COMMISSION FOR AGRICULTURAL COSTS AND PRICES

REPORT ON PRICE POLICY FOR KHARIF CROPS OF 2008-2009 SEASON

SUMMARY OF RECOMMENDATIONS

In this report, the Commission for Agricultural Costs and Prices presents its views on the Price Policy for Kharif Crops of 2008-2009 Season. The Commission recommends that the minimum support prices for the kharif crops of 2008-2009 season be fixed at the following levels:

Commodity	Variety	Quality	Minimum Support Price (Rs per quintal)
Paddy	Common	FAQ	1000
	Grade-A	"	1050
Jowar	Hybrid	"	840
	Maldandi	"	860
Bajra	-	"	840
Maize	-	"	840
Ragi	-	"	915
Tur (Arhar)	-	"	2000
Moong	-	"	2520
Urad	-	"	2520
Groundnut-in-shell	-	"	2100
Soyabean	Black	"	1350
	Yellow	"	1390
Sunflowerseed	-	"	2215
Sesamum	-	"	2750
Nigerseed	-	"	2405
Cotton (Kapas):			
(i) Staple length (mm) of 24.5 -25.5 and Micronaire value of 4.3 - 5.1		"	2500
(ii) Staple length (mm) of 29.5 -30.5 and Micronaire value of 3.5 – 4.3		"	3000
VFC Tobacco			
Black soil	F_2 grade	"	4350
Light soil	L_2 grade	"	4550

(Para 4.8)

The Commission further recommends that:

i) ***the prices for different varietal groups of rice be derived from the minimum support prices of paddy on the basis of hulling/milling ratios as well as the processing and incidental charges obtaining in different states***;

ii) ***the prices of varieties of cotton grown in different states, other than those in the groups of Short, Medium, Long and Extra Long Cotton (Kapas) be fixed keeping in view the normal market price differentials between Basic Staple Length of 24.5 mm to 25.5 mm and Micronaire Value 4.3 – 5.1; Long Staple Length 29.5 mm – 30.5 and micronaire value of 3.5 – 4.3 and other varieties and technical parameters;***

iii) ***the prices of grades other than F_2 VFC tobacco grown on black soils be fixed keeping in view the normal market price differentials between F_2 and other grades***;

iv) ***the prices of grades other than L_2 VFC tobacco grown on light soils be fixed keeping in view the normal market price differentials between L_2 and other grades***;

v) ***any future strategy of agricultural development should be based on detailed analysis of likely impact of climate change on crop yields and income, especially in rainfed areas in the coming years and Government should put in place an appropriate coping mechanism, to minimize its adverse effect;*** (Para 1.1)

vi) ***Government should put in place an appropriate administrative as well as physical infrastructure and delivery system for increasing the foodgrains production by about 20 million tonnes, as targetted under the National Food Security Mission during the Eleventh Five Year Plan;*** (Para 1.5)

vii) ***the practice of late and ad hoc announcement of bonus over and above the minimum support prices should be discontinued, as it does not help the farmers to get more income nor does it help the Government to procure much additional quantity of grains****;* (Para 1.8)

viii) ***Central Government should convene a meeting of chief ministers of all states and discuss the issue of rationalization of subsidies on food, fertilizer, power, etc. for additional resource mobilization that would facilitate greater investment in agriculture, rural education and health services. Besides, Government should formulate an appropriate land policy to attract private investment in agro-processing along with rural infrastructure and institutions;*** (Para 1.13)

ix) ***Government should modify its existing agricultural insurance policy to make it more comprehensive and farmer-friendly. The Department of Agriculture and Co-operation seems to have already prepared a comprehensive scheme in this respect which should be considered and implemented involving the participation of Government, private insurance companies as well as farmers' associations or self-help groups;*** (Para 1.14)

x) ***the system of levy price for rice should be gradually done away with, as the benefits of procurement through this route do not generally accrue to farmers and emphasis should be given on procurement of paddy directly from farmers;*** (Para 2.22)

xi) ***a focused plan of action should be spelt out in the form of new policy initiatives for improving the production and productivity of coarse cereals;*** (Para 2.40)

xii) ***the import duty on edible oils should be kept at such a level that does not affect domestic prices and production of edible oilseeds adversely;*** (Para 2.99)

xiii) ***Technology Mission on Oilseeds & Pulses should examine the suggestion of the oil industry to declare cultivation of oil palm as plantation and allow the public and private enterprises to enter in this field and make suitable recommendations to the Government in this regard;*** (Para 2.102)

xiv) ***the Directorate of Economics and Statistics and the Office of the Textile Commissioner, through mutual consultation, should immediately reconcile the production estimates of cotton and a single series of the same be arrived at;*** (para 2.116)

xv) ***the extension machinery of State Governments should be geared up to check marketing of spurious seeds and to educate farmers on the farm practices required for the successful cultivation of Bt cotton, especially in areas affected by farmers' suicide. The Government should also immediately target the water deficient/dryland cotton growing areas for increasing the irrigation coverage through ponds, drip irrigation etc. and*** (Para 2.125)

xvi) ***public distribution system should be streamlined through improved functioning of FCI and other Government as well as co-operative agencies, rationalization of central issue prices and efficient and effective delivery of essential items to properly targetted poor families.*** (Para 4.4)

I. AN OVERVIEW

Indian agriculture continues to depend heavily on rainfall and other weather factors. During the South-West monsoon season (June to September) of 2007, the total rainfall over the country was 105 percent of its long term average. But out of 513 meteorological districts for which data were available, 144 districts had more than 19 percent deficiency in rainfall, 77 districts experienced moderate drought conditions having rainfall deficiency of 26 percent to 50 percent and 30 districts experienced severe drought conditions, having rainfall deficiency of 51 percent and more. Also 164 districts had excess rainfall by 20 percent or more, that caused floods in many places. Besides, climate change seems to have affected crop yields for the past few years in many places and the situation is likely to worsen in future. As the latest Human Development Report points out, the arid and semi-arid areas of India will witness rise in temperature by 3.5^0C by 2050 which will reduce yield and income of farmers, thereby augmenting their poverty levels. Therefore, the Commission recommends that ***any future strategy of agricultural development should be based on detailed analysis of likely impact of climate change on crop yields and income, especially in rainfed areas in the coming years and Government should put in place an appropriate coping mechanism, to minimize its adverse effect.***

1.2 According to the Second Advance Estimates of Crop Production (Directorate of Economics & Statistics, Ministry of Agriculture, Government of India), for the year 2007-08, the performance of kharif crops was not very satisfactory. The production of kharif rice estimated at 81.52 million tonnes was marginally higher than the final estimates of 80.17 million tonnes in 2006-07, while that of bajra declined from 8.4 million tonnes to 8.3 million tonnes. The production of kharif jowar remained more or less constant at 3.7 million tonnes. But output of kharif maize seems to have improved from 11.6 million tonnes in

2006-07 to 14.3 million tonnes in 2007-08, while that of ragi increased from 1.2 million tonnes to 1.9 million tonnes. The production of total kharif pulses reportedly increased from 4.8 million tonnes in 2006-07 to 5.8 million tonnes in 2007-08. The production of total kharif foodgrains was higher by about 5.3 million tonnes. The production of groundnut increased from 3.3 million tonnes in 2006-07 to 5.8 million tonnes in 2007-08. While the production of nigerseed marginally dropped from 1.21 lakh tonnes in 2006-07 to 1.13 lakh tonnes in 2007-08, that of sesamum and sunflower(kharif) marginally improved. But the production of soyabean improved from 8.9 million tonnes in 2006-07 to 9.5 million tonnes in 2007-08. The production of cotton estimated at 233.8 lakh bales in 2007-08 increased by about 7.5 lakh bales. However, the 2007-08 data are not yet final and firm, as there are always large variations between the advance estimates and the final estimates. Also judged in the context of decelerating trend in overall agricultural growth in recent years, marginal improvement in the production of some crops hardly matters in terms of breaking the low level equilibrium trap. Besides, the overall production performance of foodgrains in 2007-08 may not be very good, as acreage under rabi crops, especially wheat has suffered a setback in Madhya Pradesh, Uttar Pradesh, Rajasthan, Bihar, Himachal Pradesh and Jammu & Kashmir due to adverse weather conditions, poor soil moisture and delay in the crushing of sugarcane crop in some places. As compared to last year, the production of wheat is projected to be less by about 1.0 million tonnes.

1.3 During 2000-01 to 2006-07, the average production of kharif rice fluctuated between 63.1 million tonnes in 2002-03 and 80.5 million tonnes in 2001-02, while the yield of kharif rice ranged between 1.7 tonnes per hectare in 2002-03 and 2.0 tonnes per hectare in 2003-04 and 2006-07. The production of kharif jowar varied from 3.7 million tonnes in 2006-07 to 4.8 million tonnes in 2003-04 and the yields of kharif jowar were in the range of 9.4 to 10.8 quintals per hectare. The production of kharif maize was in the range of 10.2 million tonnes in 2000-01 to 12.7 million tonnes in 2003-04, while the average yield of

kharif maize remained lower than 1.9 tonnes per hectare throughout the period. The point that is being made here is that the yields of crops in India are low as compared to those in many other countries of the world and also fluctuate from year to year. This raises an issue of appropriate technological innovations for yield improvement.

1.4 The Draft Eleventh Five Year Plan points out that there was an improvement in the growth performance of Indian agriculture during 2005-06 to 2006-07 as the yearly growth rate of agriculture and allied sectors was 4.35 percent. However, any such short term growth for one or two years means very little, since the average annual growth rate of the sector during the Tenth Five Year Plan period was only 2.29 percent. The average annual growth rates of output of cereals, total crop sector, livestock and fishery during the Tenth Five Year Plan period worked out to 0.66 percent, 1.88 percent, 3.56 percent and 3.40 percent, respectively. In fact, annual growth rates of almost all the kharif crops under consideration excepting maize, tur, moong and urad either declined or decelerated in the latter period quite sharply. Reversing the decelerating trend in agricultural output and putting Indian agriculture on a higher growth trajectory for the purpose of overall accelerated and inclusive growth is the real challenge before India's planners and policy makers.

1.5 During 1995-96 to 2006-07, average annual growth rate of foodgrains production in the country was about 0.85 percent as against 2.74 percent during 1985-86 to 1995-96. The present slow growth in the production of foodgrains would fall short of the annual growth rate of demand for foodgrains estimated at 2.2 percent per year during the Tenth Five Year Plan. The total demand for foodgrains has been estimated at 235.4 million tonnes by 2011 and 280.6 million tonnes by the year 2020-21, as against the present record production of 217.3 million tonnes in the year 2006-07. The National Food Security Mission launched by the Ministry of Agriculture, Government of India, in 2007-08 aims at enhancing the production of rice, wheat and pulses by about 20 million tonnes by 2011-12.

While the achievement of Mission's objective of producing about 236 million tonnes of foodgrains by 2011-12 may meet the demand for foodgrains at the end of the Eleventh Five Year Plan, there remains a real challenge of providing an integrated support system to achieve the same. The National Food Security Mission is being implemented in 305 districts of 16 states of the country, at an estimated total outlay of Rs. 4882.48 crore during the Eleventh Plan period. While there is no resource constraint as such, effective and efficient utilization of the financial resources earmarked for the mission activities would be crucial. Besides, in many places, local level factors including poor administrative as well as physical infrastructure and delivery system may stand in the way of achieving the Mission's objective. This Commission recommends that ***Government should put in place an appropriate administrative as well as physical infrastructure and delivery system for increasing the foodgrains production by about 20 million tonnes, as targetted under the National Food Security Mission during the Eleventh Five Year Plan****.*

1.6 In the past 2 to 3 years, the issue of agrarian crisis in the country has come to the centrestage of discussion by all concerned. This is not only because of acute poverty and indebtedness of farm households, resulting in high incidence of suicide by farmers in many places, but also because of the failure of the Food Corporation of India and other State agencies to procure adequate quantity of wheat for Public Distribution System and other schemes during 2006 and 2007 and the country resorted to import of wheat from abroad at high prices. In fact, increased import of pulses and edible oils in the past few years along with the current compulsion for importing wheat in order to improve the buffer stock position as well as to meet the PDS needs, have raised doubts about the effectiveness of India's food security system, even though on grounds of efficiency and price stability, import of such commodities could be unavoidable at times. During 2006-07, India imported about 2.27 million tonnes of pulses, 5.78 million tonnes of wheat and 4.27 million tonnes of edible oils. The country also exported 4.75 million tonnes of rice and 2.5 lakh tonnes of pulses in 2006-07. In

October, 2007, however, Government announced a ban of export of non-basmati rice, later replaced by the application of a minimum export price of US $425 per tonne, (now $500 per tonne) which in fact discourages exports.

1.7 There is a declining trend in the procurement of rice and wheat for central pool during the past few years. The procurement of rice declined from 27.66 million tonnes in 2005-06 to 25.08 million tonnes in 2006-07 and that of wheat declined from 16.80 million tonnes in 2004-05 to 9.23 million tonnes in 2006-07. In 2007-08, about 11.13 million tonnes of wheat was procured, while the procurement of rice upto February 04, 2008 was 17.37 million tonnes as against 17.01 million tonnes during the same period in the previous year. However, the stock level of rice marginally declined in 2007-08 over the previous year (Table-2.12). As on October 1, 2007 the stock of rice in Central Pool worked out to only 5.49 million tonnes as against the buffer norm of 5.20 million tonnes, while that of wheat was 10.12 million tonnes as against the buffer norm of 11.00 million tonnes. As on January 1, 2008, the stock of rice was estimated at 11.50 million tonnes and that of wheat at 7.70 million tonnes. The likely stock of rice is estimated at 13.50 million tonnes as on April 1, 2009 which will be marginally above the stipulated buffer norm of 12.20 million tonnes. A similar situation would emerge with respect to the stock of wheat which is estimated at 4.20 million tonnes as on April 1, 2009 as against the buffer norm of 4.0 million tonnes. The offtake of rice in both 2005-06 and 2006-07 remained more or less constant at 25.1 million tonnes, but the offtake of wheat declined from 17.17 million tonnes in 2005-06 to 11.71 million tonnes in 2006-07.

1.8 Despite substantial hike in the minimum support prices of wheat and rice, there was not much improvement in the procurement of grains during 2007-08 marketing season. The minimum support prices were hiked from Rs.580 per quintal in 2006-07 to Rs.645 per quintal in 2007-08 for paddy common and from Rs.610 per quintal to Rs.675 per quintal for paddy grade A. In addition, the Government fixed bonus of Rs. 40 per quintal in 2006-07 and Rs 100 per quintal,

in 2007-08 even though the announcement of bonus was delayed. As a matter of fact, late announcement of bonus did not benefit most farmers, as the produce was already sold by them to private traders. The Commission recommends that ***the practice of late and ad hoc announcement of bonus over and above the minimum support prices should be discontinued, as it does not help the farmers to get more income nor does it help the Government to procure much additional quantity of grains***. In the case of wheat, the minimum support price was raised from Rs. 650 plus bonus of Rs.50 per quintal in 2006-07 to Rs 750 plus bonus of Rs. 100 per quintal, while the procurement of wheat increased only marginally from 9.23 million tonnes in 2006-07 to 11.13 million tonnes in 2007-08, which is much lower than 16.80 million tonnes procured in 2004-05. This was so in spite of the fact that production of wheat in 2006-07 was higher than that in 2004-05. Therefore, the main reason for low levels of procurement could be higher market prices, as private companies paid a little higher price than MSP and had increased share in the marketing of wheat. It is time that Government reviews its procurement strategy and devises ways and means to compete for grain marketing with private companies. The minimum support price of wheat has been further raised to Rs 1000 per quintal for the year 2008-09. Even though such a substantial hike in the MSP of wheat is justified for encouraging farmers to produce more wheat through both acreage expansion and more careful management of farm, this seems to have created an imbalance in inter-crop price parity between wheat and other crops. Besides, this has reportedly agitated the minds of paddy growers, especially in Southern and Eastern India as if there is discrimination against them vis-à-vis wheat growers of North India. Notwithstanding these minor irritants, it should be noted that demand-supply situation in the case of rice also is quite precarious both domestically and globally. The supply of rice has been estimated at 82.93 million tonnes in 2008-09, as against the projected demand of 87.55 million tonnes.

1.9 During 2007-08, the market prices of almost all agricultural commodities under consideration remained buoyant in most places. The index of average wholesale prices (WPI) of foodgrains (base 1993-94=100) increased from 177.5 in 2004-05 to 187.0 in 2005-06, 206.0 in 2006-07 and 214.2 in 2007 (upto December). The WPI of rice went up from 174.5 in 2005-06 to 179.6 in 2006-07 and 190.1 in 2007 (upto December). In the case of jowar, it was up from 244.5 in 2005-06 to 272.0 in 2006-07 and 306.7 in 2007 and in the case of bajra, it rose from 210.9 in 2005-06 to 227.6 in 2006-07 and 235.6 in 2007. The WPI of maize went up from 205.0 in 2005-06 to 224.9 in 2006-07 and 235.6 in 2007. The wholesale prices of most kharif pulses and oilseeds also increased quite substantially. The average WPI of tur increased from 170.8 in 2005-06 to 182.0 in 2006-07 and ranged between 194.0 and 209.3 during April-December, 2007. In the case of moong, it increased from 219.2 in 2005-06 to 303.0 in 2006-07 and between 246.4 and 309.5 during April-December, 2007. The WPI of urad rose from 270.4 in 2005-06 to 403.8 in 2006-07, but subsequently came down in the range of 306.6 and 380.5 during April-December, 2007. The WPI of groundnut rose from 171.9 in 2005-06 to 190.0 in 2006-07 and ranged between 251.0 in July, 2007 and 225.8 in November, 2007. The WPI of Sunflower seed increased from 188.7 in 2005-06 to 197.7 in 2006-07 and were in the range of 224.6 to 255.2 during April-December, 2007. The WPI of soyabean declined from 157.5 in 2005-06 to 144.9 in 2006-07, but went up quite sharply during April-November, 2007. The WPI of nigerseed rose abnormally from 179.8 in November, 2005 to 214.9 in November, 2006 and 432.8 in November, 2007. The average WPI of raw cotton increased from 144.3 in 2005-06 to 151.7 in 2006-07 and 175.0 during April-December, 2007. Even though the minimum support prices of VFC tobacco were not raised for the last 4 years, the average price realized in 2006 was substantially higher in the case of SLS, BLS and KLS varieties.

1.10 World cereal production in 2007 has been estimated at 2109 million tonnes, about 5 percent up from the previous years' harvest (Food Outlook, November, 2007). The world wheat output may stand at 602 million tonnes, up

by one percent from 2006. The global rice production has been estimated at 429 million tonnes which is marginally higher than that of the last year. In the case of maize, production level reached a record high, estimated at 781 million tonnes in 2007. The world jowar output was also 8 percent up from last year. The global production of edible oilseeds in 2007-08 is anticipated to decline by 3 percent from the last years' record level. Production of soyabean is estimated to decline by 6 percent and that of sunflowerseed by 10 percent. Even though the production of groundnut would be up slightly, there will be an overall decline in the production of edible oilseeds. The world cotton production marginally declined from 26.74 million tonnes in 2006-07 to 26.02 million tonnes in 2007-08, while the year ending stock was down from 12.76 million tonnes in 2006-07 to 11.36 million tonnes in 2007-08.

1.11 Despite a marginal increase in the production of cereals in 2007, the international prices of all major cereals remained high in 2007, because of overall tight supply amidst strong demand. In October, 2007, the United States' hard wheat (HRW, No. 2, f.o.b) averaged US $ 335.1 per tonne, about 58 percent higher than last year. The international prices of coarse grains in 2007 remained above that of the last year, because of strong demand and tight export supplies. The United States' Yellow maize averaged $164.1 per tonne in October, 2007, about 15.4 percent higher than 2006. The international prices of maize averaged $ 117.4 per metric tonne to $ 154.0 per metric tonne in July-September, 2007. In late October, the CBOT March, 2008, Maize futures stood at US $ 151 per tonne, i.e., about $ 20 above the corresponding period in 2007. Similarly, the international rice prices have shown rising trends due to strong import demand from the European Union. The average price of rice (Thai, 5% broken) increased from $ 312.4 per metric tonne in July-September, 2006 to $ 327.1 per metric tonne in July-September, 2007. It is anticipated that international rice prices would remain high in 2008, due to several factors. First, the total volume of rice held by five major rice exporting countries, namely, India, Pakistan, Thailand, Vietnam and the United States remains unchanged at 24 million tonnes, while

their consumption level would increase. Besides, export trade in rice from India, Vietnam and Egypt would be lower due to increased tariffs and taxes. As a result of all these factors, world rice prices could undergo further increases. The international prices of edible oils increased significantly in 2007 over the year and the same rising trend is likely to continue in 2008. The rising trend in the consumption of vegetable oils coupled with overall decline in production and increased demand for vegetable oils for bio-diesel requirements would continue to push the international prices of edible oilseeds up. Thus, high domestic as well as international prices of most agricultural commodities may induce the Indian farmers to produce and also earn more income. However, it is not yet certain whether economic viability of small farms would significantly improve from any marginal improvement in yield and prices of traditional crops.

1.12 A recent farm situation survey by NSSO reveals that in most places, farms below 4 hectares do not earn enough income from crop farming to stay above the poverty line. Therefore, small farm diversification in favour of high value crops and other enterprises would be necessary to enable small farmers to be on the growth path. Access to off-farm and non-farm income would hold the key to their viability and sustainability. Unfortunately, poor rural infrastructure in most places and regressive nature of some government policies stand in the way of accelerated and diversified rural growth. More particularly, reforms in land leasing policy, provision for farm youth's access to quality education and training for upward occupational mobility, and provisions of appropriate rural infrastructure and institutions would be essential for diversification and viability of small farms.

1.13 No doubt, there may be a significant improvement in public investment in agriculture and education in the next four to five years, as indicated in the Draft Eleventh Five Year Plan document. But any further increase in investment on rural infrastructure and institutions would require additional resource mobilization by way of increased taxation, rationalization of subsidies on food, fertilizer,

power, etc. and improved resource use efficiency. Besides, strong agriculture-industry linkages may help improve the situation. Therefore, the Commission recommends that ***Central Government should convene a meeting of chief ministers of all states and discuss the issue of rationalization of subsidies on food, fertilizer, power, etc. for additional resource mobilization that would facilitate greater investment in agriculture, rural education and health services. Besides, Government should formulate an appropriate land policy to attract private investment in agro-processing along with rural infrastructure and institutions.***

1.14 There is frequent, albeit unwelcome, visit of floods, drought, hailstorm, abnormal rise in temperature and attack of pests and diseases in many places which make farming a risky occupation. At times, these events have not only a crippling effect on farmers' ability to save and invest in agriculture, but also make them more indebted and poor. Unfortunately, there is no appropriate system of risk management at present and even the existing National Agriculture Insurance Policy does not adequately cover various risks and is not so user-friendly. The Commission, therefore, recommends that ***Government should modify its existing agricultural insurance policy to make it more comprehensive and farmer-friendly. The Department of Agriculture and Co-operation seems to have already prepared a comprehensive scheme in this respect which should be considered and implemented involving the participation of Government, private insurance companies as well as farmers' associations or self-help groups.***

II . PRICE SUPPORT OPERATIONS, CROP SITUATION, MARKET BEHAVIOUR, PROCUREMENT, DISTRIBUTION AND STOCKS

Minimum Support Price

Submitting its Report on Price Policy for Kharif Crops of 2007-08 on March 13, 2007, the Commission recommended, *inter alia*, Minimum Support Prices (MSP) for fair average quality (FAQ) of various crops to be fixed at the following levels:

(Rs. per quintal)

Crop	Variety	MSP fixed by Government for 2006-07 Season	MSP recommended by CACP for 2007-08 Season	MSP fixed by Government for 2007-08 Season
1	2	3	4	5
Paddy	Common	580®	645	645 ©
Paddy	Grade-A	610®	675	675 ©
Jowar	(Hybrid)	540	600	600
Jowar	(Maldandi)	555	620	620
Bajra		540	600	600
Maize		540	620	620
Ragi		540	600	600
Tur(Arhar)		1410	1550	1550(#)
Moong		1520	1700	1700(#)
Urad		1520	1700	1700(#)
Groundnut-in-shell		1520	1550	1550
Soyabean(Black)		900	910	910
Soyabean(Yellow)		1020	1050	1050
Sunflower-seed		1500	1510	1510
Sesamum		1560	1580	1580
Nigerseed		1220	1240	1240
Cotton (F-414/H-777) (Medium Staple length)		1770	1800	1800
Cotton (H-4) (Long Staple Length)		1990	2030	2030
VFC Tobacco Black soil	F2 Grade	3200	3400	3200
VFC Tobacco Light soil	L2 Grade	3400	3600	3400

® : An additional incentive bonus of Rs. 40 per quintal is payable on procurement between 1.10.2006 to 31.3.2007. This will be subject to the condition that state Government fully exempt this bonus amount from all state taxes and levies.

© : An additional incentive bonus of Rs. 100 per quintal for paddy for 2007-08 entire kharif marketing season (Rs.50 vide Notification dated 9.10.2007 and Rs.50 vide Notification dated 15.11.2007).

: An additional incentive bonus of Rs. 40 per quintal be given over and above the MSP for 2007-08 season.

2.2 The Government announced the kharif price policy for cereals, pulses, oilseeds and raw cotton on May 17, 2007, fixing MSP at levels recommended by the Commission. However, the Commission had recommended a separate MSP for the Basmati variety of paddy which was not approved by the Government. Also, an additional incentive bonus of Rs. 100.00 per quintal for paddy for 2007-08 kharif marketing season (Rs.50/- vide Notification dated 9-10-2007 and Rs.50/- vide Notification dated 15-11-2007) and Rs. 40 per quintal for tur, moong and urad were announced. The Textile Commissioner fixed the MSPs for different varieties of raw cotton on 06.08.2007, keeping in view the normal market price differentials and other relevant factors, namely, staple length and micronaire value. The Government on October 24, 2007 announced the MSP for tobacco for 2007-08 season at Rs. 32 per kg for F2 and Rs. 34 per kg for L2 grades.

Price Support Arrangements

2.3 The uniform specifications of paddy, rice, and coarse grains for procurement for the Central Pool during the kharif marketing season 2007-2008, were notified by the Government on 23rd August, 2007. These specifications have fixed the maximum limit for moisture content at 17 percent for paddy, 14 percent for rice, jowar, bajra and maize, and 12 percent for ragi. The levy prices of rice, common as well as grade-A varieties, were also notified by the Central Government to the State Governments.

2.4 The uniform specifications of paddy, rice and coarse grains for the central pool, as mentioned above, have been announced by the Government, keeping in view the intent for improving the quality as well as for enabling smooth procurement. Accordingly, other than for moisture content, the specifications lay down the maximum limits for refractions such as foreign matter, damaged, discoloured, sprouted and weevilled grains, immature grains, etc. The limits prescribed vary from item to item. As brought out in the previous report of this Commission, there have been instances when relaxations from the specified

standards were allowed to meet the requests and requirements of some states whose crops were adversely affected by weather-related causes. The Commission reiterates that any such relaxations in quality norms should be made uniformly applicable for all the states so that there would be no scope for discontentment among the cultivators of deprived states.

