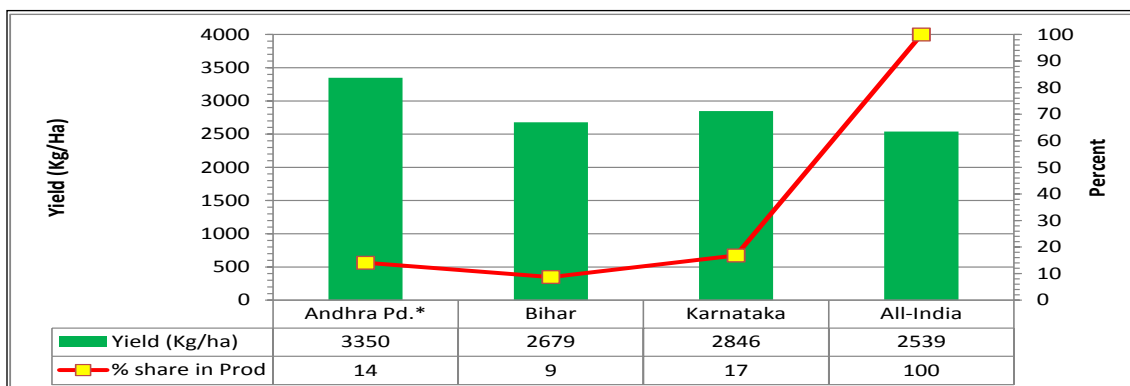
Annex Chart - 3.4 (i) to (iii): State-wise productivities of Paddy, Maize, Cotton and their Shares

Chart-3.4 (i) : Paddy



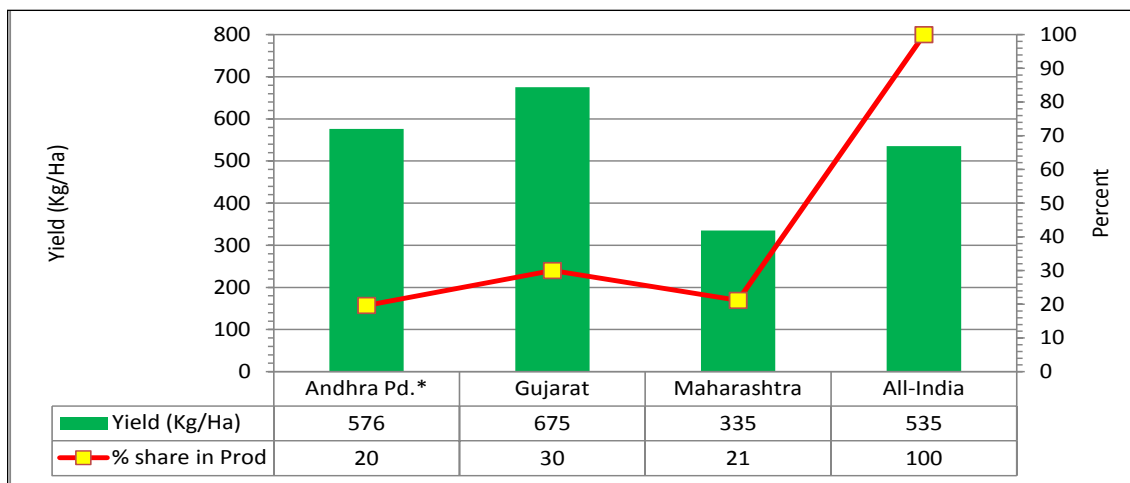
Source : State Governments and DES

Chart-3.3 (ii) : Maize



Source : State Governments and DES

Chart-3.3 (iii) : Cotton



Source : State Governments and DES

Maps