Rice

2.5 According to the Second Advance Estimates of Foodgrains production for the year 2007-08, released by the Directorate of Economics and Statistics (DES), Ministry of Agriculture, the kharif rice production for the year is likely to be 81.52 million tonnes, an increase of 1.35 million tonnes over the last year. However, the estimated production would be only 1.0 million tonnes higher than that achieved in 2001-02. The scenario has to be perceived in the background of the massive National Food Security Mission (NFSM) which has since been operationalised for boosting up the output of rice, wheat and pulses. Perhaps the unfavourable weather conditions and floods in several producer States that played havoc with the crop might have influenced the low-scale estimation of rice production.

(Table 2.1)

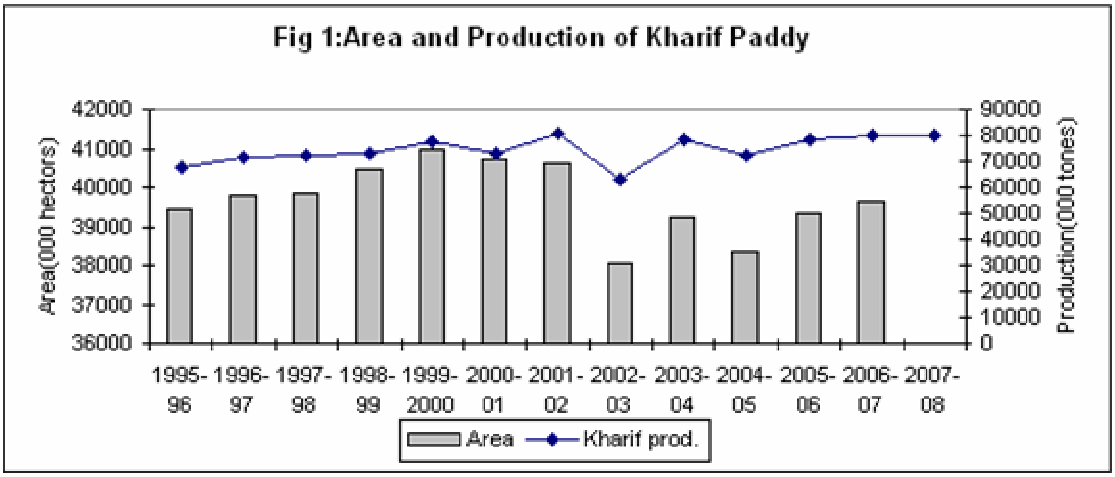
2.6 An analysis of the trends in total rice production over the period 1995-96 to 2006-07 exhibit an overall growth rate of 0.98 per cent, alongwith ups and downs. There was steady increase from 76.98 million tonnes in the year 1995-96 to 93.34 million tonnes in 2001-02, except an aberration in the year 2000-01 when the production dropped to a low level of 84.98 million tonnes. However, after 2001-02, there was a sharp dip in production to 71.82 million tonnes, the lowest level of production recorded during 2002-03. Thereafter, the recovery has been steady, barring the year 2004-05, and arrived at the level of 93.35 million tonnes in 2006-07. The kharif production of 81.52 million tonnes estimated for the year 2007-08 is marginally higher than the targetted production of 80.00 million tonnes for the year. An analysis of the production performance during the period 1985-86 to 2006-07 reveals that the growth rate of rice production during 1995-

96 to 2006-07 considerably decelerated. Whereas the overall growth rate during the period 1985-86 to 1995-96 was 3.00 per cent per year, during 1995-96 to 2006-07 it was only 0.98 per cent, engendering an overall lower growth rate of 1.77 per cent per year for the entire period. Thus, stagnancy prevailed over India's rice production during the past decade. (Table 2.2)

2.7 The area coverage under rice production during the period 1995-96 to 2006-07 was in the range of 41 to 45 million hectares. The early phase of this period exhibited indications of expansion, from 42.84 million hectares in 1995-96 to 45.16 million hectares in 1999-2000, which remained as the record area devoted to rice production. It took an unprecedented dip in the year 2002-03 to 41.18 million hectares which was the trough under rice produced area during this period. This was followed by improvements coupled with fluctuations and remained as 43.81 million hectares in the year 2006-07. The annual growth rate in area during the period 1995-96 to 2006-07 was (-) 0.17 per cent.

(Tables 2.1 & 2.2)

Chart-1



2.8 The yield levels did not register any major changes during the period 1995-96 to 2006-07, except for some year to year fluctuations and marginal improvements. The period generated an overall annual growth rate of 1.15 per cent. While the year 2001-02 was marked by substantial improvement in yield to 2079 kgs/ha, this was followed by a drop to 1744 kgs/ha in the next year, the

lowest yield of paddy during this period. However, after the year 2004-05, there was steady recovery and the yield reached the record level of 2131 kgs/ha during the year 2006-07. It is a matter of concern to observe that the annual growth in yield during the period was only 1.15 per cent as against 2.40 per cent during the period 1985-86 to 1995-96, and the overall growth rate of 1.45 per cent during the whole period 1985-86 to 2006-07. This throws further light on the stagnancy in paddy production during the past decade vis-à-vis the period prior to that. The performance in respect of all the three indicators, viz., growth in area, production, and yield, corroborates this. (Tables 2.1& 2.2)

2.9 A break-up of the growth rate of rice production is revealing. During the period between 1985-86 and 2006-07, it was 1.77 per cent of which acreage expansion accounted for 0.32 per cent and yield enhancement 1.45 per cent. However, during the period 1985-86 to 1995-96, the break-up was 0.59 per cent from area expansion and 2.40 per cent from growth in yield which got transformed to -0.17 per cent from growth in area and 1.15 per cent from growth in yield during the period 1995-96 to 2006-07. Indeed, there was a glaring deceleration of growth in the latter period. This was mainly caused by the considerable decline in area than by the slower growth in yield. Certainly, the growth in paddy production in India is governed more by the changes in area under cultivation than by the movements in yield. During the period 1995-96 to 2006-07, this was evident, except for the year 2001-02 when despite only a marginal increase in area coverage, there was remarkable increase in production, governed by the greater increase in productivity. This has got major implications for taking strategic initiatives in the sector. The Commission suggests that in view of limited scope for area expansion under rice and pulses, the thrust has to be on enhancement of yield. Technologies for better crop production should be formulated and disseminated among farmers through proper research and extension programmes in order to overcome the stagnancy in production. (Table 2.2)

2.10 The production profile in respect of the major States was in accord with the all-India situation. In Andhra Pradesh, the growth in production during the period 1995-96 to 2006-07 was only 0.73 per cent, mainly because of the decline in area coverage and marginal decline in yield. Bihar and Jharkhand together recorded -1.65 per cent growth in production, because of the decline in yield, as against a positive growth in yield during the earlier period of 1985-86 to 1995-96. However, the performance of Haryana was distinct: despite the relatively low growth in area coverage during 1995-96 to 2006-07, the growth in production was remarkable, due to the growth in yield. The States of Karnataka, Madhya Pradesh & Chhattisgarh, Tamil Nadu, West Bengal and Orissa registered decline in growth rates during 1995-96 to 2006-07, due to declines in area as well as yield. In the State of Punjab, despite decline in growth in area, the growth in production was impressive because of the growth in yield, during the period 1995-96 to 2006-07 vis-à-vis the period prior to this. However, in the States of Uttar Pradesh and Uttarakhand, despite positive growth in area, there was decline in production growth consequent to the considerable decline in yield. As regards the kharif season 2006-07, the States of Haryana, Andhra Pradesh, Bihar and Jharkhand, moved towards increase in production, while the States of Karnataka, Orissa, Punjab and West Bengal indicated declines, as per the Final Estimates.

2.11 The area under rice increased both in Punjab and Haryana by 2.26 per cent and 3.62 per cent respectively, during the period 1985-86 to 2006-07. However, increase in the area under paddy in these two states may not be taken as a healthy trend, since the paddy-wheat crop rotation tends to deteriorate the soil health and also deplete groundwater. In the not so distant future, this could imperil sustainability of agriculture in these states, unless effective interventions are brought into operation through crop diversion. The states of eastern India including Assam, Bihar, Chattisgarh and Orissa offer alternative locations for paddy cultivation and for making up the deficits in this regard. The yield levels of these states are to be necessarily enhanced. The NFSM may be tailored

accordingly. The Commission is of the view that Government should pay greater attention and support to the eastern states of the country for growth of paddy production by utilizing the favourable agro-climatic conditions prevailing there.

2.12 It is well known that no attempt to raise farm productivity will deliver the goods unless more arable land is brought under assured irrigation. In India, the poor growth in surface irrigation compels the farmers to rely heavily on groundwater irrigation. This increased dependence on groundwater increases the cost of cultivation. It also depletes the water level and adds to the rate of well failures. As rice grown under irrigated conditions is confronting the threat of water shortage, there has to be a paradigm shift towards maximizing output per unit of water instead of per unit of land.

2.13 Hybrid rice has emerged as a proven technology. Its proper adoption can go a long way in obviating the current yield stagnation and low profitability and making visible the achievement of higher production targets. The recent progress in hybrid rice programmes in countries like Vietnam, Philippines and China evidence this. Average yields of hybrid are greater relative to that of high yielding varieties. Further, hybrids are short duration with better resistance to major pests and diseases as well as unfavourable soil conditions. Effective and systematic efforts to develop and use this technology in India materialized after the 1980s, and the area coverage attained under hybrid rice has been about 2.5 per cent of the total rice area. The Commission is of the view that the adoption of hybrid rice technology needs to be further accelerated, by strengthening the research and institutional systems of both public and private sectors and by providing adequate policy support. The present constraints arising from the inadequate flow of quality hybrid seeds at affordable prices, lack of area-specific approaches for popularization of hybrid rice, etc., are to be overcome on priority. The system of rice intensification (SRI) also needs to be further popularized among farmers for getting better productivity.

2.14 Of late, the farm sector has started showing signs of diminishing returns on inputs, soil fatigue and stagnating crop productivity, termed as 'second generation problems'. This is putting in jeopardy the on-going attempts to raise paddy production. Land and water management should get prioritized. The poor management of land and water resources that featured the era of Green Revolution and its post years, should not be repeated.

2.15 The data released by the International Rice Research Institute (IRRI) shows that the rate of growth of India's rice production is the lowest in Asia.

Growth in Rice production in Asia (1961-2005)

Country	Growth in Production (%)
Pakistan	335
Myanmar	259
Sri Lanka	250
China	226
Bangladesh	178
Thailand	166
India	144

(Source: World Rice Statistics from IRRI).

It could be observed that India's growth rate of rice is lower than that of even smaller countries like Pakistan, Myanmar, Sri Lanka, etc.

2.16 It is generally felt that there is a technology fatigue in the Indian agriculture, which needs to be addressed in order to accelerate the rate of growth of the sector. By and large, the farmers still use rice varieties released nearly 20 years ago. Development of new seeds and technology for arid and semi-arid regions has not been encouraging. Considering the high variability in agro-climatic conditions, research has to become increasingly location-specific. Also, provision of extension that played an important role during the Green Revolution,

cannot be over-emphasized. Further, the economics of rice cultivation has to be improved by finding alternative uses for by-products like rice straw.

Market Behaviour, Procurement, Distribution, Stocks, Demand & Supply Balance and Trade.

2.17 The market prices of rice have been looking up from the year 2006-07. The average index number of wholesale prices of rice for nine months (April, 2007-December, 2007) at 190.1 showed an increase of 5.9 per cent over the previous year. Month-end actual prices of paddy during December, 2007 was the highest in Andhra Pradesh at Rs.1050 per quintal, in Gujarat Rs.905 per quintal followed by Kerala at Rs. 900 per quintal and Rs. 780 in West Bengal.

(Table 2.14)

2.18 During the visit of the Commission to various states, it could be observed that in quite a few places, the paddy prices were less than MSP. During the post-harvest months of October-December, 2007, the wholesale price of paddy ruled below MSP (including bonus) in Sasaram, Bihar (Rs. 600), Sagara, Karnataka (Rs. 650), Bilaspur, Chattisgarh (Rs. 718), Kolhapur and Gondia, Maharashtra (Rs. 688-730), Sambalpur, Orissa (Rs. 597), Mainpuri, Uttar Pradesh (Rs. 660-670) and Sainthya & Bankura, West Bengal (Rs. 660-710) mainly because of poor or no arrangements for procurement at MSPs. Evidently, in respect of defending the MSP, several states which have opted for decentralized procurement, have not brought out the requisite alertness and infrastructure in their MSP operations. (Annexure-I)

2.19 The scheme of decentralized procurement of foodgrains that was introduced in 1999 is presently in vogue in the states of Chattisgarh, Karnataka, Kerala, Orissa, Tamil Nadu, West Bengal, Uttar Pradesh and Uttarakhand. The main intent was that this would avoid criss-cross movement of grains and consequential higher costs of transportation and also generate greater vigilance

among state governments in defending MSP. Over the years, it has been experienced that excepting a few states, the operation of this new mode of procurement has not been satisfactory. The not so timely reimbursement by the Central Government of the incurrence of state governments, inadequate storage facilities with the state governments, etc., have posed difficulties in the way to success of this innovative arrangement. Accordingly, the Commission would re-emphasise that the Central Government should carry out an evaluation of the operation of decentralized implementation of MSP by the state governments and come out with measures for its further improvement. It was informed by the Department of Food in the course of discussions that they have requested the Planning Commission to conduct the evaluation. This has to be got done on priority basis.

Procurement

2.20 The procurement of rice during 2007-08 (as on February 04, 2008) was 17.37 million tonnes, which was lower by 7.71 million tonnes vis-à-vis the 25.08 million tonnes procured during 2006-07. The rice procurement has been highest in the year 2005-06 (27.66 million tonnes). During the current year, the maximum procurement of 7.51 million tonnes was made in Punjab, followed by 2.34 million tonnes in Chattisgarh, 2.16 million tonnes in Andhra Pradesh, 1.95 million tonnes in Uttar Pradesh and 1.54 million tonnes in Haryana. The dip in procurement has been more pronounced in the states such as Jharkhand and Rajasthan. This is despite the Government's announcement of a total amount of Rs.100/- as bonus (Rs. 50/- on 9-10-2007 and another Rs. 50/- on 15-11-2007) per quintal of paddy for the KMS 2007-08, in a bid to significantly push up the flagging procurement of the grain for the Central pool. The Central Government procures rice mainly from Punjab, Uttar Pradesh, Orissa, Haryana, Chhattisgarh and Andhra Pradesh.

(Table 2.8)

2.21 Lower stocks of foodgrains in Central pool restricts the capacity of the Government to contain the spiralling open market prices. A combination of

factors such as stagnant production, low level of buffer stock and the Government's inability to procure the targetted quantum of rice so far in the season, has created the potential for rise in prices. In this scenario, there may not be much of an option but to resort to aggressive purchase by the Government to augment the lower stocks or import as has been attempted in the case of wheat. But, import may not be a viable option as international rice prices are already soaring high. If India, a major consumer of rice in the world, turns out to be a large importer, it will add pressure on the demand side, pushing up prices in the international market. Moreover, international supply situation is quite tight in this respect.

2.22 Procurement of paddy is made in the primary form as well as through the levy route of rice. The Commission reiterates its earlier recommendation that ***the system of levy price for rice should be gradually done away with, as the benefits of procurement through this route do not generally accrue to farmers and emphasis should be given on procurement of paddy directly from farmers.*** Further, there has to be an essential distinction between Minimum Support Price (MSP) and procurement price at which Government buys grains for various purposes including buffer stocking operations and public distribution system (PDS). This is since the intent of implementing MSP is only to prevent distress sale by farmers, whereas procurements undertaken by the Government are for different public welfare purposes, which are to be on commercial basis guided by the prevailing market dynamics. The experience over the years indicate that the announcement of bonus could not fulfil the intended purpose. Hence, it is the considered view of the Commission that the announcement of bonus, and that too in piecemeal form, may not be resorted to. Instead, the procurement has to be based on commercial considerations, guided by the prevailing market dynamics.

2.23 Revised policy guidelines were issued by the Department of Food in October, 2007 on the involvement of cooperatives, State undertakings and

private sector companies for procurement for the Central pool. The guidelines have been stated to be made sufficiently stringent to ensure that such participations would not adversely affect Central pool purchase. The new guidelines allow private sector involvement primarily in those areas where procurement by the FCI has weak infrastructure and State Government establishments are not adequate for the procurement operations.

Offtake

2.24 Total offtake of foodgrains during 2006-07 was 36.8 million tonnes. Of this, the offtake of rice and wheat was 25.06 million tonnes and 11.71 million tonnes respectively. As against the previous year, the offtake of rice was lower by only 0.02 million tonnes and that of wheat was lower by 5.46 million tonnes. The offtake of rice was 21.25 million tonnes under Targetted Public Distribution System (TPDS) and 3.81 million tonnes under other schemes. The various measures taken by the government to manage the offtake of foodgrains, inter alia, include: (a) Implementation of foodgrains based Sampoorna Gramin Rojgar Yojana (SGRY); (b) Allocation of foodgrains under the Food for Work and the special component of the SGRY programme; (c) Expansion of the scope of Antyodaya Anna Yojana, so as to cover 2.5 crore families under below poverty line (BPL), (d) Discontinuation of the practice of permitting export of foodgrains from government's stocks, (e) Continuation with open market sale of stocks of wheat and rice. (Table 2.11)

Stock

2.25 Rice and wheat stock held by the FCI and the state agencies as on 1st January, 2008 was 11.50 million tonnes and 7.70 million tonnes respectively, Against this scenario, the likely stock of rice is estimated at 13.50 million tonnes as on April 1, 2009, which would be 1.30 million tonnes more than the stipulated buffer norm of 12.20 million tonnes. Similarly, probable official stock of wheat at

4.20 million tonnes as on April 1, 2009 would be higher by 0.20 million tonnes than the buffer norm of 4.0 million tonnes as is illustrated in the table 2.1.

Table.2.1: Projected Stocks in the Central Pool

(Million Tonnes)

	Rice	Wheat
Official Stock as on 01.01.08 (Rounded off)	11.50	7.70
Likely Procurement during Jan-March 2008	8.00	0.00
Likely Offtake during Jan-March 2008	6.00	3.50
Likely Stock as on 01.04.08	13.50	4.20
Likely Procurement during 2008-09	25.00	12.00
Likely Imports during 2008-09	0.00	0.00
Likely Offtake during 2008-09	25.00	12.00
Likely Stock as on 01.04.09	13.50	4.20
Buffer Norm requirement for 1st April	**12.20**	**4.00**

Demand and Supply

2.26 Consumption demand for rice and wheat for 2008-09 has broadly been arrived at using data on average consumption of rice and wheat as designed in the 61st Round of NSS (July, 2004-June, 2005) and Population Census (2001) data for extrapolating growth of population with annual growth rate 1.6 per cent for 2007-08 and 2008-09. Since NSS consumption data do not account for non-household consumptions, the household consumption demand for rice is projected at 87.55 million tonnes and that of wheat at 63.29 million tonnes in 2008-09 (Table 2.2).

Table 2.2: Annual (365 days) Consumption

(Million Tonnes)

	Per Person Per Month Consumption (Kg.)*			2007-08	2008-09
	Rural	Urban	Average		
Population	72%	28%		1166	1185
(Million)					
Rice	6.55	4.85	6.07	86.19	87.55
Wheat	4.29	4.65	4.39	62.31	63.29

*:Weighted average of rural and urban consumption with respective population size as weights, i.e 72% for rural and 28% for urban.
Source : NSS – 61st Round (July 2004- June 2005)

2.27 Based on the projections above and data on gross production, the situation that emerges in respect of overall supply of rice and wheat during the fiscal year 2008-09 is presented below along with corresponding data for the preceding four years:

Table 2.3 : Domestic Rice situation

(Million Tonnes)

Crop Year (July-June)	2003-04	2004-05	2005-06	2006-07	2007-08
Fiscal Year (April-March)	2004-05	2005-06	2006-07	2007-08	2008-09
1. Gross Production	88.53	83.13	91.79	93.35	94.08
2. Net Production	81.80	76.81	84.81	86.26	86.93
(92.4% of Gross Production)					
3. Procurement	22.83	24.68	27.66	25.08	25.00
4. Offtake, of which	23.21	25.08	25.06	24.00	25.00
(a) Export Sale	4.80	4.09	4.75	4.00	4.00
(b) Open Sale	0.40	0.01	0.02	0.01	0.01
5. Addition to Stock (3-4)	-0.38	-0.40	2.60	1.08	0.00
6. Supply					
[2-3+4-4(a)]or[2-5-4(a)]	77.39	73.12	77.46	81.18	82.93
7. WPI (1993-94=100)	168.2	174.5	179.6	190.1*	
8. Consumption Demand	81.73	83.29	84.87	86.19	87.55

* till December, 2007

Table 2.4 : Domestic Wheat situation

Million Tonnes

Crop Year (July-June)	2003-04	2004-05	2005-06	2006-07	2007-08
Fiscal Year (April-March)	2004-05	2005-06	2006-07	2007-08	2008-09
1. Gross Production	72.15	68.64	69.35	75.81	74.81
2. Net Production (87.5% of Gross Production)	63.13	60.06	60.68	66.33	65.46
3. Procurement	16.80	14.79	9.23	11.13	12.00
4. Offtake	18.27	17.17	11.71	12.00	12.00
(a) Export	1.98	0.75	0.05	0.00	0.00
(b) Open Sale	0.24	1.05	0.00	0.01	0.01
4A. Imports	0.00	0.00	5.78	1.80	0.00
5. Addition to Stock (3-4+4A)	-1.47	-2.38	3.30	0.93	0.00
6. Supply [2-3+4-4(a)+4A]	62.62	61.69	68.89	69.00	65.45
7. WPI (1993-94=100)	184.1	191.5	216.5	223.4*	
8. Consumption Demand	59.08	60.21	61.35	62.31	63.29

* till December, 2007

Source : Food Bulletin, DGCI&S.

2.28 The supply of rice and wheat has been estimated on the assumption that the entire net production of a crop year is available in the following fiscal year. This may be true in the case of wheat but only partially true in the case of rice. Nevertheless, this procedure is useful since the purpose is not to calculate the exact quantum of supply but only to compare supplies as obtained on the same assumptions over time. On this basis, the supply of rice is likely to increase marginally in 2007-08, but may still fall short of demand. However, the supply of wheat may meet the demand.

Trade Prospects

2.29 Globally, paddy production is expected to be about 643 million tonnes in 2007 (equivalent to 429 million tonnes of milled rice), marginally above the estimate for 2006. This would be mainly arising from the rise in area coverage since the paddy yields are anticipated to be unchanged at 4.1 tonnes per hectare. It has been forecasted that the paddy production in Asia may be 584

million tonnes in 2007, which is 3 million tonnes more than that of the previous year.

2.30 In the international market, rice prices have remained high in 2007, as reflected in the FAO All Rice Price Index (1998-2000 base). On an average, prices for the first ten months of 2007 were 16 per cent higher than the corresponding period in 2006. But compared to wheat, the increase was small, the prices of which soared to unprecedentedly high levels.

2.31 According to USDA, Thai prices are high due to export bans by Vietnam and India later replaced by application of tariff of US $ 425 and currently $ 500 per tonne on non-basmati rice in India, a stronger Baht, expectations of declining global stocks and higher overall commodity prices. A major reason for the rise in US rice prices is the expectation of a very small Australian harvest in April-May, 2008 that will sharply reduce Australia's exports. Here, it has to be appreciated that part of the commodity price strength observed in 2007 was contributed by the steady depreciation of the US dollar, which lost 9.5 per cent of its value relative to the other currencies between January and September, 2007.

2.32 Going by the FAO forecast of global rice trade in 2007, there has been an increase in trade to the tune of 30.0 million tonnes, which translates to an increase of 1.7 per cent over the level of the preceding year. The trade growth in 2007 is expected to be sustained because of the increased imports by Bangladesh, Democratic People's Republic of Korea, Indonesia, Nepal and Philippines, to make up the deficits in their domestic supply. This growth may further look up in 2008, beyond 30.0 million tonnes, through expected increases in imports by Bangladesh, People's Republic of China, Democratic People's Republic of Korea, Iraq, Nepal and Turkey.

Table 2.5: World Rice Market at a Glance

		2005/06	2006/07	2007/08	Change: 2007/08 over 2006/07
		million tonnes			*%*
WORLD BALANCE (milled basis)					
Production		**424.3**	**428.7**	**429.3**	**0.1**
Trade		**29.2**	**29.9**	**30.5**	**1.8**
Total utilization		**418.3**	**425.9**	**429.2**	**0.8**
Food		368.0	373.9	377.6	1.0
Ending stocks		**105.5**	**106.8**	**107.6**	**0.7**
SUPPLY AND DEMAND INDICATORS					
Per capita food consumption:					
World	*kg/year*	57.0	57.2	57.1	-0.2
LIFDC**	*kg/year*	69.7	69.8	69.7	-0.1
World stock-to-use ratio	*%*	24.8	24.9	24.8	
Major exporters' stock-to-disappearance ratio	*%*	15.8	16.6	16.3	
		2005	**2006**	**2007**	
FAO Price Index (1998-2000=100)		107	117	133 *	

* January to October, 2007, ** Low-Income Food- Deficit Countries.

Source :FAO Food Outlook , November 2007.

2.33 Export of rice from India during the past three years has been more than 4 million tonnes. The Government's recent ban which was subsequently amended to an over $425 and now $ 500 per tonne MEP cut-off level for exports, would mean that the global trade would be deprived of the export of rice from India. But there is still no indication on how long the current export restrictions on non-basmati exports would last. As regards import of rice, the extent of import has been insignificant over the years.

2.34 Unlike wheat, global trade in rice is minimal. India is the world's largest exporter of basmati rice, selling about 6-7 lakh tonnes of the premium rice, termed as the 'Pearl' of rice, to Saudi Arabia and Middle East countries, Europe and the USA. As per estimates, the potential to export is still higher. Major destinations for Indian non-basmati, white/parboiled rice are Bangladesh,

Indonesia, Philippines, Nigeria, South Africa, Ivory Coast and other African countries.

2.35 India is facing stiff competition in the world markets for export of rice, from Thailand, Vietnam, USA and Pakistan. Some of the major problems confronted by exporters are:-

(i) Various taxes are imposed on rice exports, rendering Indian rice internationally uncompetitive.
(ii) There is lack of proper infrastructural facilities at sea ports.
(iii) Rice mills have not been fully modernized to ensure high milling recovery and reduce the percentage of broken rice.

2.36 These problems are to be sorted out on priority. Low cost production technology should be rolled in to further reduce the cost of production and in the process make the Indian rice competitive in the international markets. There should also be due emphasis on elevating the quality of rice in accordance with the requirements of international markets. The rice mills should get modernized to ensure high milling recovery of head rice and effective availability of by-products and their profitable utilization, both for industrial and feed purposes. In addition, export-friendly trade policies may be pursued and requisite improvement of infrastructural facilities may be promoted.

Coarse Cereals

2.37 Coarse Cereals have traditionally been the main components of the food basket of the poor in India. These cereals have been known for their rich nutrient contents as well as drought resistance quality. Predominantly, such crops are grown in the resource fragile agro-climatic regions of the country. The crops also offer a good promise in the food processing industry as well as for export.

2.38 The production of Kharif coarse cereals which was estimated at 25.61 million tonnes for 2006-07 (Final Estimates, DES) is expected to be 28.59 million tonnes during 2007-08 (Second Advance Estimates). Even though this makes an increase of 2.98 million tonnes over the production of previous year, it is still 0.11 million tonnes lower than the target of 28.70 million tonnes set for 2007-08. As regards the individual items, the production of kharif maize is estimated to be 14.29 million tonnes, followed by bajra 8.26 million tonnes, kharif jowar 3.70 million tonnes and ragi 1.89 million tonnes. Whereas the production of maize and ragi has increased in 2007-08 over that of the previous year, there has been a marginal decline in production of bajra and Jowar. Owing to the low availability of irrigation, the coarse cereals continue to be dependent on the vagaries of weather. (Table 2.1)

2.39 During the period 1985-86 to 2006-07, the growth rate of area under coarse cereals has been -1.64 per cent. This decline has been more pronounced during the period 1985-86 to 1995-96 (-2.45 per cent) than during the period 1995-96 to 2006-07 (-0.72 per cent). However, the trend in yield was better during the period 1985-86 to 1995-96 (3.85 per cent) compared to the period 1995-96 to 2006-07 (1.76 per cent), giving an overall growth rate of 2.46 per cent during the entire period 1985-86 to 2006-07. The trends exhibited by kharif coarse cereals in respect of area coverage and yield have been similar to that of coarse cereals (total). (Table 2.2)

2.40 The total area under coarse cereals in India is estimated to be 28.6 per cent of the total area under cereals in 2006-07. The state with the highest area under coarse cereals is Rajasthan, with maize and bajra accounting for the largest share. The state with the highest production of coarse cereals in 2006-07 is Maharashtra, while productivity is highest in Punjab at 3.03 tonnes per hectare. The production of coarse cereals is about 16.70 per cent of total cereal production in the country as against rice which forms 45.97 per cent and wheat 37.33 per cent of total cereals production, during the year 2006-07. The

Commission recommends that ***a focused plan of action should be spelt out in the form of new policy initiatives for improving the production and productivity of coarse cereals.***

2.41 The demand pattern for food consumption is undergoing a change in India. Currently, people prefer to consume more of non-cereals and even within cereals, their preference is more towards rice and wheat rather than coarse cereals. A shift in the consumption pattern in favour of superior food items, viz., milk, vegetables, fruits, animal foods, etc. is also visible. In this emerging scenario, the future sustainability of coarse grains production lies in promoting both direct and indirect consumption in the form of processed foods, beverages, fodder and industrial consumption.

2.42 The export of jowar, bajra, maize and ragi in the year 2006-07 was 718.41 thousand tonnes. Out of this, maize export constituted the largest chunk of 637.41 thousand tonnes, followed by jowar 51.03 thousand tonnes, bajra 27.44 thousand tonnes and ragi 2.53 thousand tonnes. The highest export earnings of Rs. 498.85 crore was realised from maize, followed by jowar Rs. 51.41 crore, bajra Rs. 27.66 crore and ragi Rs. 1.48 crore. The import of maize in 2006-07 was 2.00 thousand tonnes and no other coarse cereal was imported. Maize was exported at Rs 7.83 per kg. and imported at Rs. 18.30 per kg.

(Tables 2.24 & 2.25)

2.43 As per FAO, Food Outlook-November 2007, global utilization of coarse grains in 2007-08 is forecast to reach 1057 million tonnes, up by 4 per cent compared to the previous season. This relatively strong expansion is mainly driven by the fast growth in its industrial use, most notably for the production of ethanol. Maize is the main feedstock for the production of grain-based ethanol. Its use for this purpose had increased sharply in the previous season and is expected to register significant increase in the coming season also.

2.44 Total feed use of coarse grains is forecast to increase by 1.4 per cent in 2007-08 to 624 million tonnes. However, on an individual grain basis, stronger increases are expected only for maize (1.5 per cent) and jowar (8 per cent) because of this season's tighter supplies of other feed grains. The use of barley for feed purpose is forecast to fall by 3 per cent to around 97 million tonnes, mainly due to reduced production and high prices.

2.45 World coarse grain stocks by the end of the season in 2008 are forecast to reach 177 million tonnes, up by nearly 15 million tonnes, or 9 per cent from their reduced opening levels. The expected strong recovery is mostly a reflection of this year's anticipated record maize production in the United States, the world's largest producer and exporter of maize. Total world maize stocks are currently forecast at 133 million tonnes, up by 14 per cent from the previous season.

2.46 Strong maize prices combined with rising wheat prices, have pushed up the values of most other feed grains this season. Feed barley prices have increased the most, trading between 60 to 80 per cent above last year levels, reflecting a very tight world balance following shortfalls in production in a number of countries and restricted supplies from Ukraine, a leading barley exporter. Also, jowar has benefited from higher prices this season. Strong import demand from the European Union has been the main factor behind a roughly 20 per cent year on year increase in jowar export values.

2.47 There is rise in demand for coarse cereals because of its variety of uses. The demand pattern is also influenced by the changing life style and demand for processed food. Driven by strong demand and tight export supplies, international prices of coarse grains remain high compared with the previous season, despite record growth in production. In the maize market, prices started to rise sharply from the middle of the previous season and peaked to a ten year high in February, 2007 because of significant supply shortage in the face of very strong

demand for the production of ethanol in the United States. A brief description of the current position of individual coarse cereals is given below:

Jowar

2.48 Jowar is grown in arid and semi-arid regions, as it is drought resistant. In India, it is mainly grown in the arid tracts of Gujarat, Uttar Pradesh, Karnataka, Maharashtra and Andhra Pradesh. Jowar is meant for both food as well as feed. The cereal still forms a part of the staple diet of households in Maharashtra and Karnataka. Noted for its nutritional value, the cereal is gaining importance for livestock feed, grain alcohol, starch production and production of adhesives and paper. Its capacity for nitrogen fixation in the soil is elevating its significance as a rotation crop and the sugar in the stalk can be used for bio-fuel production.

2.49 Production of jowar in kharif 2007-08 is estimated at 3.70 million tonnes (Second Advance Estimates, DES,) as compared to 3.71 million tonnes in 2006-07. Jowar production (kharif and rabi) during 2006-07 is estimated at 7.15 million tonnes as against 7.63 million tonnes in 2005-06. During the period between 1995-96 and 2006-07, production of jowar declined sharply by 2.83 per cent per annum as compared to a slower decline of 0.68 per cent per annum observed during the period 1985-86 to 1995-96. The decline in production was attributed to significant acreage shifts away from jowar in the states of Gujarat, Madhya Pradesh, Karnataka and Andhra Pradesh. (Tables 2.1 & 2.2)

2.50 There has been stagnancy in the yield of jowar for the past more than a decade. In respect of yield, Bihar is on top at 1.09 tonnes per hectare, followed by Madhya Pradesh (1.04 tonnes per hectare), Uttar Pradesh (1.03 tonnes per hectare), Andhra Pradesh (0.97 tonnes per hectare), Maharashtra (0.82 tonnes per hectare) and Rajasthan (0.56 tonnes per hectare). However, there has been a remarkable increase in the yield level of jowar in Rajasthan recently and the yields in Karnataka, Gujarat and Andhra Pradesh have exhibited declines vis-à-vis that of last year. Following the stagnation in production, the average WPI of

jowar (base 1993-94=100) rose from 266.4 in November, 2006 to 308.1 in November, 2007, engendering an increase of 15.7 per cent. The prices of Jowar were ruling above MSP, in general. The seed replacement rate for jowar in Karnataka and Andhra Pradesh is 100 per cent (for hybrid) and for other varieties it is 65 per cent in Andhra Pradesh, 26 per cent in Karnataka, 17.13 per cent in Uttar Pradesh, 13.28 per cent in Madhya Pradesh, 8.22 per cent in Rajasthan and as low as 2.6 per cent in Chhattisgarh. (Table 2.14)

Bajra

2.51 Bajra is well adapted to production systems characterized by low rainfall, low soil fertility and high temperature. Being amenable to cultivation in difficult growing conditions, the crop can be grown in areas where other cereal crops such as wheat or maize would not survive. Since its protein content is richer than that of maize, the relevance of bajra as feed is expected to increase. The production of bajra is estimated as 8.26 million tonnes in 2007-08 (Second Advance Estimates) which is 0.16 million tonnes lower than the production in 2006-07. The important states producing bajra are Rajasthan, Uttar Pradesh, Maharashtra, Haryana and Gujarat. The state with highest production is Rajasthan with 3.42 million tonnes, followed by Uttar Pradesh (1.29 million tonnes), Maharashtra (1.06 million tonnes), Haryana and Gujarat (1.02 million tonnes each).

2.52 The total acreage under bajra declined by 0.76 per cent per annum during the period 1985-86 to 2006-07. The state with highest yield is Haryana with 1.65 tonnes per hectare followed by 1.45 tonnes per hectare in Uttar Pradesh and 1.37 tonnes per hectare in Madhya Pradesh. The seed replacement rate of bajra is 57.30 per cent in Uttar Pradesh, 48.22 per cent in Madhya Pradesh, 43 per cent in Andhra Pradesh, 42.09 per cent in Rajasthan and 26 per cent in Karnataka. (Table 2.2)

2.53 Bajra is characterized by its localized demand as well as short shelf life. The lack of adequate storage facility is creating difficulties for its cultivation. Therefore, the Government should take immediate steps to provide proper storage facilities.

2.54 The index number of wholesale prices of bajra (base 1993-94=100) which was 230.0 in November, 2006 increased to 234.1 in November, 2007, registering an increase of 3.4 per cent. Month-end wholesale prices of bajra quoted during November, 2006-November, 2007 ranged between Rs.975-650 per quintal in Rajkot (Gujarat), and Rs.725-550 per quintal in Jaipur (Rajasthan). In spite of the overall favourable price scenario, there were instances of prices ruling below MSP in the post harvest months. This was particularly so in the state of Uttar Pradesh where bajra prices in October-November, 2007 ranged between Rs. 575 to Rs. 590 per quintal in Agra and Rs. 540 to Rs 555 per quintal in Hathras as against the MSP of Rs.600 per quintal. (Table 2.14 & Annexure-I)

Maize

2.55 Maize finds application in a wide variety of uses such as feed and in the production of alcoholic beverages and food sweeteners, starch, oil and proteins and ethanol. No wonder, this is the most important crop after wheat and rice. To enhance the production and productivity of maize, it has been included in the Technology Mission on Oilseeds and Pulses since 1995. The Accelerated Maize Development Programme has been merged into the centrally sponsored Integrated Scheme of Oilseeds, Pulses, Oil palm and Maize for the overall development of these crops.

2.56 There has been increase in the area coverage under maize cultivation. It increased from 5.8 million hectares in 1985-86 (TE) to 6.0 million hectares in 1995-96 (TE) and further to 7.6 million hectares in 2006-07(TE). The production during 2007-08 is estimated to be the record of 16.78 million tonnes, up by 1.68 million tonnes over the production in 2006-07. Out of the total production of

maize, about 75 per cent is generated in the kharif season. The production of kharif maize during 2007-08 is likely to be 14.29 million tonnes, higher than the 11.56 million tonnes estimated in 2006-07. (Tables 2.1 & 2.2)

2.57 The production of maize recorded an annual growth of 3.82 per cent during the period 1985-86 to 2006-07. This is substantially higher than the growth of rice during the same period. The annual growth rate of production was as high as 12.56 per cent in Tamil Nadu, 12.53 per cent in Maharashtra and 9.22 per cent in Andhra Pradesh. At the all India level, the yield of maize recorded a growth rate of 2.42 per cent per annum and acreage has expanded by 1.36 per cent per annum. There has been significant increase in area in the states of Uttar Pradesh, Maharashtra and Karnataka. The yield of maize is higher than that of rice in some of the states like Andhra Pradesh, Himachal Pradesh, West Bengal, Bihar, Jharkhand and Maharashtra. The seed replacement rate of maize in Andhra Pradesh is 100 per cent, 95 per cent in Punjab, 50 per cent in Bihar, 25.20 in Rajasthan, 19.31 per cent in Uttar Pradesh, 11.5 per cent in Chhattisgarh, 10.94 per cent in Madhya Pradesh, 10 per cent in Jharkhand and as low as 3.5 per cent in Uttarakhand. (Table 2.2)

2.58 During 2007-08, as in the case of other cereals, the prices have been rising and the index of wholesale prices of maize which stood at 209.3 in April, 2006, rose to 248.9 in April, 2007 but fell to 227.1 in November, 2007. Though the price of maize in all other states was ruling above MSP, but price of maize in Karnataka dipped below MSP, to Rs.525-565 during October- November, 2007. The total procurement of bajra, maize and jowar during 2007-08 (as on 4-2-2008) were 123640 tonnes, 65797 tonnes and 93 tonnes respectively.

(Tables 2.14 & 2.9)

Ragi

2.59 Ragi is grown in most of the states under dry land conditions, mainly by small and marginal farmers. Ragi production in 2007-08, according to the Second Advance Estimates, would be 1.89 million tonnes. This is a marginal increase

over the estimated production of 1.18 million tonnes during kharif 2006-07. The major ragi producing states are Karnataka, Tamil Nadu, Uttar Pradesh (including Uttarakhand) and Maharashtra. The production of ragi has fallen by 2.81 per cent per annum during 1995-96 to 2006-07. (Tables 2.1 & 2.2)

2.60 The area under ragi cultivation has been on the decline over the years. During the period 1985-86 to 2006-07, this decline was by 2.66 per cent per annum. This happened mainly in the states of Orissa, Bihar, Jharkhand, Andhra Pradesh, Gujarat and Maharashtra. The average yield of ragi is 1.2 tonnes per hectare in 2006-07. The yield of ragi is highest in Tamil Nadu at 1.6 tonnes per hectare followed by 1.37 tonnes in Uttar Pradesh and 1.35 tonnes in Karnataka. The seed replacement rate of ragi in Karnataka is 32 per cent. To increase productivity, the seed replacement rate needs to be improved in the major ragi growing states. (Table 2.2)

2.61 The annual average index number of wholesale prices (Base 1993-94=100) of ragi increased by 11.0 per cent in 2007-08 (up to November, 2007) over the preceding year. The monthly index on a point to point basis fell by 12.3 per cent from November, 2006 to 7.8 per cent in November, 2007. The index stood at 226.8 in November, 2007. (Table 2.14)

2.62 The potential for long storage capacity makes ragi an important crop in their risk avoidance strategies for poorer farming communities. Ragi processed products need to be promoted as a health food amongst the population who are getting increasingly health and nutrition conscious. This could translate into better returns for farmers.

2.63 In order to ensure food security, the coarse cereals should be given its due importance. The government should rapidly increase investment in rural infrastructure and market institutions in order to reduce agricultural-input access constraints, since these are hindering effective production responses of coarse

cereals. An integrated strategy is required to boost production and promote coarse cereals as a major food crop. Coarse cereals may be included in the PDS which would help in nutritional security and would also lead to dryland farming in certain areas.

Kharif Pulses

2.64 Pulses are important food crops because of their high protein and amino acid content. Having double the protein content of wheat and three times that of rice, pulses have been sometimes termed as “poor man’s meat”. Like many leguminous crops, these are important in crop rotation by virtue of their potential for nitrogen fixation. The position of India is unique in respect of pulses: it is the largest producer as well as importer of the item.

2.65 Pulses remains as one of the weakest links in the chain of India’s agricultural production. Productivity of most of the pulse crops in India have either declined or stagnated over the past two decades resulting in a sharp reduction in their per capita availability. The item began to receive greater attention only since the launch of the Technology Mission on Oilseeds and Pulses (TMOP) in the mid-1980s. Of late, to enhance the production and productivity of pulses alongwith oilseeds, oil palm and maize, a new scheme “Integrated Scheme of Oilseeds, Pulses, Oil Palm and Maize (ISOPOM)” has been operationalised. This is under implementation in 14 major pulses and oilseeds growing states. As not much time has elapsed since the introduction of ISOPOM, it is too early to comment on its performance. However, the productivity and production figures in the wake of its implementation have shown improvements.

2.66 While the traditional cropping pattern in the country included a pulse crop either as a mixed crop or in rotation, the commercialization of agriculture has encouraged the practice of mono-cropping, thus, altering the traditional cropping pattern of pulses. With the continued emphasis on the production of superior

cereals coupled with a near total neglect of rainfed areas, pulses were driven out of not only the irrigated areas, but also the rainfed regions and were relegated to the marginal lands. Besides, the greater reliance on import of the item dampened the pace of rejuvenation of the sector.

Table 2.6: Per Capita Net Availability of Pulses

(Grams per day)

Year	Pulses	Year	Pulses
1951	60.7	1995	37.8
1956	70.3	1996	32.7
1961	69.0	1997	37.1
1966	48.2	1998	32.8
1971	51.2	1999	36.5
1976	50.5	2000	31.8
1981	37.5	2001	30.0
1985	38.1	2002	35.4
1990	41.1	2003	29.1
1991	41.6	2004	35.8
1992	34.3	2005	31.5
1993	36.2	2006(P)	32.5
1994	37.2		

2.67 It may be seen from Table-2.6 that over the period from 1951 to 1992, the net per capita per day availability of pulses increased initially from 60.7 grams in 1951 to 70.3 grams in 1956 and 69.0 grams in 1961. Thereafter, there has been more or less a declining trend. It remained in the range of 32.7 gms. to 37.8 gms. upto 1999, and from 2000 to 2004 in the still lower range of 29.1 gms. to 35.8 gms. net per head per day. As against 35.8 gms. per head per day in 2004, the per head availability dipped to 31.5 gms. in 2005, albeit followed by a moderate improvement to 32.5 gms. in 2006. This is because the area, production and yield (decadal) of pulses remained range bound during the period from 1960-61 to 2000-01 the subsequent years also could not register any substantial improvement. (Tables 2.1 & 2.2)

2.68 During 1996-97 to 2006-07 the area under total pulses remained in the range of 20.35 million hectare and 23.50 million hectare only. Similarly, the yield of pulses stagnated in the range of 543 kg per hectare and 636 kg per hectare. The total production of pulses varied between 11.08 million tonnes in 2000-01 and 14.91 in 1998-99 and 2003-04. This stagnation in pulses production and productivity is a cause for concern not only from the point of food security and quality of food for the country's population, especially the poor and the rural segment, but also from the point of soaring import bill, and imbalance in the cropping pattern. The growth in production and productivity of pulses has failed to keep pace with the population growth, and the deficit in availability vis-à-vis expected demand is anticipated to continue in the future.

Table-2.7 : Share of Pulses in Total Cropped Area(All-India)

(area in 000' hect)

Year	Gross Cropped Area	Area Under Pulses	Gross Irrigated Area	Irrigated Area under Pulses	Pulses area to TCA(%)	Pulses area to GIA(%)
Pre-HYV era						
1950-51	131893	20554	22563	1939	15.58	8.59
1964-65	159229	24163	30705	2212	15.2	7.20
HYV-era						
1967-68	163736	23017	33207	2003	14.06	6.00
1989-90	182269	23415	61850	2239	12.8	3.6
1990-91	185742	24662	62470	2561	13.3	4.1
2000-01	185705	20348	74290	2609	11.0	3.5
2004-05	190911	22763	79506	3297	11.9	4.1

2.69 The area under pulses as a proportion of total cropped area (TCA) started falling even in the pre-HYV era. The decline accentuated as the HYV technology registered advances (Table 2.7). In the period from 1967-68 to 1989-90, TCA increased by about 18.53 million hectares while the corresponding increase in

pulses area was only 0.40 million hectares. It seems during the HYV period, this crop item has been pushed to the marginal lands. Pulses did not get its due share even in respect of increases in irrigation. Most of the additional irrigated area right from pre-HYV period got diverted to non-pulse crops, particularly, cereals such as wheat and paddy.

2.70 The production of pulses increased from 12.74 million tonnes in triennium ending (TE) 1985-86 to 13.22 million tonnes in TE 1995-96 and 13.56 million tonnes in TE 2006-07 mainly because of rise in productivity from 541 kgs. to 587 kgs. and 596 kgs. per hectare respectively during the periods. This is evident from the fact that the area under pulses showed a low growth rate of 0.12 per cent in 1995-96 to 2006-07, while the growth rates registered by production and yield during the period were 0.24 and 0.12 per cent respectively. Thus, the performance in respect of pulses has been lacklustre vis-a-vis that of wheat and rice. (Table 2.2)

2.71 In the total foodgrain production of 208.58 million tonnes and 217.28 million tonnes in the years 2005-06 and 2006-07, pulses comprise of 13.39 million tonnes and 14.20 million tonnes which is considerably lower than the record production of 14.91 million tonnes realised in 2003-04. This record production was a repeat of the record production registered in the year 1998-99. The share of pulses in the total foodgrains production in these years decreased to 6.4 per cent and 6.5 per cent which was as high as 9.2 per cent in 1978-79 and 1982-83. The share of pulses production has been stagnant in the range of 7.3 to 6.4 per cent over the period from 1994-95 upto 2006-07. (Table 2.1)

2.72 Rabi pulses has a relatively better share of 8.6 and 8.8 per cent in the rabi foodgrains production as against the share of kharif pulses at 4.4 and 4.3 per cent of the kharif foodgrains production, in the years 2005-06 and 2006-07. However, the share of rabi pulses has been looking southward over the years, from 15.3 per cent in 1978-79 to 8.6 per cent and 8.8 per cent in 2005-06 and

2006-07. This falling trend is a pointer to the eclipse of pulses by wheat under rabi foodgrains production.

2.73 Gram (rabi crop) followed by tur (kharif crop) are the major contributors to the total pulses production in the country, their share being 41.73 per cent and 20.49 per cent in 2005-06 and estimated at 44.61 and 16.30 per cent in 2006-07. The share of tur in the total pulses production is characterized by fluctuations, it decreased from 20.28 per cent in 2000-01 to 17.88 per cent in 2004-05, then increased to 20.49 per cent in 2005-06 but again decreased to 16.30 per cent in 2006-07.

2.74 In respect of kharif pulses for 2007-08, the estimated production of tur at 2.90 million tonnes comes above the target of 2.70 million tonnes that has been laid down. This is 0.59 million tonnes more than the production of 2.31 million tonnes estimated for 2006-07 (Second Advance Estimates, Directorate of Economics and Statistics). As regards urad (kharif), the estimated production of 1.07 million tonnes for 2007-08 is higher than that of 2006-07 (0.94 million tonnes). Similarly, for moong (kharif), the estimated production of 0.98 million tonnes for 2007-08 is more than the production estimated at 0.84 million tonnes for 2006-07. (Table 2.1)

Table 2.8 : Imports of Pulses

(000 tonnes)

Fiscal year/ Term	All Pulses*	Tur	Moong	Urad	Import as % of net production
2000-01	350.57	43.46	18.52	11.56	2.99
2001-02	2232.29	354.18	159.08	19.30	23.04
2002-03	1995.33	320.55	262.57	35.36	17.05
2003-04	1725.51	314.92	0.00	0.00	17.72
2004-05	1312.17	238.31	0.00	0.00	10.05
2005-06	1696.52	228.84	0.00	0.00	14.75
2006-07	2270.98	246.53	0.00	0.00	19.38

* Excluding other beans.

2.75 India for the second time imported a record quantity of 2.27 million tonnes of pulses in 2006-07. Prior to this, it was in the year 2001-02 that a quantity of 2.23 million tonnes was imported. Thereafter, the reliance on import successively declined till 2005-06 when it looked up to 1.69 million tonnes. Import as a percentage of net production was the highest in 2001-02 (23.04 per cent) and the lowest in 2004-05 (10.05 per cent).

Table 2.9 : Supply Situation of Pulses

(Million Tonnes)

Crop Year (July-June)	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07*
Fiscal Year (April-March)	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Gross Production							
Tur	2.25	2.26	2.19	2.36	***2.35***	***2.74***	***2.31***
Other Kharif Pulses	2.20	2.58	1.96	3.81	***2.37***	***2.13***	***2.49***
Gram	3.85	5.47	4.24	5.72	***5.47***	***5.60***	***6.33***
Other Rabi Pulses	2.77	3.06	2.74	3.02	***2.94***	***2.92***	***3.07***
All Pulses	11.07	13.37	11.13	14.91	13.13	13.39	14.20
Net Production (87.5% of Gross Production)							
All Pulses	9.69	11.70	9.74	13.05	11.49	11.72	12.43
Procurement All Pulses (NAFED)	**Procurement was also disposed of in the same season**				Negligible	Negligible	Negligible
Export(FY) All Pulses	0.16	0.15	0.15	***0.28***	***0.45***	***0.25***	***0.25***
Import(FY) All Pulses	2.23	2.00	1.73	***1.31***	***1.70***	***2.27***	***2.27***
Supply(FY)	11.76	13.54	11.31	14.08	12.74	13.74	14.45
Average annual supply (TE)			12.20	12.98	12.71	13.52	13.64

* : Final Estimates 2006-07

2.76 Table 2.9 shows the supply position of pulses in the country from 2000-01 to 2007-08. As the production of the crop year i.e. 1999-2000 is available for consumption in the next year, i.e., 2000-01, the production of each year is included in the supply of next financial year, i.e., 2000-01 in the case of first year under reference. One of the interesting features of supply of pulses is that whereas there is a minor difference in the net production at 9.69 million tonnes in 2001-02(FY) and 9.74 million tonnes in 2003-04(FY), a high quantity of 2.23 million tonnes was imported in 2001-02(FY) while in 2003-04(FY) the import was only 1.73 million tonnes even for higher population. Similarly, the lesser supply of domestic pulses, i.e., net production from 13.05 million tonnes in 2004-05 to 11.49 million tonnes in 2005-06, was compensated with moderate rise in imports from 1.31 million tonnes to 1.70 million tonnes.

2.77 A look at the state-wise figures reveals a wide variation in the yield of different states in a particular year and yield variability in a state over the years. The average yield per hectare in 1995-96 to 2006-07 ranges from a low of 261 kgs. per hectare in Rajasthan to a high of 968 kgs. per hectare in Uttar Pradesh. The coefficient of variation in the average yield ranges from 8.0 in Uttar Pradesh to 27.3 in Rajasthan. Based on the yield in 2006-07 and the yield variability during the period 1995-96 to 2006-07, the states have been classified as “high and low” yield. Andhra Pradesh, Karnataka, Gujarat and Bihar (including Jharkhand) fall under the category of high yield and high variability in yield as the yield in the case of these states except Karnataka is above the all India yield and depict wide variation in yield. The development strategy in respect of these states should mainly aim at reducing the wide yield variability. These states contribute 24.5 per cent of the all India pulses production and 27.13 per cent of the total area under pulses.

Table 2.10: Classification of states based on Yield and Variability

(Total Pulses)

Category	State	Average Yield (1995-96 to 2006-07)		Area		Production	
		High	Lowest	T.E (2006-07)	% Share in 2006-07	T.E (2006-07)	% Share in 2006-07
High Yield High Variability	Andhra Pradesh	772	330	1857	8.2	1247	9.2
	Bihar*	887	609	924	4.1	639	4.7
	Gujarat	748	300	829	3.6	540	4.0
	Karnataka	487	295	2152	9.5	883	6.5
	Total			5762	25.3	3309	24.4
HighYield Low Variability	Madhya Pradesh*	766	557	5234	23.0	3727	27.5
	Maharashtra	644	364	3548	15.6	1991	14.7
	Uttar Pradesh*	968	774	2813	12.4	2227	16.4
	Total			11595	50.9	7944	58.6
Low Yield High Variability	Rajasthan	600	261	3408	15.0	1239	9.1
	Tamil Nadu	478	337	554	2.4	238	1.8
	Total			3961	17.4	1477	10.9
Low Yield Low Variability	Orissa	464	343	748	3.3	313	2.3
	All India	635	543	22772	100.0	13562	100.0

* Including Jharkhand in Bihar, Chhattishgarh in Madhya Pradesh and Uttarakhand in Uttar Pradesh.

2.78 Madhya Pradesh, Maharashtra and Uttar Pradesh fall under the high yield and low variability category, having a share of 58.6 per cent in total pulses production and 50.9 per cent in area. The strategy for these states should be, if feasible, in the direction of area expansion. Rajasthan and Tamil Nadu are classified in the low yield and high variability category, contributing 10.9 per cent of production and occupying 17.4 per cent area. Technologies that raise productivity and at the same time reduce yield variability should be developed for large scale adoption. Thus, ironing out the high variability in yield in the high variability states (which together comprise of 35.3 per cent of the production out of 42.7 per cent area under pulses) will definitely help realize the goal of self-sufficiency in pulses thereby saving precious foreign exchange used in importing

pulses. Needless to state that such an analysis has to be conducted separately for all types of pulses and at a more disaggregated level, for designing the development programme in pulses in accord with the local conditions.

2.79 A similar classification of states on yield during 2006-07 and its variability during the period 1995-96 to 2006-07 of kharif pulses is shown in the Table 2.11 below: States falling in the category of high yield high variability and low yield with high variability contributes 70.6 per cent of the kharif pulses production out of 79.6 per cent of the total cropped area under kharif pulses. Evidently, an attempt at reducing the yield variability will lead to considerable rise in the production of kharif pulses from the existing area under kharif pulses.

Table 2.11: Classification of states based on Yield and Variability (Kharif Pulses)

Category	State	Average Yield (1995-96 to 2006-07)		Area		Production	
		High	Lowest	T.E (2006-07)	% Share in 2006-07	T.E (2006-07)	% Share in 2006-07
High Yield High Variability	Andhra Pradesh	551	226	829	7.0	372	5.7
	Gujarat	725	292	613	6.3	370	7.2
	Madhya Pradesh*	527	370	1154	10.3	498	8.5
	Maharashtra	665	350	2369	22.2	1241	27.4
	Total			4965	45.9	2481	48.7
High Yield Low Variability	Bihar*	892	606	312	3.1	206	4.6
	Uttar Pradesh*	932	601	938	9.0	603	12.7
	Total			1251	12.1	809	17.4
Low Yield High Variability	Karnataka	485	255	1442	13.6	560	10.5
	Rajashtan	560	85	2317	20.1	468	11.4
	Total			3759	33.7	1028	21.9
Low Yield Low Variability	Orissa	459	319	505	4.8	207	4.8
	All India	528	409	10891	100.00	4793	100.00

Constraints in pulses cultivation

2.80 Non-availability of HYV seeds in the desired quantum is one of the major constraints in the expansion of area, production and yield of pulses. The Indian Institute of Pulses Research (IIPR), Kanpur in coordination with All India Coordinated Research Projects (AICRPs) has reportedly developed several high yielding and disease resistant pulse varieties. Also, improved pulses production and protection techniques are being extended and disseminated through massive on-farm demonstrations, training and visits of development officers and farmers. Still, the impact of research achievements of the IIPR, other research institutions and extension machinery hardly gets reflected in the yield and production level of pulses. The growth rate of yield of pulses is 0.56 per cent during the period 1985-86 to 2006-07 as against 1.45 per cent of rice and 1.52 per cent of wheat crops. It seems the propagated yield advantage did not find favour with the farmers to opt for these varieties, which is indicative of their poor performance at the field level. There is a need to conduct a study for identifying the reasons leading to the failure of developed varieties not making any real dent in pulses productivity and simultaneously develop varieties with better yield advantage and desirable characteristics suiting the varied agro-climatic conditions in pulses. (Table 2.2)

Seed Management

2.81 Seed management, a crucial element for growth in productivity had witnessed serious problems in the recent past as it is not improving seed production. There is practically no improvement in the Seed Replacement Rate (SRR) in the prominent pulse producing states. The focus on HYV/hybrid seed production in the public sector is minimal.

2.82 Rhizobium inoculation of legume crops is considered as an important factor for increasing yields. Nitrogen requirement of pulse crops can be met by

providing efficient strains of rhizobium coupled with sound agronomic practices. Seeds should be inoculated with efficient rhizobium cultures to activate the process of nodulation. Though efforts to popularize rhizobium inoculation are going on, but the adoption of these bio-fertilizers seems to be very negligible. There is need to conduct a study for ascertaining the rise in productivity due to the use of rhizobium inoculation before propagating it as one of the components of ISOPOM in various states.

2.83 Pulses are susceptible to a number of diseases and insect pests causing heavy losses resulting into poor production. Research institutions are reported to have developed several resistant/tolerant varieties but the spread of these varieties in the farmers' field seems to be limited. Cheaper and effective pesticides to combat the pests in pulses thus need to be developed. Technological change in pulse farming is hardly visible in India which indicates that technological stagnation is primarily responsible for the backwardness of pulses in the country as a whole.

Price Behaviour and Farmers' Response

2.84 The rising support price for pulses over the years reflects the policy intention of Government to promote pulses cultivation. But pulses production did not rise corresponding to not only rise in the support prices but also the market prices that were much higher than the support prices. Thus, either the price signals did not reach the farmers or the farmers did not respond to these signals because of the fear of not so effective procurement systems for pulses as in the case of wheat and paddy and also lack of proper technology support.

2.85 The high annual fluctuations in price of pulses indicating a high risk seems to have turned the farmers away from pulses and in favour of other competing cereals. Violent fluctuation in the prices of pulses within a year, reaching trough during the harvesting season and prevailing around it in the marketing season is one of the reasons for the low expansion of acreage under pulses cultivation.

The price responsiveness of pulses is weak, and, in fact, factors other than price are more important in pulse production and productivity.

2.86 The prices of pulses as a whole have been remaining high since the year 2001-02. The Wholesale Prices Index (WPI) which was 191.7 during December, 2001, reached 236.1 during December, 2007 (source: WPI data released by the Office of Economic Adviser, Ministry of Commerce and Industry). This had gone upto 268.1 in December, 2006, but thereafter registered declines to reach 236.1 in December, 2007, even though there have been no substantial abatement in the higher price levels vis-à-vis the levels that prevailed during the earlier years. On the whole, the same trend has been observed in respect of individual items, viz., tur (arhar), moong, urad, gram and masur (lentil). Whereas in respect of moong, urad and gram, there has been a moderate declining trend since December, 2006 till December, 2007, in the case of tur and masur, by and large, the higher levels remained with ups and downs.

2.87 Production of pulses for the kharif season is expected to improve to around 5.8 million tonnes due to higher acreage. But inadequate rains in September-October may adversely effect rabi crop. As a result, the overall production in the year is expected to remain at the last year's level of 14.20 to 14.34 million tonnes. This means even after imports, the country will continue to face a shortfall of around 2 million tonnes. The domestic consumption is expected to remain at 17-18 million tonnes. However, to meet the increasing demand for pulses in the country, there are plans to raise the production by 2 million tonnes in the next couple of years under the National Food Security Mission.

2.88 NAFED procured 152.39 thousand tonnes of urad and 2.49 thousand tonnes of moong at MSP in the year 2003-04, a bumper pulses production year. In 2004-05, 0.53 thousand tonnes of urad were also procured. Thereafter, the prices of pulses continuously remained above the MSP and no procurement of

pulses has been made by NAFED under the price support scheme (PSS).

(Table 2.3)

Oilseeds

2.89 India ranks among the largest producers of oilseeds in the world such as USA, China and Brazil. The country is also home to large varieties of oilseed crops, grown in its different agro-climatic zones. The major cultivated oilseed crops in the country include groundnut, rapeseed/mustard, seasame, safflower, linseed, nigerseed, castorseed, soyabean and sunflower. The estimated production of nine cultivated oilseeds during the year 2006-07 was 242.89 lakh tonnes (Final Estimates). According to 2005-06 production figures, India contributes about 7 percent of the world oilseeds production. Its share in world production in respect of groundnut is 22.1 per cent; rapeseed 16.6 per cent; sunflower 4.8 per cent; soyabean 3.7 per cent and castor seed 66 percent. Groundnut-in-shell forms 11 per cent of world exports and sesamum forms 17 per cent. India, however, lags behind in productivity in respect of major oilseeds by around 50 per cent of the world average and even more than that in the case of soyabean, mainly due to cultivation in marginal lands devoid of irrigation and endowed with only low levels of input usage. (Table 2.1)

2.90 The oilseeds production in India is concentrated in central and southern parts of the country mainly in Rajasthan, Madhya Pradesh, Gujarat, Maharashtra, Karnataka and Andhra Pradesh. Of the nine oil seeds, the three oilseeds, viz, groundnut, soyabean and mustard together account for about 88 per cent of the total production. An analysis of the performance of oilseeds during the last two decades shows that the decade 1985-86 to 1995-96 was more beneficial to the oilseed economy in terms of area, production and productivity. The average growth rates of area, production and productivity during this decade were 3.76 percent, 7.56 percent and 3.67 percent respectively compared to the corresponding average growth rates of 0.07 percent, 0.84 percent and 0.77 percent achieved during the decade 1995-96 to 2006-07. The comparatively higher growth rates in the latter half of eighties and early nineties could be

attributed to the concerted efforts of the Government to attain self sufficiency in oilseeds which culminated in the setting up of the Technology Mission on Oilseeds, Pulses and Maize (TMOP&M) in 1986 and the initial success achieved by the TMOP&M. However, due to lack of technology to evolve high productivity seeds and limited spread of irrigation in the oilseeds grown areas, the earlier gains could not be consolidated. Weather conditions still continue to be the deciding factor of production prospects of oilseeds in a particular year. An examination of the production trends of oilseeds during the last six years of the current decade corroborates the importance of weather factor in oilseed production in the country. The sharp decline of oilseeds production to 148.38 lakh tonnes in 2002-03 was mainly attributed to failure of monsoon and the recovery in production staged in 2003-04 to 251.86 lakh tonnes and in 2005-06 to 279.78 lakh tonnes again were primarily due to good, timely and evenly distributed monsoon. The Final Estimates for 2006-07 show a reduction in the production of oilseeds to a level of 242.89 lakh tonnes, induced by a reduction in both kharif and rabi production levels - kharif crops recorded a decline in production by 16.44 percent from 167.68 lakh tonnes in 2005-06 to 140.12 lakh tonnes in 2006-07 and rabi crops declined by 8.33 percent from 112.11 lakh tonnes in 2005-06 to 102.77 lakh tonnes in 2006-07. Major oilseeds growing States like Andhra Pradesh, Gujarat, Haryana, Rajasthan and Karnataka witnessed reduction in the area over the previous year. Among crops, groundnut, sunflower and sesamum were affected, both area-wise and production-wise, during the season. This decline could be attributed to 4.8 percent reduction in the area under the crop from 2005-06 to 2006-07, coupled with the overall deficient and uneven distribution of rains during the kharif 2006 season.

(Tables 2.1& 2.2)

2.91 In view of above, the Commission recommends immediate measures to develop technology to evolve high productivity seeds conducive to dry land soil conditions; and assistance, both technical and financial, to farmers for conservation of water through dams and other micro irrigation facilities. The

recently constituted National Rainfed Area Authority should come up with alternate technologies for making cultivation in rainfed areas sustainable and profitable.

2.92 Ministry of Agriculture has kept a target of 300 lakh tonnes for oilseeds for 2007-08. As per the Second Advance Estimates for Kharif 2007-08, oilseeds production in 2007-08 kharif season is estimated to record an increase to 175.74 lakh tonnes from the kharif 2006-07 production level of 140.12 lakh tonnes. The enhanced production levels anticipated during 2007-08 appear to be realistic in view of the high market prices (above MSP) of oilseeds prevailing since the latter half of 2006, coupled with favourable weather conditions.

Table 2.12 : Production of Nine Major Oilseeds

(Lakh tonnes)

Crop	Season	2005-06	2006-07 (Final Estimates)	2007-08 (Second Advance Estimates)
1	2	3	4	5
Groundnut	Kharif	62.98	32.94	58.09
	Rabi	16.95	15.69	14.85
	Total	79.93	48.64	72.94
Castorseed	Kharif	9.91	7.62	10.36
Sesamum	Kharif	6.41	6.18	7.32
Nigerseed	Kharif	1.08	1.21	1.13
Rapeseed & Mustard	Rabi	81.31	74.38	70.65
Linseed	Rabi	1.73	1.68	1.34
Safflower	Rabi	2.29	2.40	2.15
Sunflower	Kharif	4.56	3.66	4.30
	Rabi	9.83	8.62	6.89
	Total	14.39	12.28	11.19
Soyabean	Kharif	82.74	88.51	94.54
Total Nine Oilseeds	Kharif	167.68	140.12	175.74
	Rabi	112.11	102.77	95.88
	Total	279.79	242.89	271.62

Source: Directorate of Economics & Statistics,
Department of Agriculture & Cooperation.

2.93 In the absence of major breakthrough in oilseed yields, the production levels are determined mainly by area coverage under the crop in a season. For

instance, during 2006-07 which experienced sharp decline in the production of oilseeds in the country, area sown under nine major oilseeds recorded a decline of about 13.5 lakh hectares (4.8 percent) to 265.13 lakh hectares in 2006-07 from 278.63 lakh hectares in 2005-06, with the kharif oilseeds area coverage declining by 5.9 lakh hectares (3.4 percent) and the rabi oilseeds coverage by 7.5 lakh hectares (7.2 per cent) compared to previous year's levels. Major oilseed crops, including rapeseed-mustard, sunflower and groundnut witnessed area reduction during 2006-07, as shown in the table below. This area reduction in rapeseed and mustard can be attributed to substitution in favour of wheat in States like Rajasthan, Punjab and Haryana, due to higher price realization in respect of wheat. The envisaged increase in the 2007-08 Kharif oilseed production is also being attributed to acreage increases in respect of oilseeds like soyabean, groundnut and castor seed.

Table 2.13 : Area Sown under Nine Major Oilseeds

(In Lakh Hectares)

	2005-06	2006-07*
Total Oilseeds	278.63	265.13
Total Kharif	173.68	167.70
Total Rabi	104.94	97.43
Rapeseed/Mustard	72.77	67.90
Rabi	72.77	67.90
Sunflower	23.40	21.65
Kharif	9.19	8.60
Rabi	14.21	13.04
Safflower	3.65	3.77
Rabi	3.65	3.77
Linseed	4.37	4.37
Rabi	4.37	4.37
Groundnut	67.36	56.15
Kharif	57.40	47.80
Rabi	9.96	8.35
Sesamum	17.23	17.03
Kharif	17.23	17.03
Soyabean	77.08	83.29
Kharif	77.08	83.29
Nigerseed	4.14	4.69
Kharif	4.14	4.69
Castor seed	8.64	6.28
Kharif	8.64	6.28

* Final Estimate, Source: Ministry of Agriculture.

2.94 Enhancing the productivity can assist in increasing the production of oilseeds, even in a scenario of area reduction. Unfortunately, India's productivity is still hovering about half of the world average, as can be seen from the Table below. The reasons for low yields, as indicated in the Commission's previous reports include antiquated farm practices, absence of quality seeds, cultivation in rain-fed conditions and consequent vulnerability to weather conditions, lack of disease and pest management practices and poor soil.

Table 2.14 : International Comparison of Productivity of Major Oilseeds- 2004- 05

(tonnes/hectare)

Country	Yield(metric tonnes/hectare)
Argentina	2.51
Brazil	2.48
China	2.05
India	0.86
Germany	4.07
U.S.A	2.61
Nigeria	1.04

Source: Economic Survey- 2006-07

2.95 The hardening of oilseed prices witnessed since May, 2006 continued through 2007. The index of wholesale price of oilseeds showed an increase of 15.66 per cent during the five months between November, 2006 and April, 2007. The current financial year (2007-08) started with a wholesale price index of 203.8 which consistently increased to reach a high of 217.2 in July, 2007, registering an increase of 6.57 percent. The prices, since July, 2007 have softened to reach an index of 209.8 in November, 2007. The movements in price of oilseeds are shared by all the major oilseeds, except sesamum, as given in the table below:

Table 2.15: Percentage Change in Index of Wholesale Prices of Oilseeds

	Nov. 06 (Index)	April 07 (Index)	Nov.07 (Index)	Nov. 06 to April 07(%)	April 07 to Nov. 07(%)
Total Oilseeds	176.2	203.8	209.8	15.66	2.94
Rapeseed/Mustard	175.8	191.2	200.5	8.76	4.86
Safflower	139.2	159.6	170.6	14.66	6.89
Groundnut	192.7	225.9	225.8	17.22	(-) 0.04
Soyabean	143.0	173.1	176.1	21.04	1.73
Sunflower	174.5	227.9	255.2	30.60	11.98
Sesamum	195.6	195.0	192.3	(-) 0.31	(-)1.38
Nigerseed	214.9	350.5	432.8	63.10	23.48

Source: Compiled from data from Office of Economic Adviser, Ministry of Commerce & Industry

2.96 The prices of oilseeds are derivative of the movements in the prices of edible oils, fats and meals. The hardening of the domestic oilseed prices witnessed since the latter half of 2006 continued during 2007. The high ruling prices of oilseeds during the current Kharif '07 season was also corroborated by the fact that the central procurement agency for oilseeds, NAFED has reported no procurement of oilseeds during the season in view of the market prices of all kharif oilseeds ruling above MSP. The reasons for the price increases of oilseeds during the last one year can be attributed to factors, both domestic and global. The FAO global price index for oilseeds and oils/fats for September, 2007 stood at 70-80 points above the last year's corresponding value. The major factors responsible for the extraordinary increases in the prices of oilseeds globally are (i) rising demand in the feed and biodiesal requirements; (ii) constant rise in the consumption of vegetable oils and ; (iii) tightening in global supplies due to weak growth of global oilseeds production during 2006-07. Domestically there already exists a widening gap between domestic demand and indigenous supply of vegetable oils, as shown in the Table below, which was accentuated by sharp decline in the production of oilseeds during 2006-07.

Table 2.16: Demand and Supply of Edible Oils

(in lakh Tonnes)

Oil year (Nov-Oct)	Net availability of edible oils from all domestic sources	Consumption of edible oils (domestic+ import sources)	Gap between domestic demand and supply
1	2	3	4
2001-02	61.46	104.68	43.22
2002-03	46.64	90.29	43.65
2003-04	71.40	124.30	52.90
2004-05	72.47	117.89	45.42
2005-06	83.16	126.04	42.88
2006-07	72.43	114.60	42.17
2007-08 (P)	83.81	128.81	45.00

Source : Directorate of Vanaspati, Vegetable Oils & Fat; Column 4 –estimated.

2.97 Imports have conventionally been resorted to, to meet the gap between supply and demand of edible oils and to contain the domestic prices and presently meet about 34 percent of the requirements. The imports of vegetable oils have been increasing through the years as could be seen from the Table below:

Table 2.17 : Imports of Edible Oils

Year (April-March)	Quantity (in lakh tonnes)	Value(Rs. in crore)	Unit Value (Rs./kg)
2000 – 2001	41.77	5976.53	14.31
2001 – 2002	43.22	6464.97	14.96
2002 – 2003	43.65	8779.64	20.11
2003 – 2004	52.90	11683.24	22.08
2004 – 2005	47.51	11076.89	23.31
2005-2006	42.88	8960.99	20.90
2006-2007	42.69	9539.90	22.34
2007-08 (upto September. 2007)	26.29	5677.12	21.59

Source : DGCI&S, Kolkata, Ministry of Commerce & Industry

2.98 In tune with the liberalization policy of the Government, there have been progressive changes in the import policy in respect of oilseeds during the past

few years. Edible oil was first decanalised partially in April, 1994, when import of edible vegetable palmolein was brought under OGL subject to 65 per cent of basic customs duty. Subsequently, imports of other edible oils were also placed under OGL, except coconut oil. The import duty structure has since then been reviewed from time to time, depending on the domestic demand and supply positions. The present import duty structure on edible oils is as follows:

Table 2.18 : Present Import Duty Structure of Edible Oils

Item	Current rates of duty on crude edible oils	Current rates of duty on refined edible oils
Soyabean oil	40%	40%
Palmolein	45%	52.5%
Palm oil	45%	52.5%
Groundnut oil	85%	85%
Sunflower	40%	50%
Safflower Oil	75%	85%
Coconut oil	85%	85%
Rapeseed/Mustard oil	75%	75%
Other oils	85%	85%

2.99 Import duties of palmolein, palm oil and sunflower (import duty of soyabean at 40 per cent against WTO bound rate of 45 per cent) are still kept at lower levels compared to other edible oils. In terms of total global oilseeds consumption, India figures next to China and European Union. With its large population and the growing purchasing power together with strong macro-economic environment, the per capita consumption during the coming years is bound to increase, estimated to be about 5 to 6 percent per annum. Production is still dependent on weather conditions. In view of above, the present trend of meeting the domestic requirement largely through imports is bound to continue in the short to medium term, unless drastic measures are taken to overhaul the

farm practices from the stage of seeds to marketing. However, the high dependence on imports has its own disadvantages, especially in a scenario of increasing global prices as is witnessed presently, since the cost of imports tends to become unsustainable. In this context, the Commission has been emphasizing the need for bringing technological breakthrough in productivity and regulating the import of edible oils. The Commission, therefore, reiterates its earlier recommendation that ***the import duty on edible oils should be kept at such a level that does not affect domestic prices and production of edible oilseeds adversely.***

2.100 Augmentation of the domestic production will also enhance the capacity utilization of the domestic crushing and processing industry. The domestic vegetable oil industry consists of 15,000 oil mills, 600 solvent extraction units, 600 vegetable oil refineries and 250 vanaspati units spread across the country, engaged in crushing oilseeds and processing vegetable oils. The present capacity utilizations are in the abysmal low ranges of an average of 10 per cent for the ghanis (small scale sector) to around 30 per cent in case of the expellers in the organized sector. Any augmentation of domestic availability of oilseeds by increasing oilseeds production within the country will enhance utilization of edible oils processing capacity within the country along with overcoming the dependence of the country on imported vegetable oils as also increasing the prospects of the farmers engaged in oilseeds cultivation.

2.101 The Commission, in the previous reports, has been recommending the need to formulate a facilitative strategy to exploit the available potential of vegetable oils from secondary sources to augment net availability of edible oils in the country. While marginal increases in production were witnessed in case of rice bran and cotton seed during the last two years, the production of tree born oilseeds has decreased to 1.20 lakh tonnes in 2006-07 from 1.30 lakh tonnes achieved in 2005-06. Considering the prospects of increased demand for oilseeds as feedstock for bio-fuels, the Commission reiterates its earlier

recommendation for creating a facilitative environment for increasing the production of oilseeds from secondary sources.

Table 2.19 : Production of Veg. Oils and Net Domestic Availability of Edible Oils

(In Lakh Tonnes)

Commodity	2002-03	2003-04	2004-05	2005-06	2006-07
A. Primary Sources					
Groundnut	9.48	18.69	15.58	18.38	11.46
Rapeseed/ Mustard	12.03	19.50	23.54	25.21	20.75
Soyabean	7.45	12.51	11.00	13.24	13.87
Sunflower	2.88	3.07	3.92	4.75	3.69
Sesamum	1.37	2.42	2.09	1.99	1.74
Nigerseed	0.26	0.33	0.34	0.32	0.32
Safflower	0.54	0.40	0.52	0.69	0.59
Castor	1.71	3.19	3.17	3.96	3.16
Linseed	0.53	0.59	0.51	0.52	0.44
Sub-Total	*36.24*	*60.70*	*60.67*	*69.06*	*56.02*
B. Secondary Sources					
Coconut	5.50	5.50	5.50	4.20	4.50
Cottonseed	4.30	4.30	4.30	5.70	6.30
Rice Bran	6.00	6.00	6.20	6.80	7.00
Solvent Extracted Oils	2.00	3.30	3.50	4.30	3.40
Tree & Forest Origin	0.80	0.80	0.80	1.30	1.20
Sub-Total	*18.60*	*19.90*	*20.30*	*22.30*	*22.40*
C. Total Production **(A+B)**	54.84	80.60	80.97	91.37	78.42
D. Less: Exp & Indus. Use	8.20	9.20	8.50	8.20	7.80
E. Net Dom. Availability **(C-D)**	46.64	71.40	72.47	83.16	70.62
F. Imports	43.65	52.90	45.42	42.88	47.00
G. Actual Consumption **(E+F)**	90.29	124.30	117.89	126.04	117.62

Source: Data for 1999-2000 to 2006-07 are taken from "Agriculture Statistics At A Glance 2007", Directorate of Economics & Statistics, DAC.

2.102 The Commission in its last Kharif Report had at length dealt with the problems and prospects of palm oil cultivation under the Oil Palm Development Programme (OPDP) of the TMOP set up in 1992, for development of oil palm

trees. To augment oilseeds production and oil availability, the Commission again recommends that the ***Technology Mission on Oilseeds & Pulses should examine the suggestion of the oil industry to declare cultivation of oil palm as plantation and allow the public and private enterprises to enter in this field and make suitable recommendations to the Government in this regard***.

2.103 Indian oilseed economy is impacted by global trends in production and prices mainly because of its status as one of the largest importer of edible oil in the world. As per FAO "Food Outlook"(November,2007) global oilseed production in 2007-08 is forecast to decline by about 3.4 per cent from last season's level, contributed mainly by an anticipated 6 per cent decline in the production of soyabean and 10 per cent drop in the production of sunflower over 2006-07 levels. Factors like competition from grains, especially in the USA, China and the CIS countries and unfavourable weather conditions are quoted (FAO Food Outlook-November, 2007) as the reasons for the anticipated reduction. The Table below indicates the position.

Table 2.20: World production of major oilseeds

(million tonnes)

	2005-06	2006-07	2007-08
		(estimate)	*(forecast)*
Soyabeans	221.4	236.8	222.5
Cottonseed	42.5	44.5	44.4
Rapeseed	48.9	47.0	48.6
Groundnut (unshelled)	35.7	33.8	34.8
Sunflower	30.1	29.7	26.6
Palm kernels	9.7	10.0	10.7
Copra	5.3	4.9	5.2
Total	393.6	406.7	392.8

Source: Food outlook, FAO- November 2007

Note: The split years bring together northern hemisphere annual crops harvested in the latter part of the first year shown, with southern hemisphere annual crops harvested in the early part of the second year shown. For tree crops which are produced throughout the year, calendar year production for the second year shown is used.

2.104 The upward trend in the global oilseed prices witnessed during the second half of 2005-06 continued in 2006-07. In September, 2007, the FAO price index for oilseeds and oils/fats stood at 70-80 points (or 60-70 percent) and the index for meals/ cakes stood 32 points (18 percent) above last year's corresponding values. The unprecedented price rise have been attributed to rising demand for oilseed (especially soyabeans) in the feed as well as energy markets, growing demand for vegetable oils for biodiesel requirements and constant rise in the demand for vegetable oil for food consumption, coupled with tightening of the global oilseed supplies during 2006-07. As per the present estimates of global demand and supply, the international prices for oilseeds and oilseed products during 2007-08 are expected to remain firm. Reduced growth in global oils/fats supplies; significant fall in the supply of meals due to reduction in oilseed production, coupled with increasing global demand for oilseeds in the food, feed and energy sector; and firmness in the global grain market are expected to fuel the price increases in the 2007-08 season.

Table 2.21: Trends in International Wholesale Prices of Vegetable Oils &Fats

(US $ / MT)

Period Average	Coconut Oil	Ground-nut Oil	Palm Oil	Soyabean Meal	Soyabean Oil	Soyabean
Apr.-June 2006	578.7	896.0	438.7	197.3	576.3	263.7
July-Sep. 2006	599.4	946.0	492.7	208.3	620.3	263.7
Oct.-Dec. 2006	671.2	1121.0	545.7	230.3	662.2	290.0
Jan.-March 2007	754.3	1170.0	608.7	255.7	709.7	317.7
Apr.-June 2007	900.2	1190.0	762.3	260.3	793.9	338.3
July-Sep. 2007	923.0	1397.0	822.3	309.5	917.5	395.5
October 2007	1010.0	1462.5	881.0	384.0	1012.0	450.0

Source : World Bank

2.105 The futures market also indicates the same direction in the movement of prices. In the first half of October 2007, the Chicago Board of Trade (CBOT)

March contract for soyabean was about US$150 per tonne (or 67 per cent) higher than the corresponding value of 2006.

2.106 World consumption of oil/fat during 2007-08 is expected to increase at a slow rate of 3 per cent compared to the 5 per cent growth witnessed in the past years, mainly because of the anticipated stagnation in supplies. However, the demand for vegetable oils for energy and heating purposes and as feedstock for biofuel is envisaged to grow further in 2007-08. Overall, continued growth in world consumption of oil/fat is expected despite high vegetable oil prices. Tightening of the global supplies of oil/fat production during 2007-08 is expected to draw down on the stocks by about 11 per cent .Trade in vegetable oil is expected to increase by about 4 per cent during 2007-08, triggered by larger volumes of imports expected from China and European Union and overall enhanced trade expected in respect of biofuels. Imports by India are expected to fall in view of the anticipated record harvest in 2007-08.

2.107 The oilseed meal/cake output is also expected to reduce by about 4 per cent over last year's output in view of the envisaged reduction in global crop forecasts during 2007-08. Total demand of meal/cake, on the other hand, is expected to increase by 5 per cent, in spite of high prices in view of improvements in household incomes in Asia and surge in the prices of feed grains. Global trade in meal/cake is expected to increase by about 5 per cent, almost the entire increase to be attributed to soyabean meal. The world oilseeds and products market scenario is captured in the following table.

Table 2.22: World oilseeds and products markets at a glance

(million tonnes)

	2005-06	2006-07.	2007-08
	(estimate)	*(forecast)*	
Total oilseeds			
Production	404	417	403
Oils and fats [1]			
Production	149	151	154
Supply [2]	168	172	174
Utilization [3]	146	152	157
Trade [4]	72	76	79
Stock-to-utilization ratio (%)	14	13	11
Oilmeals and cakes [5]			
Production	101	106	102
Supply [2]	113	121	119
Utilization [3]	98	102	108
Trade [4]	55	59	62
Stock-to-utilization ratio (%)	15	17	11

Source: Food outlook, FAO- November, 2007

[1]Includes oils and fats of vegetable and animal origin

[2] Production plus opening stocks

[3] Residual of the balance

[4] Trade data refer to exports based on a common October/September marketing season.

[5] All meal figures are expressed in protein equivalent; meals include all meals and cakes derived from oilcrops as well as fish meal.

The status of major individual crops with respect to parameters like area, production, demand and prices etc., are indicated in the following paragraphs:

Groundnut

2.108 Groundnut is a major oilseed crop in India, accounting for about 21 percent of the area under oilseeds and 20 percent of the oilseeds production (2006-07). The production presently constitutes about 5 million tonnes (2006-07), which is about 14.8 per cent of the world production. The decade 1995-96 to 2006-07 showed a decline of 2.18 per cent and 2.52 per cent in area and production respectively compared to the positive growth rates achieved in both area and production during the preceding decade, 1985-86 to 1995-96. The yield rates also indicate a similar pattern- positive growth rate during the decade 85-86 to 95-96 and a negative growth during the decade 1995-96 to 2006-07. As indicated earlier in the report, the better performance of the earlier decade could be attributed to the initial success of the Technology Mission on Oilseeds to bring about viable farm practices and use of inputs, which got petered out in the later years and due to more competition from competing crops for land. During 2006-07, area, production and yield declined to 56.15 lakh hectares, 48.64 lakh tonnes and 866 kg/ha respectively. However, as per the Second Advance Estimates for 2007-08, the kharif production is expected to make a recovery to 58.09 lakh tonnes, an increase of about 76.5 percent over the last years production.

(Tables 2.1 & 2.2)

Soyabean

2.109 Soyabean is predominantly grown in the States of Madhya Pradesh, Maharashtra and Rajasthan, mainly under rainfed conditions. There has been a rapid increase in the production of soyabean from 4.42 lakh tonnes in 1980-81 to 88.51 lakh tonnes in 2006-07 and 94.54lakh tonnes, estimated for 2007-08. The crop has now emerged as the single largest oilseed crop in terms of both area (32 per cent of the total area under oilseed crops) and production (37 per cent of the total oilseed production), even overtaking rapeseed and mustard and groundnut. Globally, the crop is growing in significance due to its rising demand in the feed, energy and biofuel sectors and also as a health food. Significant

growth witnessed during 1985-86 to 1995-96 in all three aspects of area (15.5 per cent), production (20.9 per cent) and yield (4.7 per cent) could be attributed to the efforts initiated under the Technology Mission on Oilseeds. This trend lost its momentum after 1998-99 and the area, production and yield declined to 61.06 lakh hectares, 46.55 lakh tonnes and 762 kg/hect. respectively in 2002-03. However, in 2003-04, the area coverage improved to 65.55 lakh hectares and the yield reached a record level of 1193 kgs. per hectare due to good, timely and evenly distributed monsoon in the season. The year 2005-06 witnessed further improvement in area and production to 77.08 lakh hectares and 82.74 lakh tonnes respectively, but yield showed a slight decline to 1073 kg/ha. The same trend could be seen during 2006-07 also with production and area coverage showing further increases at 88.51 lakh tonnes and 83.29 lakh hectares respectively. However, yield further reduced to 1063 kg../ha. during the year. The Second Advance Estimates for 2007-08 has put the production at 94.54 lakh tonnes, an increase of about 6.0 lakh tonnes over last year's production.

(Tables 2.1& 2.2)

Nigerseed

2.110 The significance of nigerseed as one of the nine major oilseeds in the country stems from the fact that it is grown mainly in the tribal areas of Madhya Pradesh, Chhattisgarh, Orissa, Maharashtra and in view of its export potential. The crop presently occupies about 2 per cent of the area under oilseeds and less than 1 percent of the production of oilseeds in the country. The area, production and yield recorded at 6.01 lakh hectares, 1.9 lakh tonnes and 317 kgs. per hectare respectively in 1995-96 declined to 5.04 lakh hectares, 1.48 lakh tonnes and 293 kgs. per hectare respectively in 1999-00 and further to 4.14 lakh hectares, 0.86 lakh tonnes and 208 kgs. per hectare respectively in 2002-03. As per the 2006-07 estimates, area, production and yield are estimated at 4.69 lakh hectares, 1.21 lakh tonnes and 258 kgs/ha respectively, an indication of stagnancy in all three parameters. As per the Second advance production estimates for 2007-08, the production of the crop will be 1.13 lakh tonnes, a decline of 0.08 lakh tonnes. In view of its export potential and considering the

vulnerable areas where the crop is grown, serious efforts need to be taken to increase its area, production and yield. The volume of nigerseed exported during 2000-01 to 2006-07 is given below:

Table 2.23: Export of Nigerseed

Year	Quantity (In 000'tonnes)	Value (In Rs. Crore)	Unit value (In Rs./kg.)
2000-01	29.49	80.35	27.25
2001-02	22.22	47.85	21.53
2002-03	36.13	77.99	21.59
2003-04	17.89	45.41	25.38
2004-05	24.60	61.14	24.85
2005-06	28.42	60.25	21.20
2006-07	30.02	66.89	22.28

Source: DGCI&S. Kolkata

Sesamum

2.111 Sesamum is mainly grown in Gujarat, West Bengal and Rajasthan. It is also grown in small areas in Andhra Pradesh, Madhya Pradesh, Maharashtra and Tamil Nadu. Area and production under the crop have been stagnating; the cultivation hovering about 6-7 per cent of the total area under oilseeds and contributing about 2-3 per cent of the total oilseeds production since 1995-96. The area, production and yield after falling to 14.44 lakh hectares, 4.41 lakh tonnes and 306 kgs. per hectare respectively in 2002-03, improved to 17.00 lakh hectares, 7.82 lakh tonnes and 460 kgs. per hectare respectively in 2003-04 mainly due to favourable monsoon. However, the production has been declining from 6.74 lakh tonnes achieved in 2004-05 to 6.41 lakh tonnes in 2005-06 to 6.18 lakh tonnes in 2006-07. The production estimate for 2007-08 shows an increase to 7.32 lakh tonnes. The crop yield varied widely in different states, from 878 kgs. per hectare in West Bengal to 212 kgs. per hectare in Uttar Pradesh (TE 2006-07).

(Table 2.1)

2.112 Like nigerseed, the international demand for sesamum seeds was quite good and the unit value of its export was much higher than MSP. The export of sesamum seed both in terms of volume and value from 2000-01 to 2006-07 is given in the following table:

Table 2.24 : Export of Sesamum

Year	Quantity (In 000'Tonnes)	Value (In Rs. Crore)	Unit Value (In Rs. per kg.)
2000-01	183.31	517.57	28.24
2001-02	218.97	562.23	25.68
2002-03	118.38	373.01	31.51
2003-04	189.11	708.89	37.48
2004-05	156.66	662.45	42.28
2005-06	199.81	746.60	37.37
2006-07	233.34	939.58	40.27

Source: DGCI&S, Kolkata

Sunflower

2.113 Sunflower is mainly grown in Karnataka, Andhra Pradesh and Maharashtra and in small areas in Uttar Pradesh, Punjab, Haryana and Tamil Nadu. Its importance as an oilseed crop has been increasing in terms of both area and production and presently occupies 4th position after soyabean, rapeseed and mustard and groundnut. Like other oilseeds crops, the area, production and yield of sunflower also increased with the setting up of the Technology Mission on Oilseeds in 1986. The year 2002-03 saw sudden increase in the area coverage under the crop to 16.42 lakh hectares from 11.77 lakh hectares achieved in 2001-02 and this trend continued up to 2005-06, when the area coverage increased to 23.40 lakh hectares. The year 2006-07 witnessed about 7.5 percent decline in the area coverage, which stood at 21.65 lakh

hectares during the year. Production also showed consistent increases during the period from 2001-02 to 2005-06, from 6.8 lakh tonnes to 14.39 lakh tonnes. However, production declined by 2.12 lakh tonnes during 2006-07. The second advance estimates of the Ministry of Agriculture for kharif 2007-08 has put the production of this crop at 4.30 lakh tonnes , which is higher by 0.64 lakh tonnes achieved during 2006-07 kharif season. (Tables 2.1 & 2.2)

2.114 The recorded per hectare yield of the crop in 2006-07 was highest in Tamil Nadu (1828 kg.) followed by Haryana (1667 kg.), Punjab (1640 kg.), Uttar Pradesh (1500 kg), Andhra Pradesh (738 kg.), Maharashtra (548 kg.) and lowest in Karnataka (420 kg.). In view of the high productivity of sunflower in Tamil Nadu Haryana, Punjab and Uttar Pradesh, this crop can be an alternative to the paddy in these states provided the proper marketing and processing arrangements are made on the same scale as being made for the procurement/price support operations of paddy.

Cotton

2.115 Cotton occupies an important place among the cash crops in India in terms of production (28 million bales as per trade estimate) and area coverage (9.14 million hectares) in 2006-07. Cotton contributes about 60 per cent of the yarn requirements of the textile industry and is a major foreign exchange earner through exports of cotton yarn. Globally, India is the second largest producer of cotton after China and has the distinction of having the world's largest cotton crop area, accounting for over one-fourth of the world cotton area. In its latest release, the International Cotton Advisory Committee has projected India to emerge as the world's second largest exporter of cotton in 2007-08. However, productivity of the crop, though shown improvement in recent years, is still a concern, in comparison with other countries, being only 69 percent of the world average.

2.116 The Commission, in the last report had highlighted the need for reconciling the differences in the production estimates brought out by the two available sources, viz., official estimates released by the Directorate of Economics and Statistics (DES), Ministry of Agriculture and trade estimates from the Cotton Advisory Board (CAB), Ministry of Textiles. Trade estimates for 2006-07 season was much higher at 28.00 million bales as against the official estimate of 22.63 million bales (Final Estimates of DES). Further, trade estimates for 2007-08 season are placed at 31.00 million bales as against the official estimate at 23.38 million bales (Second Advance Estimates of DES). Analysis and policy decision making get constrained by such wide variations in the production estimates and, therefore, the Commission strongly reiterates the earlier recommendation that ***the Directorate of Economics and Statistics and the Office of the Textile Commissioner, through mutual consultation, should immediately reconcile the production estimates of cotton and a single series of the same be arrived at.*** (Table 2.1)

2.117 Cotton is grown in nine major states in India and is grouped into three main agro-climatic zones. The Northern zone comprises Punjab, Haryana and north Rajasthan. The Central zone covers Gujarat, Maharashtra and Madhya Pradesh and the Southern zone includes the states of Andhra Pradesh, Karnataka and Tamil Nadu. The second half of 1990's witnessed significant increases in the area under cotton. The average area under cotton during 1995-96 to 1999-2000 was 9.00 million hectares in contrast to the average coverage of 7.56 million hectares achieved during 1990-91 to 1994-95. This decade (since 2000-01) has witnessed inter-year fluctuations in area coverage. The year 2001-02 saw an increase in the area to 9.13 million hectares from 8.54 million hectares covered in 2000-01. However, the coverage declined to 7.67 million hectares in 2002-03 and further to 7.60 million hectares in 2003-04. Since 2004-05, the area coverage has again increased to reach a level of 9.14 million hectares in 2006-07, 5.30 percent increase over 2005-06 level; stated to be on account of promotional efforts for BT cotton by seed suppliers and accelerated spread of

technology transfer, especially in the States of Gujarat and Punjab. As per the present trade estimates, the area under cotton is estimated to increase by 4 percent during 2007-08 to 9.53 million hectares, surpassing the earlier highest record of 9.34 million hectares achieved in 1998-99. (Table 2.1)

2.118 As can be seen from the Table below, the area increases in the recent years have been mainly contributed by the Central zone.

Table 2.25 : Indian Cotton Area Zone-wise

(in lakh ha)

Season	Northern Zone	Central Zone	Southern Zone	Total (All India)
2002-03	13.54	49.79	12.81	76.67
2003-04	13.22	50.04	12.53	76.30
2004-05	15.68	53.22	18.28	87.86
2005-06	16.11	54.01	15.86	86.77
2006-07	14.87	60.99	14.69	91.42
2007-08	14.94	63.69	15.89	95.29

Source: CAB, Ministry of Textiles, Mumbai

2.119 In the central zone, the States of Gujarat and Maharashtra contributed maximum to this rise in area- 25.39 percent and 6.78 percent increase respectively in 2006-07 over 2005-06. Higher income realized by farmers, especially in Gujarat, due to increase in prices and improvements in yields, coupled with early onset of monsoon could be attributed to this shift in area during 2006-07. In the Northern zone, Punjab and Rajasthan contributed to the increase, while in Haryana the area decline was attributed to inadequacy of canal water. The three Southern States witnessed declines mainly due to lack of timely onset of monsoons during sowings and failure of BT cotton in parts of Andhra Pradesh and Tamil Nadu. The agro-climatic conditions during the current season 2007-08 have been quite favourable in majority of cotton growing States, except excessive rains in Gujarat, Maharashtra and certain parts of Madhya Pradesh.

2.120 A significant development in the recent years has been the increasing area under Bt cotton cultivation. Its share in the total cotton area shot up to 38 per cent in 2006-07 from 12 per cent in the previous year. As per reports, 85 percent of the total area under cotton in the country was under hybrid cotton in 2007 and the area under Bt cotton alone was about 67 per cent as may be seen from the following Table. Bt cotton coverage has been highest in Andhra Pradesh (91 per cent); followed by Punjab (85 per cent); Maharashtra (81 per cent); Madhya Pradesh (71 per cent); Tamil Nadu (64 per cent); Haryana (53 per cent); and Gujarat (52 per cent). Bt cotton coverage increased considerably in all major cotton growing States during 2007-08 except in Karnataka where it has decreased from 22 per cent to 10 per cent over the previous year. While the productivity gains from the use of Bt cotton has been fairly established, its success would depend upon the availability of irrigation and quality seeds, which are reportedly lacking in many cotton growing areas

Table 2.26: Area and Coverage under BT* Cotton over last five years

(in lakh hectares)

State	2005-06			2006-07			2007-08		
	Area	Bt area	% age	Area	Bt area	% age	Area	Bt area	% age
Punjab	5.57	0.70	13	5.88	2.81	48	6.48	5.57	85
Haryana	5.83	0.11	2	5.33	0.42	8	4.78	2.79	53
Rajasthan	4.71	0.02	0.4	3.50	0.05	1	3.68	0.38	10
Gujarat	19.06	1.49	8	23.90	4.07	17	25.16	13.00	52
Maharashtra	28.75	5.09	18	31.24	16.55	53	31.91	26.00	81
M.P.	6.20	1.36	22	6.30	3.02	48	6.62	4.71	71
A.P.	10.33	0.90	9	9.62	6.57	68	10.96	10.01	91
Karnataka	4.13	0.29	7	3.70	0.80	22	4.04	0.40	10
Tamilnadu	1.40	0.17	12	1.33	0.32	24	0.75	0.48	64
Total	86.77	10.15	12	91.58	34.61	38	95.06	63.34	67

Source: Directorate of Cotton Development, Mumbai
Note: * BT Area coverage as per official estimates

2.121 During the decade 1990-91 to 1999-2000, the productivity of cotton moved in the range of 264 kg/ha in 1991-92 to 332 kg/ha in 1996-97, with the

average at about 298 kg/ha. The year 2000-01 witnessed an 8 percent decline in productivity from the level of 304 kg/ha achieved in 1999-2000. However, the average yield has shown consistent and significant increases in the subsequent years from 294 kg/ha in 2001-02 to 301 kg/ha in 2002-03 to 470 kg/ha in 2004-05 and further to 521 kg per hectare in 2006-07. The yield level is expected to reach 553 kg/ha in 2007-08. There exist wide inter-state variations, which can be attributed to diverse climatic conditions, lack of irrigation facilities and small size of holdings. As per the 2006-07 trade estimates, the average yield of Punjab has increased significantly to 752 kg/ha, followed by Gujarat (718 kg/ha); Tamil Nadu (639 kg/ha); and Andhra Pradesh (618 kg/ha). Maharashtra which has the single largest concentration of cotton area (34 per cent) however contributes only 19 per cent of the production and has one of the lowest productivity levels estimated at 288 kg lint/ha, though it was an improvement over the 2005-06 yield levels of 212 kg lint/ha. The productivity is expected to increase to 320 kg lint/ha during 2007-08. The one major reason for the less than average performance of Maharashtra in the cotton cultivation is water deficiency and lack of irrigation coverage, coupled with reported prevalence of malpractices like distribution of spurious seeds and lack of knowledge about efficient pest management. The tremendous increases in the yield levels of Punjab in the recent years can be attributed to extensive spread of bollworm resistant Bt cottons, coupled with absence of unseasonal rains and pest attacks. The success of Gujarat can also be attributed to spread of Bt cottons, together with high standard of cultivation existing in the state. Among the southern states, the performance of Karnataka has been much below that of Tamil Nadu and Andhra Pradesh, mainly due to unfavourable weather conditions. Table below provides the distribution of cotton acreage and production over major producing states and the inter-state variations in productivity.

Table 2.27: Estimated Area, Production and Yield of Cotton during 2007-08

(Area in lakh hectares)

(Production in lakh bales of 170 kg. each)

Sl. No.	Name of the State	Area estimated	Production Estimated	Yield Kg/ha.
1.	Punjab	6.48	24.00	630
2	Haryana	4.78	16.00	569
3	Rajasthan	3.68	9.00	416
	NORTHERN ZONE	14.94	49.00	558
4	Gujarat	25.16	110.00	743
5	Maharashtra	31.91	60.00	320
6	Madhya Pradesh	6.62	21.00	539
	CENTRAL ZONE	63.69	191.00	510
7	Andhra Pradesh	10.95	43.00	668
8	Karnataka	3.71	8.00	367
9	Tamil Nadu	1.23	5.00	691
	SOUTHERN ZONE	15.89	56.00	599
10	Others	0.77	2.00	315
11	Loose cotton consumed but not accounted for in state-wise production	…	12.00	
	TOTAL	95.29	310.00	553

Source: Office of the Textile Commissioner, Government of India.

2.122 While the productivity of cotton in India has shown consistent increases during the last few years, the productivity is still much lower when compared to China, USA and the world average, as can be seen from the Table below:

Table2.28: Trend in Average Yield

Year	Average Yield (Kg Lint/ha)			
	China	USA	India	World
1980-81	550	453	169	411
1990-91	807	711	267	574
2000-01	1093	1008	278	612
2006-07	1251	912	521	757

Source: CAI (Cotton Statistics and News dated 6th Nov., 2007).

2.123 One redeeming feature, however, is that the growth rate of average yield in India has far outpaced that of world average. During the years 2000-01 to 2006-07, the world average yield grew by only 24 per cent from 612 kg to 757 kg whereas Indian average posted a growth of 87 per cent from 279 kg to 521 kg.

2.124 The trend in the domestic production of cotton has been one of consistent increases during the last four years, since 2003-04. The production of cotton which stood at 158 lakh bales in 2001-02, increased to 179 lakh bales in 2003-04 and further to 241 lakh bales in 2005-06. Production reached a level of 280 lakh bales in 2006-07 and is estimated to go up to 310 lakh bales in 2007-08. The extensive spread of hybrid and Bt cotton, adoption of scientific practices, increased area under irrigated cotton particularly in Gujarat, availability of quality seeds and several initiatives like launching of Technology Mission in cotton and developmental efforts and programmes sponsored by some State Governments and industry organizations, lower contamination and price competitiveness have led to rising production levels in the last few years. Among the individual states, the maximum increase in production during 2006-07 season was recorded by Maharashtra, an increase of 48.5 percent over the previous year's levels, followed by Punjab (30 percent) and Gujarat (13.5 percent). The State-wise production details are given below:

Table 2.29: State-wise Production of Cotton

(in lakh bales of 170 kgs)

State	2005-06	2006-07	2007-08(P)
Punjab	20.00	26.00	24.00
Haryana	12.00	16.00	16.00
Rajasthan	9.00	8.00	9.00
Northern Zone	41.00	50.00	49.00
Gujarat	89.00	101.00	110.00
Maharashtra	35.00	52.00	60.00
Madhya Pradesh	19.00	18.00	21.00
Central Zone	143.00	171.00	191.00
Andhra Pradesh	33.00	35.00	43.00
Karnataka	6.00	6.00	8.00
Tamil Nadu	5.00	5.00	5.00
Southern Zone	44.00	46.00	56.00
Other States	1.00	1.00	2.00
Loose cotton	12.00	12.00	12.00
Total (All India)	241.00	280.00	310.00

Source: Office of the Textile Commissioner, Ministry of Textiles, Mumbai.

(P) Estimated by CAB as on 11.1 2008

2.125 While the appreciable growth in area, production and productivity of cotton since 2004-05 is welcome, efforts should be made to sustain this growth momentum. The Commission recommends that ***the extension machinery of State Governments should be geared up to check marketing of spurious seeds and to educate farmers on the farm practices required for the successful cultivation of Bt cotton, especially in areas affected by farmers' suicide. The Government should also immediately target the water deficient/dryland cotton growing areas for increasing the irrigation coverage through ponds, drip irrigation etc.***

2.126 The last two years have also witnessed varietal imbalances, different from what have been existing in the previous years. While the supply position with respect to short, medium and long staple groups have been comfortable, imports

have been resorted to in case of Extra Long Staple (ELS) category to meet the demand-supply gaps. While the shortage in respect of ELS continues to persist, there has been a reduction in the production of short and medium staple varieties, presumably due to change in the mindset of farmers to switch over to medium and long staple varieties, in view of availability of Bt/hybrid varieties in the latter categories. A comparison of the seasonal average price of various varieties of cotton, as indicated in the following Table, also supports the above visible trend.

Table 2.30: Seasonal Average Spot Rate (October-September)

(Rs./qtl)

Variety	2005-06	2006-07	Percentage change
V-797	3513	4314	(+) 22.8
J-34	4474	4903	(+)09.6
LRA-5166	4614	5150	(+)11.6
H-4	4786	5179	(+)08.2
S-6	5096	5392	(+)05.8
DCH-32	11619	9148	(-)21.3

Source: Office of the Textile Commissioner.

2.127 V-797, a short staple variety experienced maximum price increase (22.8 per cent) during the reference period. On the other hand, in respect of ELS, which has been consistently in short supply and imports have been resorted to meet the demand-supply gap, there has been a decline in the price during 2006-07, compared to 2005-06. While in respect of short-staple cotton, the limiting factor is absence of high-yielding varieties, in respect of ELS, the domestic producers appear to be preferring imported ELS varieties and hence the requirement in this variety is to develop superior fibre traits. There is, therefore,

an urgent need to attune the staple group-wise production with the demand pattern.

2.128 The domestic demand for cotton has been maintaining an upward trend during the recent years, due to expansion of the textile industry and boom in exports of cotton textiles. The total consumption of cotton during 2006-07 was 235 lakh bales, an increase of 7.31 percent over the previous year's demand. On the export front, India is gradually emerging as a major player in the world cotton trade and exports and during 2006-07 recorded a new peak of 55 lakh bales from the 47 lakh bales achieved in 2005-06, mainly due to increased acceptance of Indian cotton by China and ASEAN countries and the continued buoyancy in world cotton prices. With the estimated production of 280 lakh bales during 2006-07 and a nominal import of 5.5 lakh bales of specific quality cotton, the total domestic supply of cotton would be 337.50 lakh bales, the highest ever so far. The above demand and supply position would leave a closing stock of 47.50 lakh bales, which is stated to be sufficient to meet the factory demand for 3 months beginning October, 2007. The domestic demand during 2007-08 is expected to continue its buoyancy at 245 lakh bales, an increase of 10 lakh bales over the previous year. Exports from the country are estimated to reach a record quantity of 65.00 lakh bales or more due to continued buoyancy in world cotton prices, despite squeezed export margins due to appreciation of rupee against US dollar in recent months. However, as per present indications, the above demand will be met through a total anticipated supply of 364 lakh bales of cotton, which includes 6.5 lakh bales of import. The year 2007-08 is expected to close with a stock of 54 lakh bales. Cotton balance sheet as in January, 2008 is given below:

Table 2.31: Cotton Balance Sheet (as on 11-01-08) in lakh bales of 170 kg

	2004-05 (final)	2005-06	2006-07	2007-08
Supply				
Opening Stock	21.00	72.00	52.00	47.50
Crop	243.00	241.00	280.00	310.00
Imports	12.17	5.00	5.50	6.50
Total Supply	276.17	318.00	337.50	364.00
Demand				
Mill Consumption	163.98	180.00	200.00	207.00
SSI consumption	16.57	19.00	20.00	23.00
Non-mill Consumption	14.48	20.00	15.00	15.00
Exports	9.14	47.00	55.00	65.00
Total Demand	204.17	266.00	290.00	310.00
Closing Stock	72.00	52.00	47.50	54.00

Source: CAB, Ministry of Textiles, Mumbai.

2.129 The prices of all varieties of cotton, except the ELS cotton (DCH-32), consistently remained high throughout the current cotton season, compared to 2006-07 marketing season. This was despite a comfortable supply position (arrivals ranging between 2.25 to 2.35 lakh bales per day) with a carry-over of 47.50 lakh bales from the previous season. Sustained demand from mills, larger demand for Indian cotton from Chinese and other South Eastern countries and sustained firmness in the world cotton prices have contributed to this buoyancy. The opening kapas prices during the current cotton season ruled above the MSP level by around 4 to 12 per cent and also higher than the last year except ELS cotton (DCH-32). However, from the third week of October, 2007 the prevailing kapas prices in Warangal, Adilabad and Guntur areas of Andhra Pradesh as well as in Orissa started ruling at MSP level. Since the end of November, 2007 cotton prices remained steady due to consistent demand especially from exporters and also from the local mills mainly in varieties like S-6 of Gujarat and H-4/MECH from Maharashtra and Madhya Pradesh. With the forecast of lower world cotton

stock level, rising world consumption and the prospects for rising trade, the price prospects for next season are expected to provide encouragement to the cotton growers in the country.

Table2.32 : Market Prices of Kapas during 2006-07 and 2007-08

(in Rs per quintal)

Date	Desi		J 34		H4		DCH 32	
	2006-07	2007-08	2006-07	2007-08	2006-07	2007-08	2006-07	2007-08
03-10	----	----	1950	2100	------	----	----	----
10-10	-----	----	1915	2125	-----	2125	----	-----
17-10	1860	----	1930	2150	2050	2150	3300	----
25-10	1840	2185	1925	2275	2050	2450	3300	-----
31-10	1890	2100	1940	2310	2150	2280	3150	2800
08-11	1785	2080	1835	2335	2120	2275	3100	2800
13-11	1890	2125	1955	2360	2080	2275	3100	2800
29-11	1870	2300	2050	2435	1990	2250	3250	2900
MSP	**1320**	**1310**	**1890**	**1835**	**1990**	**1980**	**2430**	**2700**

Source: Cotton Corporation of India.

The price quotations of lint during the current season 2007-08 vis-a-vis the previous season 2006-07 are as under:

Table 2.33: Market Prices of Lint during 2007-08 and 2006-07

(Rs./per qtl.)

Date	J-34		LRA		H-4		S-6		DCH-32	
	2007-08	2006-07	2007-08	2006-07	2007-08	2006-07	2007-08	2006-07	2007-08	2006-07
3/10/2007	4809	4527	5455	4696	5483	5062	5736	5371	8436	10826
10/10/2007	4752	4443	5343	4668	5399	4949	5512	5202	8436	10826
17/10/2007	4752	4499	5230	4668	5343	4893	5427	5174	8436	9561
25/10/2007	4893	4499	5090	4668	5202	4893	5568	5174	8436	9701
31./10/2007	5005	4499	5258	4668	5399	4893	5624	5174	8436	9701
09/11/2007	5005	4415	5258	4780	5343	4893	0	5146	0	10123
13/11/2007	5005	4387	5258	4724	5399	4865	5596	5118	8014	10123
29/11/2007	5174	4330	5258	4584	5343	4809	5512	5033	8014	8998

Source: Cotton Corporation of India

2.130 Cotton Corporation of India (CCI) commenced procurement operations in Andhra Pradesh from the second fortnight of October, 2007 as prices of kapas started ruling at MSP level in Warangal followed by Adilabad on 26th October and in Guntur from 5th November, 2007. The kapas prices subsequently started ruling at MSP level in Orissa and CCI extended its MSP operations in these States. The kapas prices in northern states of Punjab, Haryana, Rajasthan have been ruling higher by around 25 percent than MSP and similarly in Gujarat, Maharashtra/Madhya Pradesh have been ruling above the MSP by 18 per cent and 11 per cent respectively. As on 8th January, 2008, CCI has purchased 2.21 lakh bales of cotton comprising of different varieties under procurement operations.

Table 2.34: Procurement by CCI (Upto 8th Jan., 2008)

States	Branch	Equivalent Bales of 170 kg each
Punjab	Bhatinda	0
Haryana	Sirsa	0
Rajasthan	Sriganganagar and Bhilwara	0
Gujarat	Ahmedabad and Rajkot	0
Madhya Pradesh	Indore	0
Maharashtra	Akola and Aurangabad	0
Andhra Pradesh	Adilabad, Warangal and Guntur	216761
Karnataka	Raichur(KRK) and Hubli	0
Tamil Nadu	Coimbatore	0
Orissa	Raiguda	4643
Total		221404

Source: Cotton Corporation of India.

2.131 In addition to CCI, Maharashtra State Cooperative Cotton Growers Marketing Federation under monopoly procurement scheme of the State Government, has also been purchasing kapas in Maharashtra and is reported to

have purchased 12 lakh quintals of kapas in Maharashtra till 30th November, 2007.

2.132 Cotton is also a commodity being traded under Futures Trading. Total value of trading in cotton during April-September, 2007 was Rs. 7.00 crore as against Rs. 317.96 crore in the corresponding period last year.

2.133 Owing to opening up of global trade and increased acceptance of Indian cotton internationally, movements in global demand, supply and prices of cotton exert influence on farmers' cropping decisions and domestic prices. The global cotton prices in 2007-08 is likely to move up by 10 per cent from the current levels. As per the Cotlook A&B index, the current cotton year 2007-08 is expected to witness huge increases in international cotton prices and is expected to average at about 67 cents per pound as against 56 cents per pound projected last year. The increase is comparable to the peak achieved in 2003-04 when the prices averaged at 69.25 cents per pound. The current average of 68 cents per pound during August-November, 2007 was 10 cents above the average of 58 cents per pound realized during the same period last season. The current year started at 66.60 cents per pound which was increased to 68.95 in October, 2007 and further achieved a peak of 70.20 cents per pound in November, 2007. The increase anticipated has been attributed to decrease in the stocks-to-mill use ratio in the world-less China, envisaged decline in world production due to lower cotton area and increased consumption forecasted due to sustained world economic growth and the consequent boost in demand from textile industry.

Table 2.35: International Reference Price of Cotton (in cents per pound)

Month	Cotlook-A @			Cotlook-B(#)		
	2005-06	2006-07	2007-08 P	2005-06	2006-07	2007-08 P
1	2	3	4	5	6	7
August	53.55	59.90	66.60	52.45	NQ	NQ
September	53.95	58.85	68.15	52.65	NQ	68.90
October	57.75	57.05	68.95	55.70	NQ	68.30
November	55.85	57.40	70.20*	54.70	54.55	69.70*
December	56.10	59.45		55.30	56.95	
January	58.35	59.05		57.30	57.45	
February	59.65	57.85		58.10	56.80	
March	57.60	58.40		56.45	57.30	
April	56.25	57.15		55.10	57.45	
May	54.35	55.55		52.85	55.80	
June	55.15	60.60		53.90	NQ	
July	55.40	67.85		54.90	NQ	
Average	56.15	59.10	68.48	54.95	56.61	68.97

P: Provisional * : upto November 15, 2007.

@ : Index based upon the average of the five lowest quotes of 27.78 mm.

: Index based upon the average of the cheapest three quotes of 26.98 mm.

NQ: Not Quoted.

Source: Office of the Textile Commissioner, Ministry of Textiles, Mumbai.

2.134 As per present indication, the world cotton production during the current season 2007-08 is likely to register a decrease in production to 26.02 million metric tonnes, as compared to the production of 26.74 million metric tonnes in 2006-07, a decline of above 2 per cent. The reason cited for this decline is the reduction in the cotton area in 2007-08, which is estimated to be lower by 450 million hectares from last season to 33.6 million ha. While average yield is projected to reach a record of 773 kgs per hectare, both China and India are forecast to reap record crops, making India the second largest cotton producing country in the world since 2006-07. World consumption, however, is estimated to

rise to 27.38 million metric tonnes in 2007-08, about 3 per cent higher than in 2006-07 season. Export is estimated to be higher than 2006-07 level due to expected increase in Chinese imports. On the basis of these calculations, International Cotton Advisory Committee (ICAC) has estimated a closing stock of 11.75 million metric tonnes as in 2007-08 as against 13.11 million metric tonnes last year.

Table 2.36 : World Demand & Supply of Cotton

(Quantity in million metric tonnes)

Year Beginning August	2004-05	2005-06	2006-07	2007-08	2008-09
World Beginning Stock	8.96	11.96	12.89	13.11	11.75
World Cotton Production	27.07	25.52	26.74	26.02	26.61
World Cotton Consumption	23.68	24.92	26.59	27.38	27.67
World Cotton Exports	7.79	9.86	8.12	8.97	8.83
World Ending Stocks	11.97	11.91	13.11	11.75	10.69

(As per latest ICAC release dated 3rd December, 2007)

2.135 To sum up, the domestic cotton economy has been experiencing highly bullish sentiments during the last couple of years, contributed by a number of factors, both domestic as well as international. The liberalization policies of the Government, which resulted in the discontinuation of the Multi-Fibre Agreement in 2004, gave a boost to the textile industry and cotton, which supplies about 60 per cent of the yarn requirements of the textile industry also got benefited by this major policy decision. Sustained global economic and population growth, price competitiveness of cotton vis-à-vis polyester have also enhanced the global demand for cotton and the trend is expected to continue in the future also. Indian cotton has been in demand especially in China and ASEAN countries due to recent breakthrough in the production of long staple cotton and the improvement brought about in purity and grade. India is expected

to become the second largest exporter in 2007-08. On the supply front, recent years have shown rapid increases in production and a redeeming factor is the contribution of yield increases to the production. Genetically modified cotton seeds are increasingly being used, which is also contributing to the increases in production. Government, in its part, has also initiated several schemes and programmes for cotton, textile and clothing sectors. These include the Technology Mission on Cotton, Technology Upgradation Fund Scheme, Scheme for Integrated Textile Parks, etc.

2.136 However, concerted efforts are needed to further improve the productivity and make Indian cotton competitive in the world market through minimizing costs. Availability of high yielding varieties of seeds including Bt cotton, and fertilisers, improvement in irrigation, better credit delivery, improved farm practices, development of market yards and mandis and proper coordination among all agencies associated with the various segments of cotton industry, viz, cotton industry, input supply, raw cotton processing, oil crushing, warehousing and research are necessary for continuing the favourable growth we are witnessing presently. Commission feels that one limiting factor is extension activities. Commission, therefore, considers that extension activities have to be intensified, both qualitatively and quantitatively, to educate farmers on the quality of seeds, use of various inputs, methods of cotton picking, price trends, etc, so that the farmers gain confidence to raise this crop and that the present increases in area and production become sustainable.

TOBACCO

2.137 Tobacco occupies a prominent place among the cultivated cash crops in the country, with six million farmers involved in its cultivation and with about 26 million people dependent on the tobacco industry for employment and livelihood. India ranks third in the world production of tobacco with China and Brazil occupying the first and second positions. Two-thirds of the world production is

accounted for by five countries, namely, China, Brazil, India, USA and Turkey. In the production of cigarettes, India has the twelfth position and occupies fifth position in the global export of tobacco.

2.138 Due to its varied agro-climatic conditions, India produces different kinds of tobacco, important among them, in terms of exports, is the Flue Cured Virginia (VFC) tobacco. VFC tobacco varies in its physical and chemical characteristics depending on the region where it is produced. It is presently exported to over 80 countries. While tobacco is a traditional cash crop, in the recent years, many countries, including India, have been discouraging the consumption of tobacco in view of its adverse impact on health. India is a signatory to the Framework Convention for Tobacco Control (FCTC) negotiated under the auspices of the World Health Organisation and has already translated provisions of FCTC by legislating "The Cigarettes and other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003" in May, 2003.

2.139 VFC tobacco is grown mainly in the states of Andhra Pradesh and Karnataka and also in the states of Maharashtra and Orissa. There are seven soil regions in the country where tobacco is produced. The crop is grown both in light and black soils. The Tobacco Board, after assessing both domestic and international demand, assigns crop size to each tobacco region. All the developmental functions relating to the cultivation of tobacco like extension activities, assisting growers in supply of inputs for improving quality and productivity, auctions for sale and export promotion activities of tobacco are undertaken by the Tobacco Board. Area, production and yield of VFC tobacco with size of unauthorized crop are as follows:

Table 2.37 : Area, production and yield of VFC tobacco

Year	Area in ha.	Marketed Produce (Million Kg)	Average Yield per Ha.	Unauthorised production (Million Kg)
2004-05	183034.3	243.3	1329	67.5
2005-06	191221.6	228.3	1194	29.0
2006-07	205050.0	268.9	1312	36.6
2007-08	200927.0 (as on 23.11.07)	Plantations/auctions in progress	-	-

Source: Tobacco Board

2.140 It can be seen from the above table that both area and production have shown consistent increases, despite various measures taken by the Government to limit the demand and supply of tobacco, including the crop holiday declared by the Tobacco Board in 2000-01. Area coverage during 2005-06 has shown an increase of 4.5 per cent over 2004-05 coverage. This has further increased during 2006-07, showing 7.2 per cent increase over 2005-06 status. The same trend appears to be continuing during 2007-08 also. Marketed produce has also shown increase from 243 Million kg in 2004-05 to 269 Million kg in 2006-07, an increase of about 11 per cent during 2006-07 over 2004-05 produce. The production during 2007-08 is expected to be slightly lower at 260 Million kg, a decline of about 3 percent over the previous years produce. The enhancing area coverage and production of tobacco can be attributed to its special features, viz, short duration, drought tolerance, less pests diseases incidence, small farmers orientation, high profitability and absence of viable alternative crop.

2.141 The balance sheet of VFC tobacco showing supply-demand is given in table below:

Table 2.38: VFC Tobacco – Balance Sheet

(Quantity in Million Kgs.)

	2005-06	2006-07	2007-08
Opening Stock	84.60	82.65	95.55
Production	228.27	269.00	260.00
Total Supply (A)	312.87	351.65	355.55
Domestic Consumption	75.00	82.00	80.00
Export	109.57	120.30	125.00
Farm Wastage	45.65	53.80	52.00
Total Demand (B)	230.22	256.10	257.00
Closing Stock (A-B)	82.65	95.55	98.55

Source: Tobacco Board.

2.142 From the above table, it may be seen that the comfortable demand and supply position will continue in the year 2007-08 also. The domestic consumption will be slightly lower at 80 million kgs, compared to the consumption of 82 million kgs of 2006-07. Export is expected to increase by about 4 percent during 2007-08 compared to 2006-07. The year is expected to close with a surplus stock of 98.55 million kgs, out of which around 80 million kgs. are the inventory of manufacturers for future usage and the remaining tobacco is committed for exports.

The cost of production of tobacco, soil-region wise, during 2006-07 and the average price realized, are indicated in the following Table :

Table2.39: Cost of Production and Price Realization

(Rs per kg)

Sl. No.	Soil Region	Cost of Production	Actual Average Price Realization
1	Northern Light Soil	43.35	54.13
2	Southern Light Soil	40.96	44.86
3	Black Soil	34.65	44.92
4	Karnataka Light Soil	38.20	55.94

Source: Tobacco Board.

2.143 FAO, in its study, has predicted an increase in consumption of tobacco in the world until the year 2010 due to growth of population and income. However, the rate of increase would be less than that recorded in the past. According to the findings of the study, the smoking in developed countries would continue to decline while the tobacco consumption in developing countries would increase. A major part of the projected increase in demand for tobacco is expected to come from Far East, particularly China, followed by India and Africa.

2.144 The Commission recommends MSP only for F2 and L2 grades of VFC tobacco. The Tobacco Board thereafter fixes the prices for other varieties of tobacco based upon grade differential taking the MSP recommended for basic grades of F2 and L2 VFC tobacco. The MSP for F2 and L2 grades remained at the level of Rs.32/kg and Rs.34 /kg respectively since 2004-05.

2.145 The Tobacco Board, in its written submission to the Commission, has urged increase in the MSPs for the basic grades of F2 and L2 reasonably at least by 25 per cent for 2008-09 so as to narrow down the gap between the

market prices and MSP and to curtail the exploitation of growers by the trade and also to take account of the increase in the per hectare cost of cultivation every year due to increased cost of critical inputs like fertilizers, labour charges and also wood fuel for curing. Considering the fact that low level of MSP may often depress the auction price and thereby price realization by the farmers, the Commission would like to reiterate its earlier recommendation that the Government may examine the relevance of fixing MSP for tobacco and its pricing be left to the Tobacco Board or to the market forces.

2.146 The adverse health implications of consumption of tobacco are well established. Support to tobacco cultivation arises mainly from its livelihood impact. It provides employment to a large number of persons in rural areas. In the case of India, the total employment generated in tobacco sector, right from farm sector to processing, manufacturing and marketing of product is more than 3 million. The Commission is of the view that Government measures at discouraging cultivation of tobacco shall be simultaneously followed by location of alternate viable land use options to the farmers with certain level of land-holding.

III. MOVEMENT OF INPUT PRICES, COST OF PRODUCTION, TERMS OF TRADE AND INTER-CROP PRICE PARITY

Among a host of factors, the cost of production serves as the basis for formulating minimum support price policy. In order to have an assessment of the cost of production of different kharif crops for both the current and ensuing seasons and to have a first hand view of price movement and procurement scenario thereof, the Commission visited the states of Tamil Nadu, Andhra Pradesh, Punjab, Maharashtra and West Bengal. and held meetings with state government officials, farmers' representatives, procurement agencies functioning in the states and other stakeholders to ascertain their views on price policy for the kharif season 2008-09. It was pointed out by a number of farmers present in the discussions that contrary to the usual official statistics of wage rates of farm labourers collected by state agencies, it has gone up many times in the recent years. This was due to the non-availability of adequate farm labourers, caused by their influx to cities in search of better paid jobs as well as implementation of National Rural Employment Guarantee Scheme. This led to severe cost strains on the farmers on account of labour input, as it was claimed by the farmers. Other crucial issues that came up for discussion were elements of risk, loss of production due to natural calamities that are not in general and as a matter of principle accounted for in the cost of production estimates. Therefore, there was a strong opinion voiced by farmers in all the places that the fixation of minimum support price by the government on the recommendations of Commission for Agricultural Costs and Prices (CACP) was unrealistic for the reason that it did not cover adequately the cost of production. Apart from this, it was gathered that the government determined wage rate is considerably lower than that actually demanded by labourers and as a result, standing crop covering thousands of hectares remained unharvested last year. The agricultural labourers find it lucrative to work on schemes like National Rural Employment Guarantee Programme, on construction sites and in urban areas and not in the agriculture sector.

3.2 The projection for cost of production made by CACP came in for severe criticism in view of it being far lower than what it was on the ground. The only viable defense that the Commission has against this criticism is that it depends on the cost of cultivation/production data collected through a scientifically designed sample survey across the country from the selected farmholdings and compiled by the Directorate of Economics and Statistics (DES), Ministry of Agriculture, for cost projections. In regard to the anomalies in the cost of production estimates generated by DES and to make these estimates reflective of the actual movement of cost of production of crops, it is thus required that a review of the Comprehensive Scheme under which cost data are collected is a pressing necessity in so far as price policy formulation for several crops hinges on this. With this limitation in mind, the Commission has no other alternative but to use estimates of cost of cultivation/production generated state-wise for each crop. However, while making the cost projections for the kharif crop season 2008-09, the Commission in recognition of the feedback it has garnered from its various meetings, studied the movement of input cost as well as the overall cost that would show escalation if the existing rental structure in the field is taken cognizance of. In keeping with this, an alternative cost projection has been undertaken on the premise of farm rent as 50 percent of gross value of output as some research results show, where the cropping is done on sharing basis.

3.3 Apart from paid out operational costs which include the items of input costs that are actually incurred by the farmers for each of the crops grown by them, the imputed value of family labour, rental value of owned land, interest on fixed capital etc. are also considered. The Commission has received detailed information profiles from state governments that contain among many other things data on prices of agricultural inputs and their respective cost of cultivation/production. Besides, the updated price indices in respect of some agricultural inputs have been obtained upto December, 2007 from the Office of the Economic Adviser, Ministry of Commerce & Industry. Month-wise average

daily wage rates for agricultural labour have been obtained from Labour Bureau to assess trends of change in wage rates.

3.4 The Commission submitted its report on Price Policy for Kharif Crops for 2007-08 season on March 13, 2007. During the period January, 2007 to December, 2007, the prices of all inputs as measured by Wholesale Price Index (WPI) have registered an increase excepting for electricity for irrigation, diesel oil and fodder. The prices of fertilizers in terms of WPI have recorded a marginal increase by one percent during this period. This shows the extent to which fertilizer as an essential input in agricultural production has brought about less hardships for the farmers. Other inputs that have registered an increase are cattlefeed (2.42 percent), non-electrical machinery (1.98 percent), and tractors (1.59 percent). The prices of tractors that constitute one of the essential inputs of machine labour and cattle-feed a component of bullock labour, have increased by about 2 percent in terms of WPI, as a result of which it is clear that the cost burden on the farmers have gone up on these accounts. Moreover, the prices of pesticides, lubricants were observed to have increased by 0.38 percent and 0.04 percent, respectively.

3.5 The statutory minimum wages for agricultural labourers have been revised upward in the states of Haryana, Madhya Pradesh, Punjab and Orissa. As per data obtained from the Labour Bureau, the actual average agricultural wage rates, between the kharif seasons (April-September) of 2006 and 2007, are observed to have increased by 1 to 9 per cent in Bihar, Gujarat, Haryana, Karnataka, Madhya Pradesh, Rajasthan, Uttar Pradesh and West Bengal, except in Kerala, where the wages have almost remained at the same level. However in the states of Andhra Pradesh, Assam, Maharashtra, Punjab and Tamil Nadu, the increase in the wages is higher between 13 to 18 per cent during the same period. (Tables 3.1 & 3.2)

3.6 In the light of the contention that cost of production being projected by the Commission does not reflect the actual cost incurred by the farmers growing a number of crops, an attempt has been made to have a parallel cost projection by taking into account the value of rent as 50 percent of gross value of output separately for each crop for the kharif crop season of 2008-09. Before going into the details of cost projections that follow, a comparative scenario is presented below. It shows the cost projection usually undertaken by CACP vis-à-vis that based on value of rent as 50 percent of gross value of output.

Table 3.1: Comparative scenario of cost projections (Rs/qtl)

Crop	Usual projections with rental value as reported under CS	Projections assuming rental value as 50% of gross product	Percentage change
Paddy	618.76	759.77	22.79
Cotton	2087.72	2731.50	30.84
Jowar	764.63	944.51	23.53
Bajra	642.93	811.70	26.25
Maize	679.64	805.78	18.56
Ragi	832.17	975.73	17.25
Tur(arhar)	1609.08	2024.52	25.82
Moong	2293.13	2746.16	19.76
Urad	1994.33	2489.87	24.85
Groundnut	1659.10	2123.90	28.02
Soyabean	1180.88	1518.04	28.55
Sunflower	2010.93	2430.79	20.88
Sesamum	2497.78	3314.21	32.69
Nigerseed	2188.01	2657.35	21.45
Tobacco	4134.35	5014.40	21.29

3.7 Assuming the value of rent as 50 percent of gross product, the projected costs of production of crops detailed in the above table record relative increase over their usual projections by a range fluctuating between the minimum of 17.25

per cent for ragi and maximum of 32.69 per cent for sesamum. The substantial increase in cost of production projected in consonance with the principle of rent as 50 percent of gross product is observed in the crops of paddy, cotton, jowar, tur (arhar), urad, groundnut, soyabean, sesamum, nigerseed and tobacco. The order of increase swings between 21 and 33 percent.

Estimates of Cost of Cultivation and Projected Costs for 2008-09 Season

Since the submission of Commission's last report on price policy for kharif crops for 2007-08, the Directorate of Economics and Statistics have provided the estimates of cost of cultivation/production for the year 2005-06.

Paddy

3.8 The DES has provided the estimates of cost of cultivation/production of paddy for the year 2005-06 in respect of Andhra Pradesh, Assam, Bihar, Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Tamil Nadu, Uttar Pradesh, Uttarakhand and West Bengal. The details of the latest available cost estimates of paddy and also those pertaining to the preceding year are presented in Table 3(A). There has been upward movement in the C2 cost of production per quintal in majority of the paddy growing states in the year 2005-06 compared to that in the preceding year. However, it has declined in the states of Assam, Bihar, Chhattisgarh, Haryana, Karnataka, Kerala, Madhya Pradesh and Uttar Pradesh due to proportionate increase in their levels of yield. The elaborate details of cost of cultivation/production of paddy pertaining to 2005-06 and for the preceding year are given in tables 3.3 and 3.4.

3.9 The Commission has arrived at the likely levels of cost of production of paddy in different growing states for the ensuing season of 2008-09 based on the cost of production/cultivation data available for the latest year 2005-06. In order to make the projections consistent and realistic, each of the latest three years

data pertaining to each state, provided by the DES, wherever available, is projected for each state and their averages are taken. For projection, a state-specific Variable Input Price Index for each crop has been constructed to capture the movements of input prices between the base year and the year of projection (2008-09). Finally the all-India weighted average cost is computed. (Table 3.5)

3.10 As per the above methodology, the projected per quintal paid-out cost of production of paddy plus imputed cost of family labour (i.e. cost A_2+FL) for 2008-09 works out to an average of Rs.422.09 for Andhra Pradesh, Rs.496.55 for Assam, Rs. 407.14 for Bihar, Rs.403.77 for Chhattisgarh, Rs.513.82 for Haryana, Rs. 610.88 for Jharkhand, Rs. 497.10 for Karnataka, Rs.643.11 for Kerala, Rs.570.68 for Madhya Pradesh, Rs.428.46 for Orissa, Rs.349.07 for Punjab, Rs.559.84 for Tamil Nadu, Rs.440.69 for Uttar Pradesh, Rs.464.33 for Uttarakhand and Rs.494.71 for West Bengal. As against this, the projected C2 cost of production stands at Rs.606.01 for Andhra Pradesh, Rs.637.39 for Assam, Rs.561.48 for Bihar, Rs.583.51 for Chhattisgarh, Rs. 749.58 for Haryana, Rs.776.25 for Jharkhand, Rs.645.71 for Karnataka, Rs.785.16 for Kerala, Rs.761.57 for Madhya Pradesh, Rs.570.18 for Orissa, Rs.516.70 for Punjab, Rs.689.18 for Tamil Nadu, Rs. 606.38 for Uttar Pradesh, Rs.606.60 for Uttarakhand and Rs.646.95 for West Bengal. The weighted average cost of production of paddy for all these states works out to Rs.456 on A_2+FL basis and Rs.619 on C_2 basis. [Table 3(G)]

3.11 It is observed from the above that the average C_2 cost of production of paddy is lowest (Rs. 517) in Punjab followed by Bihar (Rs.561). On the other hand, the projected costs of production of paddy are higher as compared to MSP for 2007-08 in Haryana, Jharkhand, Kerala and Madhya Pradesh. While Jharkhand suffers from extremely low productivity, Kerala's high cost is explained mainly by the higher human labour cost. In the case of Haryana, the total cost of cultivation of paddy per hectare at Rs.34691.35 is close to that of its neighbour,

Punjab. However, Haryana produces finer quality of paddy of basmati variety in a large area which results in lower yield levels averaging around 46 quintals per hectare as against 66 quintals obtained in Punjab for common variety.

3.12 The Commission also receives cost of cultivation estimates from various state governments. These are examined in detail in the Commission and compared with the corresponding CS data and also with the projected costs of production of various crops for the ensuing kharif season. Although these estimates are not strictly comparable with the CS estimates because of certain conceptual and methodological differences, the comparison exercise serves useful purpose of cross-validation of the cost data. In some cases these state estimates pertain to more recent years and information therein is used for the purpose of projections.

3.13 From Table 3(H) it is observed that the costs of production of paddy as furnished in state replies for Andhra Pradesh, Bihar, Chhattisgarh, Haryana, Madhya Pradesh and Uttar Pradesh at Rs.645, Rs.946, Rs.756, Rs.746, Rs.746 and Rs.648 per quintal respectively for 2005-06 are higher than those given under CS at Rs.541, Rs.497, Rs.508, Rs.618, Rs.690 and Rs.559 per quintal respectively, mainly due to the consideration of higher human labour cost by the state of Bihar and lower yield levels for Andhra Pradesh and Uttar Pradesh. In the case of Uttarakhand, however, the unit cost estimated by the state at Rs.503 per quintal is much lower than the CS estimate. The estimates provided by the states of Andhra Pradesh, Bihar, Haryana, Madhya Pradesh and Uttar Pradesh for the year 2006-07 are Rs.660, Rs.774, Rs.756, Rs.781 and Rs.689 per quintal respectively. The states of Bihar, Haryana and Madhya Pradesh have provided the estimates for the season 2007-08 also. However, no comparison is possible due to non- availability of CS data for these years.

3.14 The projected cost of production of paddy for the year 2008-09 has been received from the states of Bihar, Haryana, Punjab, Uttarakhand, Orissa,

Karnataka and Maharashtra. The cost projection for 2008-09 from Andhra Pradesh has not been received. However, the estimates received from the state for the previous year (2007-08) has been projected for 2008-09 season using the anticipated trends of cost inputs used by CACP for making its own projections for the state. The projected unit cost of production for Andhra Pradesh arrives at Rs.946 per quintal, which is higher as compared to CACP's usual projection for 2008-09 season. This may be due to the difference between yield levels used for two sets of projections. It is observed that the cost of production of paddy projected by the state of Punjab at Rs. 1036 per quintal is inclusive of the weather risk, management charges, etc. After excluding these, the projection works out to Rs.822 per quintal for 2008-09, which is higher than the Commission's projection at Rs.517 per quintal. This difference is mainly attributed to the much higher rental value of land and lower yield level considered by the state. Bihar, Haryana, Maharashtra, Orissa and Karnataka have provided the projected C_2 cost of production at Rs.1278, Rs.1088, Rs.809, Rs.850 and Rs.1076 per quintal respectively. These are inclusive of managerial cost, profit margin to the farmers and also transport charges, etc. After making necessary adjustments to the projected costs to make them comparable with the Commission's concepts and methodologies, the adjusted projected cost for Bihar, Haryana, Punjab, Orissa and Karnataka is higher than the Commission's projection at Rs.561, Rs.750, Rs.517, Rs.570 and Rs.646 per quintal respectively for 2008-09. In the state of Orissa a lower yield has been considered by the state, whereas in case of Bihar and Punjab the reasons for the same are consideration of higher labour charges and rental value of land respectively.

[Table 3(I)]

Coarse Cereals

3.15 Jowar, bajra, maize and ragi are the major kharif coarse cereals for which cost estimates are available under CS. For jowar, estimates of cost of cultivation/production are available for 2005-06 in respect of Andhra Pradesh, Karnataka, Madhya Pradesh, Maharashtara, Rajasthan and Tamil Nadu. It may

be observed from Table 3(C) that between 2004-05 and 2005-06, the C_2 cost of cultivation for jowar per hectare is estimated to have increased in all the above jowar growing states except Tamil Nadu, where it has declined by about 26 percent. The productivity level reported to have declined significantly in Tamil Nadu from 8.93 quintal per hectare to 3.01 quintal per hectare. The cost estimates for bajra have been received from the states of Gujarat, Haryana, Maharashtra, Karnataka, Rajasthan and Uttar Pradesh. For bajra, the C_2 cost of production is estimated to have increased in all the states. It may be noted that the yield levels in the states of Rajasthan and Uttar Pradesh reported to have declined substantially, whereas the same has registered a marginal decline in Haryana. The states of Rajasthan and Uttar Pradesh have registered a significant decline of 33 and 18 percent respectively as against Haryana, where it has declined by 2 percent. In case of maize, cost estimates have become available for Andhra Pradesh, Bihar, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Rajasthan, Tamil Nadu, Uttar Pradesh and Uttarakhand. The C_2 cost of cultivation has gone up in most of the above mentioned states except Chhattisgarh and Uttar Pradesh. The cost estimates for ragi are available for the year 2005-06 for Karnataka, Maharashtra and Tamil Nadu. It is observed that C_2 cost of production is reported to have increased in Karnataka, whereas it has declined by 4 percent in Tamil Nadu. The productivity level in both the states has shown an improvement over the preceding year.

3.16 The projected cost of production (A_2+FL) for jowar for 2008-09 in respect of Andhra Pradesh, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Tamil Nadu are Rs.694, Rs.621, Rs. 646, Rs. 553, Rs.539 and Rs.567 per quintal respectively while the projected cost of production per quintal on C_2 basis for these states are Rs.956, Rs.799, Rs.827, Rs. 713, Rs. 770 and Rs. 793 respectively. The weighted average A_2+FL and C_2 cost of production for jowar works out to Rs.586 and Rs.765 per quintal respectively. The projected cost of production for bajra for the year 2008-09 for the states of Gujarat, Haryana, Maharashtra, Rajasthan and Uttar Pradesh on A_2+FL basis works out to Rs. 525,

Rs.564, Rs.632, Rs.413 and Rs.384 per quintal respectively, while the C_2 cost of production per quintal for these states are Rs. 636, Rs. 772, Rs. 778, Rs.568 and Rs.632 respectively. The weighted average A_2+FL and C_2 costs of production of bajra for the year 2008-09 work out to Rs.474 and Rs.643 per quintal respectively. The A_2+FL projected cost of production of maize for the states of Andhra Pradesh, Bihar, Chhattisgarh, Himachal Pradesh, Jharkhand, Madhya Pradesh, Rajasthan, Uttar Pradesh and Uttarakhand are Rs. 451, Rs. 301, Rs. 582, Rs. 475, Rs. 589, Rs. 619, Rs. 686, Rs. 633 and Rs. 710 per quintal respectively, while the projected C_2 cost of production for these states works out to Rs. 637, Rs. 422, Rs. 748, Rs. 653, Rs. 804, Rs. 764, Rs. 842, Rs.825 and Rs. 948 per quintal respectively. The weighted average A_2+FL and C_2 costs of production of maize on the basis of these costs work out to Rs. 513 and Rs.680 per quintal respectively. For ragi, projection has been carried out for Karnataka and Tamil Nadu for 2008-09. The projected A_2+FL cost of production for ragi for Karnataka works out to Rs.726 per quintal as against Rs. 663 per quintal for Tamil Nadu. The projected C_2 costs of production for 2008-09 for these states are at Rs. 824 and Rs.911 per quintal respectively. The weighted average cost of production of ragi works out to Rs.720 on A_2+ FL basis and Rs. 832 on C_2 basis respectively. [Table 3(G)]

3.17 The cost estimates for jowar have been made available by the states of Andhra Pradesh, Madhya Pradesh and Uttar Pradesh for the year 2005-06. The estimate provided by Madhya Pradesh for 2005-06 at Rs.650 per quintal is lower than the corresponding CS estimate. The cost estimates for jowar for the year 2005-06 at Rs.800 per quintal provided by Andhra Pradesh is higher than the CS estimates due to the lower level of productivity considered by the state. The cost estimates for jowar for 2006-07 and 2007-08 have been furnished by some of these states, but the same may not be comparable due to non-availability of CS estimates. As regards bajra, the states of Andhra Pradesh and Uttar Pradesh have provided cost estimates for the years 2005-06 and 2006-07, whereas the state of Haryana has provided estimates only for the years 2005-06, 2006-07 and

2007-08. The cost per quintal in the case of Uttar Pradesh is on the higher side due to the consideration of lower yield level by the state. CACP's projection for Haryana is higher than the state government's projections. For maize, cost estimates have been provided for the years 2005-06, 2006-07 and 2007-08 by the states of Bihar, Haryana and Madhya Pradesh as against Andhra Pradesh and Uttar Pradesh for which the same has been received for 2005-06 and 2006-07 only. The estimate of cost provided by Uttar Pradesh at Rs.638 per quintal is higher than the CS estimate owing to low yield considered by the state. The cost projections for maize for the year 2008-09 have been received from the states of Andhra Pradesh, Bihar, Haryana, Karnataka, Maharashtra, Orissa and Tamil Nadu. The projections made by the states of Andhra Pradesh and Bihar is on the higher side because of lower yield taken into account for making projections by these states. The cost estimates for ragi have been furnished by Andhra Pradesh and Uttarakhand only. [Tables 3(H) & 3(I)]

Pulses

3.18 The latest available estimates of cost of cultivation/production for major kharif pulses of tur (arhar), moong and urad are presented in Table 3 (D). It may be observed that the cost of production per quintal for tur is observed to have increased to a great extent in 2005-06 in Gujarat, Madhya Pradesh, Orissa and Uttar Pradesh over the preceding year. The projected per quintal cost of production (A_2+FL) of tur for the year 2008-09 averaged at Rs.973 for Andhra Pradesh, Rs.1257 for Gujarat, Rs. 1335 for Karanataka, Rs.967 for Madhya Pradesh, Rs.1423 for Orissa and Rs.740 for Uttar Pradesh. The corresponding projected C_2 cost figures are Rs.1562, Rs.1609, Rs. 1795, Rs.1487, Rs.1938 and Rs.1454 per quintal respectively. The weighted average cost for tur for 2008-09 is projected at Rs.1074 per quintal and Rs.1609 per quintal on A_2+FL and C_2 basis respectively. As regards moong cost A_2+FL is projected at Rs.1375, Rs.2126, Rs. 1686 and Rs.1586 per quintal for the states of Andhra Pradesh, Maharashtra, Orissa and Rajasthan respectively and the corresponding C_2 cost at Rs.2073, Rs. 2577, Rs. 2354 and Rs.2136 per quintal respectively. The

weighted average cost for moong for the year 2008-09 works out to Rs.1731 and Rs.2293 per quintal respectively on A_2+FL and C_2 basis. The A_2+FL cost for urad for the states of Andhra Pradesh, Chhattisgarh, Madhya Pradesh, Maharashtra, Orissa, Rajasthan, Tamil Nadu and Uttar Pradesh have been projected at Rs. 885, Rs.1169, Rs.2109, Rs.2006, Rs.1338, Rs.1758, Rs.1581 and Rs.1066 per quintal respectively. The corresponding C_2 costs of production for these states works out to Rs.1462, Rs.1644, Rs.2648, Rs. 2439, Rs.1899, Rs.2315, Rs.2422 and Rs.1615 per quintal respectively, with all-India weighted average A_2+FL and C_2 cost for urad for the year 2008-09 being placed at Rs.1438 and Rs.1994 per quintal respectively. [Table 3(G)]

3.19 For all the kharif pulses, the estimates of costs have been provided by the states of Andhra Pradesh, Chhattisgrah, Madhya Pradesh and Uttar Pradesh. The state cost estimates in case of pulses are invariably higher than the CS estimates except in the case of tur and urad in Uttar Pradesh and moong in Andhra Pradesh for the year 2005-06. The projections for kharif pulses have been received from the states of Karnataka, Maharashtra and Orissa. The projections as provided by the states for kharif pulses are higher than the corresponding projections made by the Commission for the crop except for Orissa in case of tur and moong, and Maharashtra for moong and urad.

[Tables 3(H) & (I)]

Oilseeds

3.20 The latest estimates of cost of cultivation/production for groundnut for the year 2005-06 have become available in respect of Andhra Pradesh, Gujarat, Karnataka, Maharashtra and Tamil Nadu. (Table-3(E)). The C_2 cost of cultivation per hectare for groundnut for 2005-06 is reported to have gone up over the previous year in the states of Andhra Pradesh, Gujarat and it has shown a decline in the states of Karnataka, Maharashtra and Tamil Nadu. The cost of production has registered a decline in Gujarat, Maharashtra and Tamil Nadu. In the case of soyabean, cost estimates have become available for the states of

Madhya Pradesh, Maharashtra and Rajasthan for the year 2005-06. The yield levels in these states are more or less stagnant. The cost estimates for sunflower are available for Andhra Pradesh, Maharashtra and Karnataka. The levels of yield in Andhra Pradesh has gone up by about one quintal per hectare from 6.81 quintals per hectare in 2004-05 to 7.08 quintals per hectare in 2005-06, while the same is reported to have declined at same rate in Maharashtra. The cost estimates for sesamum for the year 2005-06 have been made available for the states of Gujarat, Madhya Pradesh, Orissa, Rajasthan, Tamil Nadu and West Bengal. The yield levels have shown a phenomenal increase for the states of Gujarat (45.60 percent) and Orissa (49.56 percent). The C2 cost of production per quintal for sesamum has recorded a considerable increase in the states of Madhya Pradesh and Rajasthan, with decline in cost figuring in the states of Orissa (22.84 percent) and Gujarat (16.81 percent). The cost estimates for nigerseed are available for Madhya Pradesh and Orissa for the year 2005-06 and the yield level has declined from 2.96 quintal per hectare to 2.60 quintal per hectare in Orissa.

3.21 The estimated costs of kharif oilseeds for the latest three years ending 2005-06 have been projected for the ensuing crop season of 2008-09 and their weighted averages taken. Accordingly, the projected A_2+FL per quintal cost of production for groundnut averages at Rs.1439 per quintal for Andhra Pradesh, Rs.987 for Gujarat, Rs.1599 for Karnataka, Rs.1719 for Maharashtra and Rs. 1200 per quintal for Tamil Nadu. The C_2 cost of production for these states work out to Rs.1997, Rs.1317, Rs.2023, Rs. 2143 and Rs.1575 per quintal respectively. The weighted average cost for groundnut works out to Rs.1252 per quintal on A_2+FL basis and Rs.1659 per quintal on C_2 basis. For soyabean, the projected A_2+FL cost works out to Rs.760, Rs. 1084 and Rs.763 per quintal respectively for the states of Madhya Pradesh, Maharashtra and Rajasthan while the C_2 cost works out to Rs.1114, Rs. 1366 and Rs.990 per quintal respectively. The weighted average cost for soyabean works out to Rs.864 and Rs.1181 per quintal respectively on cost A_2+FL and C_2 basis. The costs for sunflower for

2008-09 for the states of Andhra Pradesh, Karnataka and Maharashtra are projected at Rs.1355, Rs.1735 and Rs. 1279 per quintal on A_2+FL basis and Rs. 1884, Rs. 2191 and Rs. 1615 per quintal on C_2 basis. The weighted average unit cost of production for sunflower on C2 basis is put at Rs. 2011 per quintal for 2008-09 season. For sesamum, the average projected A_2+FL costs are Rs.1882, Rs.1491, Rs.2169, Rs.1906 and Rs.1979 per quintal and the corresponding C_2 costs work out to Rs.2413, Rs. 2145, Rs.2994, Rs.2700 and Rs.2634 per quintal for the states for Gujarat, Madhya Pradesh, Orissa, Rajasthan and Tamil Nadu respectively with the weighted average A_2+FL and C_2 cost at Rs.1835 and Rs. 2498 per quintal respectively. The C_2 cost of production of nigerseed in respect of Orissa has been projected to an average of Rs.2188 per quintal. [Table 3(G)]

3.22 The cost estimates for the kharif oilseeds have been provided by the states of Andhra Pradesh, Madhya Pradesh, Maharashtra and Uttar Pradesh. The state estimates for groundnut in respect of Andhra Pradesh are higher than the corresponding CS estimate for the year 2005-06. In the case of soyabean, the cost estimates received from Madhya Pradesh is also on the higher side. This may be attributed to lower yield considered by the states. The estimates provided by the state of Madhya Pradesh for sesamum is on the lower side, whereas the same received from it for nigerseed is on higher side as compared to the corresponding CS estimates for 2005-06. Cost projections for the year 2008-09 in respect of oilseeds have been received from the states of Andhra Pradesh, Karnataka, Maharashtra and Orissa. These are invariably lower than CACP's projections for oilseeds except for groundnut in case of Karnataka.

[Tables 3(H) & 3(I)]

Cotton (Kapas)

3.23 For cotton, which is the only fibre crop grown in kharif, the estimates of cost of cultivation/production for 2005-06 have been made available for the states of Andhra Pradesh, Gujarat, Haryana, Madhya Pradesh, Maharashtra, Punjab, Rajasthan and Tamil Nadu. The data presented in Table 3(B) show that

the C_2 cost of cultivation per hectare is estimated to have decreased over the preceding year in the states of Andhra Pradesh, Haryana, Maharashtra, Punjab and Rajasthan as compared to Madhya Pradesh and Tamil Nadu where the same is estimated to have moved upward. The yield has declined to the extent of 6 quintal per hectare in Andhra Pradesh against two-fold increase in Madhya Pradesh. However, the unit C_2 cost of production of cotton has increased in all the states except Madhya Pradesh and Rajasthan. The unit costs of production for Rajasthan and Madhya Pradesh for 2005-06 have decreased by 3 and 23 percent respectively. This may be attributed to an increase in yield levels. The unit cost of production for Punjab remained almost at the same level.

(Tables 3.6, 3.7& 3.8)

3.24 Following the same methodology, the cost A_2+FL of cotton per quintal is projected for 2008-09 to an average of Rs.1526 for Andhra Pradesh, Rs. 1376 for Gujarat, Rs.1464 for Haryana, Rs.1997 for Madhya Pradesh, Rs. 1920 for Maharashtra, Rs.1454 for Punjab, Rs.1142 for Rajasthan and Rs.2174 for Tamil Nadu. The corresponding cost C_2 per quintal is projected at Rs.2225, Rs 1812, Rs.2128, Rs.2748, Rs. 2449, Rs.2048, Rs.1648 and Rs.2884 per quintal respectively in these states. The weighted average cost of production of cotton for 2008-09 works out to Rs.1541 per quintal and Rs.2088 per quintal on cost A_2+FL and C_2 basis respectively. [Table 3(G)]

3.25 In addition, the estimates of cost of production of cotton for the year 2005-06, 2006-07 and 2007-08 have been provided by the states of Haryana and Madhya Pradesh, whereas the same have been received for Andhra Pradesh for 2007-08 only. The estimated cost of production is lower in Haryana, whereas it is on the higher side in Madhya Pradesh as compared to corresponding CS estimates. The states of Haryana and Punjab have given the projected costs of cotton for the year 2008-09. After making necessary adjustments, the projections made by these states invariably are lower than the Commission's projection for the crop except Punjab. [Tables 3(H) & 3(I)]

VFC Tobacco

3.26 The latest estimates of cost of cultivation/production for VFC tobacco have been made available by the DES which pertain to Andhra Pradesh for the year 2005-06. Karnataka, the only other important VFC tobacco producing state, is not covered under the CS. The data presented in Table 3(F) show that both the cost of cultivation and unit cost of production between 2004-05 and 2005-06 has increased. The cost of production of tobacco in respect of Andhra Pradesh has been projected to an average of Rs.3313 and Rs. 4134 per quintal on cost A_2+FL and C_2 basis, respectively. [Table 3(G)]

Terms of Trade

3.27 The Commission in its earlier reports mentioned about the deteriorating agricultural terms of trade in recent years. The index of terms of trade (ITT) with base TE 1990-91 (TE 1990-91=100) deteriorated from 106.6 in 1994-95 to 100.9 in 2000-01. It marginally recovered in the years 2001-02 and 2002-03, but deteriorated again in 2003-04 and 2004-05. However, during 2005-06, there was a marginal improvement in the ITT over the previous year, while the index of input price parity dropped from 105.3 in 2004-05 to 103.2 in 2005-06.

(Appendix II)

Inter-Crop Price Parity

3.28 Minimum Support Price Policy is one of the instruments to maintain inter-crop price parities in the sense that it helps in judicious allocation of area among different crops by farmers for the balanced development of agriculture in the country. Therefore, CACP takes care in its price policy formulation to preserve inter-crop price parities. Towards this end, effort is made to see that the differences in MSPs across different crops have the same differences in their respective costs/returns. During the past one decade the agricultural prices of various commodities have registered movement at different rhythms. The wholesale price index (WPI) with base year 1993-94 for rice increased by 7.1

percent during month of December, 2007-08 to 193.9 from 181.1 during month of December, 2006-07. The WPI of coarse cereals like bajra, maize, ragi and barley did not show any considerable increase compared to that of rice. In the case of jowar, the WPI has increased by 14 percent, which is twice that of rice. However, on average rice and coarse cereals' price movements in terms of WPI more or less moved in tandem over the period of 2007-08. The WPI for jowar has recorded substantial jump during the period 2007-08 and this was due to the decline in area, production and yield of these crops at all India level during the same period. The WPI of kharif pulses like tur, moong, urad and all the kharif oilseeds moved up at higher rates than that of rice.

3.29 As regards the level of minimum support prices fixed, there was relatively higher increase in commodities like moong and urad in recent years, in order to enhance the production and productivity of these crops. Now that the area coverage under paddy is to be increased for boosting the level of production or the yield level has to be enhanced for stepping up the production levels, a slight tilt in the inter-crop price parity in favour of paddy may be in order especially because the supply response to price change in rice is higher as compared to that of pulses. Given the fixed size of net area sown in the country that amounts to about 140 million hectares, it is economically a viable proposition that efforts by way of greater research and extension, and price support are to be initiated for increasing productivity of paddy in rainfed regions.

Table 3(A): Cost Estimates for Paddy

Paddy **Rupees**

States	Year	A2+FL /Hect	C2 /Hect	A2+FL /Qtl.	C2 /Qtl.	C3 /Qtl.	Yield (Qtl.)/Hect..	Implicit Price(Qtl.)	MSP /Qtl.
Andhra Pradesh	2005-06	18787.23	29256.97	347.82	540.96	599.24	50.21	594.44	570.00
	2004-05	18612.39	29056.11	322.97	503.73	555.25	53.65	590.99	560(C)
Assam	2005-06	11176.62	15079.18	414.68	559.92	615.91	25.17	505.28	570.00
	2004-05	10937.62	14364.28	462.66	607.65	668.42	22.19	492.68	560(C)
Bihar	2005-06	10969.84	15181.55	359.30	497.44	547.18	25.78	478.32	570.00
	2004-05	10118.01	14640.07	381.00	551.55	606.71	22.82	503.68	560(C)
Chattisgarh	2005-06	9831.59	15304.30	326.35	508.21	564.85	27.27	582.02	570.00
	2004-05	9295.87	14350.98	335.42	518.36	581.63	24.26	585.72	560(C)
Gujarat	2005-06	14098.04	18854.53	357.11	478.35	530.21	33.20	598.13	570.00
Haryana	2005-06	18706.77	30543.61	378.76	618.45	680.30	48.72	720.43	570.00
	2004-05	21540.01	32038.25	473.76	704.69	775.16	44.70	808.13	560(C)
Himachal Pradesh	2005-06	10240.81	15463.57	448.42	684.64	753.10	16.19	737.15	570.00
Jharkhand	2005-06	9723.39	12833.08	570.44	751.95	837.30	14.41	474.26	570.00
	2004-05	10143.64	13535.32	482.52	643.97	715.23	18.38	482.31	560(C)
Karnataka	2005-06	20180.02	28350.97	376.17	518.54	572.31	49.11	656.71	570.00
	2004-05	23220.97	30555.70	436.97	569.46	626.41	46.94	585.29	560(C)
Kerala	2005-06	22027.95	27866.20	537.50	671.66	738.83	35.37	674.06	570.00
	2004-05	21222.04	26644.52	567.31	707.13	777.84	31.40	681.27	560(C)
Madhya Pradesh	2005-06	8884.01	12685.78	485.10	689.82	769.80	16.03	640.85	570.00
	2004-05	8724.89	11976.48	581.85	784.08	882.28	12.91	693.50	560(C)
Maharashtra	2005-06	20355.07	25464.48	608.41	762.06	838.27	29.06	717.15	570.00
Orissa	2005-06	13252.67	18781.20	373.15	528.90	584.19	30.24	481.35	570.00
	2004-05	13100.24	18193.62	355.52	493.69	544.47	30.93	473.91	560(C)
Punjab	2005-06	17247.31	30007.47	280.16	487.28	487.28	61.15	607.58	570.00
	2004-05	21004.06	31770.38	296.60	448.62	493.48	70.53	598.93	560(C)
Tamil Nadu	2005-06	23305.15	32792.95	491.65	690.96	760.06	42.92	600.82	570.00
	2004-05	22104.95	30103.76	450.72	612.13	676.89	43.64	565.82	560(C)
Uttar Pradesh	2005-06	13866.36	20557.42	377.06	559.19	624.22	34.37	564.03	570.00
	2004-05	13444.03	19520.32	394.23	570.70	696.88	31.95	541.84	560(C)
Uttarakhand	2005-06	14516.05	21230.29	378.44	552.97	610.42	34.95	588.06	570.00
	2004-05	14257.74	18552.77	399.77	511.38	562.52	31.38	556.72	560(C)
West Bengal	2005-06	18180.39	25162.96	418.68	581.02	639.12	37.18	538.54	570.00
	2004-05	17773.01	24403.45	421.72	578.11	640.74	35.69	534.00	560(C)

Table 3(B): Cost Estimates for Cotton(Kapas)

Cotton **Rupees**

States	Year	A2+FL /Hect	C2 /Hect	A2+FL /Qtl.	C2 /Qtl.	C3 /Qtl.	Yield (Qtl.)/Hect..	Implicit Price(Qtl.)	MSP /Qtl.
Andhra Pradesh	2005-06	19075.09	27625.34	1537.75	2227.20	2519.76	12.40	1960.52	1980(H4)
	2004-05	21183.39	32735.15	1171.12	1810.16	1994.85	18.05	1859.73	1960(H4)
Gujarat	2005-06	22852.70	31437.07	1159.73	1594.55	1754.01	19.33	2257.78	1980(H4)
	2004-05	17570.35	23586.30	1119.18	1501.24	1651.36	15.45	1949.25	1960(H4)
Haryana	2005-06	17708.31	26738.08	1433.91	2166.09	2382.70	11.90	1917.19	1980(H4)
	2004-05	17571.13	27288.54	952.26	1478.86	1626.75	18.04	1825.01	1960(H4)
Madhya Pradesh	2005-06	20620.42	33780.98	1193.97	1959.11	2223.83	16.32	2495.05	1980(H4)
	2004-05	16289.74	20714.67	2012.79	2545.57	2800.13	7.56	1662.60	1960(H4)
Maharashtra	2005-06	16017.87	20793.82	1646.42	2137.15	2365.13	9.33	1900.55	1980(H4)
	2004-05	16225.56	21179.58	1619.47	2112.60	2360.24	9.72	1919.29	1960(H4)
Punjab	2005-06	20209.59	33849.46	959.12	1612.26	1773.49	20.37	1896.14	1980(H4)
	2004-05	23646.01	34070.90	1112.38	1600.74	1760.81	20.75	1924.96	1960(H4)
Rajasthan	2005-06	11591.87	17594.12	854.86	1295.69	1425.26	13.06	1862.03	1980(H4)
	2004-05	11380.07	17686.72	860.71	1335.65	1529.53	12.96	1940.06	1960(H4)
Tamil Nadu	2005-06	20530.55	28815.10	1929.64	2708.65	2989.63	10.55	2111.75	1980(H4)
	2004-05	20595.02	27559.95	1701.59	2274.28	2501.71	11.95	1747.96	1960(H4)

Table 3(C): Cost Estimates for Coarse Cereals

Jowar **Rupees**

States	Year	A2+FL /Hect	C2 /Hect	A2+FL /Qtl.	C2 /Qtl.	C3 /Qtl.	Yield (Qtl.)/Hect..	Implicit Price(Qtl.)	MSP /Qtl.
Andhra Pradesh	2005-06	8581.98	12971.99	491.34	746.64	823.04	14.72	670.67	525
	2004-05	8178.30	11636.66	496.63	713.39	784.73	14.21	596.74	515
Karnataka	2005-06	5195.64	7135.56	561.54	770.26	881.26	7.66	656.94	525
	2004-05	4336.01	6078.49	488.80	683.71	836.80	7.27	679.27	515
Madhya Pradesh	2005-06	5952.23	8159.33	548.97	757.02	835.54	8.52	573.27	525
	2004-05	5768.01	7848.16	496.81	674.84	760.91	9.10	591.51	515
Maharashtra	2005-06	11364.27	14846.56	518.06	676.07	743.68	13.90	576.77	525
	2004-05	7533.54	10306.06	447.87	613.62	674.98	10.44	663.61	515
Rajasthan	2005-06	5889.04	8549.13	487.56	683.50	751.85	4.14	718.00	525
	2004-05	4953.32	7287.81	386.19	524.36	582.61	7.14	632.24	515
Tamil Nadu	2005-06	4945.78	8222.52	810.76	1126.41	1239.05	3.01	798.50	525
	2004-05	7435.80	11157.44	500.96	735.30	811.97	8.93	667.23	515

Table 3(C): Cost Estimates for Coarse Cereals (Contd)

States	Year	A2+FL /Hect	C2 /Hect	A2+FL /Qtl.	C2 /Qtl.	C3 /Qtl.	Yield (Qtl.)/Hect..	Implicit Price(Qtl.)	MSP /Qtl.
Bajra									
Gujarat	2005-06	10885.00	14010.83	448.45	579.99	637.99	17.57	638.59	525
	2004-05	9852.60	12305.52	455.67	558.48	614.33	16.17	611.04	515
Haryana	2005-06	8047.92	11462.76	554.94	782.21	860.43	10.61	564.28	525
	2004-05	6414.81	9325.70	466.10	675.02	742.52	10.88	530.37	515
Karnataka	2005-06	4380.74	5657.86	546.85	715.31	903.52	6.02	466.11	525
Maharashtra	2005-06	9735.65	12966.62	512.78	681.82	751.21	14.70	581.26	525
	2004-05	8629.19	10859.95	503.61	632.69	695.96	14.08	568.62	515
Rajasthan	2005-06	4701.96	6902.64	401.23	596.07	659.03	5.92	603.90	525
	2004-05	4921.54	7166.10	328.39	478.84	526.72	8.88	540.58	515
Uttar Pradesh	2005-06	6636.69	11371.90	346.42	592.66	651.93	14.88	522.74	525
	2004-05	7097.08	11004.42	295.88	457.60	503.36	18.24	423.56	515
Maize									
Andhra Pradesh	2005-06	12527.32	19924.87	362.94	578.27	636.10	31.37	606.66	540
	2004-05	12620.19	19077.26	385.07	581.89	640.08	30.39	505.54	525
Bihar	2005-06	11423.55	16694.47	261.70	382.62	423.53	38.05	492.47	540
	2004-05	9718.93	15321.52	226.92	359.03	394.93	37.03	449.17	525
Chattisgarh	2005-06	3932.91	5712.22	393.14	571.22	662.24	8.67	649.75	540
	2004-05	5690.18	7750.67	466.27	635.28	715.65	10.06	599.84	525
Gujarat	2005-06	10969.77	13651.92	555.56	694.60	764.06	16.77	615.93	540
Himachal Pradesh	2005.-06	9974.31	13951.25	524.20	736.27	809.90	12.47	559.63	540
	2004-05	7458.70	11095.92	343.37	510.90	561.99	14.69	528.89	525
Jharkhand	2005.-06	7552.59	11175.11	508.73	756.39	832.03	13.85	618.81	540
	2004-05	7986.11	11426.41	461.31	655.81	726.44	15.46	506.57	525
Madhya Pradesh	2005.-06	9275.25	12677.31	543.41	743.56	824.43	13.65	546.96	540
	2004-05	6811.79	8741.79	569.69	726.67	831.29	9.46	493.87	525
Rajasthan	2005-06	10395.80	13427.77	710.45	916.28	1084.01	10.15	649.73	540
	2004-05	9688.09	12191.31	567.33	715.04	786.54	12.35	541.94	525
Tamil Nadu	2005-06	13045.42	20171.54	323.26	498.42	548.26	37.99	513.37	540
Uttaranchal	2002-03	10361.44	13714.44	665.42	868.85	955.74	13.39	451.68	485
Uttrakhand	2005-06	9125.09	12814.10	571.21	808.44	889.28	14.19	666.64	540
	2004-05	7975.27	11452.43	617.68	887.25	1045.00	12.05	509.28	525
Ragi									
Karnataka	2005-06	12814.99	15459.41	622.42	759.13	860.48	14.69	493.73	525
	2004-05	9680.93	12108.17	564.93	713.77	798.85	11.69	507.27	515
Maharashtra	2005-06	16964.14	18990.74	1316.22	1489.54	1638.49	10.95	689.03	525

Tamil Nadu	2005.-06	11595.73	16281.18	529.82	743.95	818.35	19.80	533.04	525
	2004-05	9268.03	13341.50	545.38	777.38	855.12	15.80	684.95	515

Table 3(D): Cost Estimates for Pulses

Tur (Arhar)

States	Year	A2+FL /Hect	C2 /Hect	A2+FL /Qtl.	C2 /Qtl.	C3 /Qtl.	Yield (Qtl.)/Hect..	Implicit Price(Qtl.)	MSP /Qtl.
Chattisgarh	2002-03	4495.08	6608.69	1355.02	1992.93	2478.45	2.80	1470.74	1320
Bihar	2005.-06	7221.51	14073.65	739.86	1436.98	1580.68	9.15	1958.59	1400
Gujarat	2005.-06	10129.20	13683.78	1061.34	1442.19	1604.30	8.72	1724.18	1400
	2004-05	10332.83	13759.07	1006.96	1337.42	1532.00	9.47	1553.05	1390
Karnataka	2005-06	8191.81	11975.17	944.37	1378.82	1569.11	8.33	1712.26	1400
	2004-05	8164.45	11175.22	1168.38	1603.71	1851.60	6.70	1631.46	1390
Madhya Pradesh	2005.-06	6167.05	10393.67	824.53	1392.28	1531.51	6.95	1820.06	1400
	2004-05	6187.64	10433.68	715.45	1203.22	1323.54	8.02	1640.49	1390
Orissa	2005.-06	6021.80	9030.99	1722.47	2583.43	2841.77	3.37	1638.23	1400
	2004-05	5074.85	7479.86	1161.37	1712.12	1964.88	4.05	1390.27	1390
Uttar Pradesh	2005.-06	7933.51	16403.49	676.63	1403.08	1559.14	10.59	1781.89	1400
	2004-05	7298.69	16275.89	577.70	1296.31	1458.77	10.89	1737.05	1390
Moong									
Andhra Pradesh	2005.-06	6438.31	11158.47	1325.98	2294.22	2559.30	4.83	2973.55	1520
	2004-05	4944.57	7541.83	1210.11	1849.73	2037.79	4.06	1977.23	1410
Maharashtra	2005-06	9155.29	11387.29	2319.46	2884.33	3183.14	3.88	2017.49	1520
	2004-05	7409.42	9149.15	2217.21	2737.83	3042.27	3.30	1736.81	1410
Orissa	2005.-06	4753.94	7590.95	1342.30	2141.61	2367.05	3.39	2463.91	1520
	2004-05	4634.47	5533.24	1414.00	1992.15	2222.20	3.12	1775.72	1410
Rajasthan	2005.-06	4170.67	5957.83	1843.79	2614.71	2876.18	1.97	2457.17	1520
	2004-05	3924.68	5566.82	1179.60	1672.78	1840.06	2.90	1673.52	1410
Urad									
Andhra Pradesh	2005.-06	5813.79	13164.48	611.93	1385.68	1530.29	9.49	2784.74	1520
	2004-05	4682.61	8029.85	745.28	1276.75	1404.43	6.19	1715.45	1410
Chattisgarh	2005-06	4213.27	6377.58	1083.58	1642.96	1870.44	3.78	1760.72	1520
	2004-05	5292.09	7560.46	1097.21	1561.10	1811.36	4.55	1694.07	1410
Madhya Pradesh	2005.-06	5345.14	6961.40	2382.18	3106.44	3421.48	2.16	1854.08	1520
	2004-05	5359.68	7365.13	1163.77	1602.78	1763.06	4.39	1410.38	1410
Maharashtra	2005.-06	9448.00	11956.68	1841.95	2331.37	2564.51	5.09	1836.91	1520
	2004-05	7150.74	8705.72	2474.75	3015.07	3381.04	2.85	1797.58	1410
Orissa	2005.-06	4361.99	7149.74	1162.08	1907.90	2117.59	3.58	2417.41	1520
	2004-05	3817.78	5469.22	1086.08	1554.42	1731.17	3.30	1493.57	1410
Rajasthan	2005.-06	5256.01	7616.56	1738.31	2434.11	2809.87	2.20	2218.14	1520
	2004-05	5881.26	8290.36	1248.47	1722.09	1894.30	4.27	1940.89	1410
Tamil Nadu	2005.-06	5551.16	8871.55	1784.10	2847.50	3132.25	3.07	3298.45	1520

	2004-05	4793.53	7971.92	1011.95	1681.69	1854.17	4.62	1627.77	1410
Uttar Pradesh	2005.-06	3744.07	6448.03	1189.37	2051.07	2256.18	3.05	2096.68	1520
	2004-05	3683.83	5882.15	926.32	1476.59	1624.25	3.81	1444.44	1410

Table 3(E): Cost Estimates for Oilseeds

Rupees

States	Year	A2+FL /Hect	C2 /Hect	A2+FL /Qtl.	C2 /Qtl.	C3 /Qtl.	Yield (Qtl.)/Hect..	Implicit Price(Qtl.)	MSP /Qtl.
Groundnut									
Andhra Pradesh	2005.-06	14138.10	19812.15	1419.17	1989.42	2188.36	9.24	1540.76	1520
	2004-05	11441.39	17318.32	1032.91	1563.25	1719.58	10.18	1586.34	1500
Gujarat	2005-06	14174.16	19597.61	932.79	1285.82	1414.40	13.07	1812.12	1520
	2004-05	13152.49	17246.98	1169.22	1533.51	1686.86	9.48	1812.74	1500
Karnataka	2005-06	9668.67	12982.60	1294.92	1714.45	2018.15	7.02	1656.02	1520
	2004-05	9590.46	12268.86	1489.07	1899.28	2302.55	6.06	1666.17	1500
Maharashtra	2005-06	16568.71	21463.01	1426.85	1855.77	2041.35	10.53	1616.17	1520
	2004-05	18920.79	23993.43	1705.87	2162.40	2383.74	10.69	1651.23	1500
Tamil Nadu	2005-06	15439.64	21583.31	924.74	1291.83	1421.01	15.76	1195.90	1520
	2004-05	19332.46	25273.64	1053.57	1376.31	1514.87	17.61	1561.89	1500
Soyabean									
Madhya Pradesh	2005.-06	7992.87	11990.71	663.83	994.97	1095.04	11.28	1095.29	1010(Y)
	2004-05	7898.56	12005.42	708.96	1078.15	1187.59	10.58	1217.71	1000(Y)
Maharashtra	2005-06	11547.32	14791.15	959.69	1227.04	1349.74	11.70	1133.89	1010(Y)
	2004-05	7992.87	16447.79	663.83	1286.28	1417.70	12.49	1199.54	1000(Y)
Rajasthan	2005.-06	8365.74	11102.03	679.32	902.06	1017.09	11.37	1106.87	1010(Y)
	2004-05	7432.66	10268.42	504.90	698.03	767.87	13.24	978.33	1000(Y)
Sunflower									
Andhra Pradesh	2005.-06	7735.55	11559.34	1091.54	1631.06	1794.17	7.08	1446.29	1500
	2004-05	8183.03	11898.69	1190.17	1729.03	1907.38	6.81	1526.41	1340
Karnataka	2005-06	6430.93	8519.56	1320.60	1748.50	2010.32	4.78	1563.82	1500
Maharashtra	2002-03	11924.53	15037.54	1174.72	1481.23	1629.35	10.15	1413.31	1195
	2001-02	6526.76	7624.72	1990.17	2336.11	2569.72	3.22	1544.17	1185
Maharashtra	2005-06	7966.24	10446.67	1064.39	1396.69	1536.36	7.46	1431.08	1500
	2004-05	9973.86	12819.66	1198.26	1540.26	1694.29	8.31	1528.66	1340

Table 3(E): Cost Estimates for Oilseeds (Contd)

Sesamum

Gujarat	2005-06	8083.94	10868.23	1792.61	2408.43	2672.95	4.47	3260.04	1550
	2004-05	6782.21	8932.97	2195.80	2895.16	3184.68	3.07	3724.62	1500
Madhya Pradesh	2005-06	3799.04	6188.24	2150.24	3525.75	3878.24	1.71	3677.56	1550
	2004-05	4743.28	7046.41	1687.27	2507.90	2834.76	2.74	2688.12	1500
Orissa	2005-06	5062.10	7686.07	1423.43	2164.61	2408.35	3.41	2313.91	1550
	2004-05	4483.36	6687.16	1877.19	2805.39	3237.46	2.28	2195.22	1500
Rajasthan	2005-06	4241.16	6249.90	1969.91	2895.76	3247.02	2.12	2725.92	1550
	2004-05	16.00	6814.34	1508.03	2290.32	2529.25	2.92	4014.29	1500
Tamil Nadu	2005-06	8101.40	12207.25	1751.62	2639.60	2903.56	4.57	2848.12	1550
	2004-05	7577.07	11543.17	1577.02	2401.33	2641.26	4.74	2429.94	1500
West Bengal	2005-06	8838.66	13635.56	785.88	1210.32	1359.82	10.92	1511.29	1550

Nigerseed

Madhya Pradesh	2005-06	3046.48	4725.67	789.91	1223.68	1447.36	3.65	1401.85	1200
Orissa	2005-06	4942.53	5559.19	1888.38	2123.05	2369.31	2.60	1567.93	1200
	2004-05	4087.57	5620.15	1361.49	1869.74	2056.71	2.96	1501.78	1180

Table 3(F): Cost Estimates for VFC Tobacco

VFC Tobacco

Rupees

States	Year	A2+FL /Hect	C2 /Hect	A2+FL /Qtl.	C2 /Qtl.	C3 /Qtl.	Yield (Qtl.)/Hect..	Implicit Price(Qtl.)	MSP /Qtl.
Andhra Pradesh	2005-06	44404.19	56702.18	3483.12	4447.79	4911.56	12.74	4465.05	3400(L2)
	2004-05	38707.07	50002.27	2986.42	3857.89	4257.08	12.95	3538.52	3400(L2)

Table - 3(G)

Projected Cost of Production of Kharif Crops (Rs./Qtl)

Crop/States	Variable Input Price Index				PROJECTIONS FOR 2008 -2009		
		-	-	----------	Yield	Cost of production A2+FL	C2
	Base Year	2005-06	2007-08	2008-09	-	-	-
	1	2	3	4	5	6	7
Paddy							
Andhra Pradesh	01-02	119.56	141.13	144.70	52.53	422.09	606.01
Assam	01-02	118.59	131.52	135.33	24.38	496.55	637.39
Bihar	01-02	124.58	134.14	138.21	24.48	407.14	561.48
Chhattisgarh	02-03	118.01	128.32	134.35	25.22	403.77	583.51
Haryana	01-02	114.75	127.96	130.54	45.52	513.82	749.58
Jharkhand	02-03	114.87	130.71	135.21	17.59	610.88	776.25
Karnataka	01-02	125.39	137.91	141.32	47.27	497.10	645.71
Kerala	01-02	117.57	127.77	131.61	32.18	643.11	785.16
Madhya Pradesh	01-02	121.51	133.91	137.46	15.82	570.68	761.57
Orissa	01-02	118.47	132.72	136.81	30.99	428.46	570.18
Punjab	01-02	118.68	131.46	134.00	65.58	349.07	516.70
Tamil Nadu	01-02	117.67	134.48	137.91	43.73	559.84	689.18
Uttar Pradesh	01-02	119.70	136.61	139.82	34.80	440.69	606.38
Uttarakhand	02-03	114.91	124.19	128.75	32.32	464.33	606.60
West Bengal	01-02	117.06	132.41	136.16	36.54	494.71	646.95
				Weighted Average		455.92	618.76
Cotton							
Andhra Pradesh	01-02	121.61	139.92	143.27	17.15	1526.19	2225.12
Gujarat	01-02	118.76	131.98	135.55	16.51	1375.51	1811.86
Haryana	01-02	116.23	130.70	133.93	13.90	1464.31	2128.47

Madhya Pradesh	01-02	113.15	123.13	126.38	10.29	1996.71	2747.85
Maharashtra	01-02	131.46	143.57	147.81	9.54	1920.48	2448.82
Punjab	01-02	120.01	134.86	137.92	18.73	1453.51	2048.02
Rajasthan	01-02	117.36	135.48	138.87	12.07	1141.70	1647.75
Tamil Nadu	01-02	126.32	137.21	140.81	12.07	2173.87	2883.53
				Weighted Average		1541.35	2087.72
Jowar							
Andhra Pradesh	01-02	121.11	137.01	141.18	12.93	694.41	956.09
Karnataka	01-02	119.92	132.36	136.29	7.47	621.03	799.38
Madhya Pradesh	01-02	123.87	138.15	142.05	9.14	645.63	826.68
Maharashtra	01-02	118.92	131.86	135.93	12.38	552.73	712.84
Rajasthan	01-02	118.67	139.24	143.00	5.86	539.11	770.13
Tamil Nadu	01-02	115.76	126.07	129.46	8.52	566.62	793.31
				Weighted Average		586.03	764.63
Bajra							
Gujarat	01-02	121.35	134.64	137.76	16.47	524.78	636.26
Haryana	01-02	116.92	130.46	133.48	10.90	564.42	771.84
Maharashtra	01-02	118.67	129.71	132.54	12.83	631.68	777.50
Rajasthan	02-03	112.32	128.22	131.43	8.97	412.51	568.28
Uttar Pradesh	01-02	120.08	138.73	142.17	16.95	384.48	631.65
				Weighted Average		473.51	642.93
Maize							
Andhra Pradesh	01-02	123.36	135.93	139.82	32.31	451.45	636.93
Bihar	01-02	127.49	142.50	145.85	36.67	300.78	421.53
Chhattisgarh	03-04	118.66	128.34	133.38	10.27	582.18	747.68
Himachal Pradesh	01-02	118.41	129.92	135.46	14.44	475.05	653.25
Jharkhand	02-03	123.06	138.60	142.37	15.01	588.67	804.19
Madhya Pradesh	01-02	123.69	137.02	140.53	11.98	619.48	764.26
Rajasthan	01-02	123.04	137.31	141.46	13.87	685.94	842.45
Uttar Pradesh	01-02	122.62	141.94	145.81	17.04	633.31	824.70
Uttarakhand	02-03	107.19	116.17	120.45	13.21	709.66	948.14
				Weighted		513.37	679.64

				Average			
Ragi							
Karnataka	01-02	112.42	123.75	126.94	12.46	725.50	824.12
Tamil Nadu	01-02	122.73	134.19	137.71	17.15	663.06	911.24
				Weighted Average		719.73	832.17
Tur (arhar)							
Andhra Pradesh	01-02	122.82	136.50	140.56	9.27	972.79	1562.37
Gujarat	01-02	128.95	143.31	147.20	9.24	1256.70	1609.25
Karnataka	01-02	110.32	115.81	118.79	6.70	1335.33	1794.80
Madhya Pradesh	01-02	121.59	134.60	138.07	7.25	966.90	1487.49
Orissa	01-02	140.42	159.64	165.29	4.68	1423.33	1938.38
Uttar Pradesh	01-02	114.70	132.28	135.98	10.40	740.47	1453.50
				Weighted Average		1074.02	1609.08
Moong							
Andhra Pradesh	01-02	132.51	147.38	151.57	4.67	1375.17	2073.22
Maharashtra	01-02	128.88	145.88	146.45	4.34	2125.92	2576.96
Orissa	01-02	114.60	126.45	129.41	3.12	1686.14	2353.90
Rajasthan	01-02	119.48	135.01	138.16	2.99	1586.14	2135.58
				Weighted Average		1730.94	2293.13
Urad							
Andhra Pradesh	01-02	124.21	137.64	141.11	6.73	885.43	1462.02
Chhatisgarh	02-03	120.25	130.25	135.02	4.59	1168.91	1644.45
Madhya Pradesh	02-03	114.99	128.38	131.79	3.13	2109.00	2647.55
Maharashtra	01-02	113.39	123.39	126.80	4.63	2006.33	2438.50
Orissa	01-02	117.77	131.72	135.45	3.36	1338.20	1898.81
Rajasthan	01-02	114.48	129.13	132.65	3.59	1757.84	2315.07
Tamil Nadu	01-02	128.88	141.69	146.12	4.13	1580.57	2422.41
Uttar Pradesh	01-02	118.98	136.18	139.71	3.99	1065.96	1614.59
				Weighted Average		1437.81	1994.33
Groundnut							

Andhra Pradesh	01-02	119.38	132.22	136.62	9.69	1439.39	1997.47
Gujarat	01-02	120.34	130.62	134.78	13.65	987.20	1317.24
Karnataka	01-02	124.05	134.90	138.62	6.54	1599.01	2022.95
Maharashtra	01-02	115.65	126.98	130.84	11.51	1719.11	2143.30
Tamil Nadu	01-02	123.39	134.15	137.76	16.44	1200.27	1575.16
				Weighted Average		1251.93	1659.10
Soyabean							
Madhya Pradesh	01-02	120.45	133.15	135.57	11.49	759.66	1114.00
Maharashtra	01-02	121.48	134.77	139.51	12.96	1084.22	1365.76
Rajasthan	01-02	129.95	148.77	153.36	11.78	762.93	989.94
				Weighted Average		863.83	1180.88
Sunflower							
Andhra Pradesh	01-02	124.16	137.62	141.82	6.87	1354.85	1884.05
Karnataka	01-02	120.16	131.40	134.66	4.59	1735.47	2191.37
Maharashtra	01-02	114.02	123.12	126.69	7.89	1278.76	1615.42
				Weighted Average		1555.39	2010.93
Sesamum							
Gujarat	01-02	121.52	134.75	137.83	4.55	1881.96	2413.43
Madhya Pradesh	01-02	125.37	141.94	146.40	3.45	1490.72	2144.89
Orissa	01-02	125.30	139.86	144.39	2.69	2169.39	2994.31
Rajasthan	01-02	112.50	124.19	127.97	2.90	1905.68	2699.85
Tamil Nadu	01-02	125.30	136.84	140.27	5.04	1979.45	2634.02
				Weighted Average		1835.57	2497.78
Nigerseed							
Orissa	01-02	113.52	125.63	129.35	2.98	1775.89	2188.01
Tobacco							
Andhra Pradesh	02-03	109.33	119.72	122.74	13.95	3312.92	4134.35

Note : Unusually low yields have either been ignored or in such cases, yields have been projected using state yields.

Table - 3(H)

Comparative Statement of Cost Estimates provided under Comprehensive Scheme (C.S.) and those by State Governments

State	Year	ost of Cultivation (Rs/Hect		Yield (Qtl/Hect.)		Cost of Production (Rs/Qtl	
		C.S. Survey	State* Reply	C.S. Survey	State* Reply	C.S. Survey	State* Reply
1	2	3	4	5	6	7	8
ldy							
hra Pradesh							
mon	2005-06	29257	28490	50.21	44.17	541	645
	2006-07	NA	30350	NA	46.00	NA	660
	2005-06	NA	34624	NA	55.00	NA	630
de A	2006-07	NA	30429	NA	42.00	NA	725
ar	2005-06	15182	29057	25.78	30.72	497	946
	2006-07	NA	24770	NA	NA	NA	774
	2007-08	NA	25806	NA	32.00	NA	806
ttisgarh	2005-06	15304	21973	27.27	29.05	508	756
yana	2005-06	30544	NA	48.72	NA	618	746
	2006-07	NA	NA	NA	NA	NA	756
	2007-08	NA	NA	NA	NA	NA	759
hya Pradesh	2005-06	12686	NA	16.03	NA	690	746
	2006-07	NA	NA	NA	NA	NA	781
	2007-08	NA	NA	NA	NA	NA	836
r Pradesh	2005-06	20557	20942	34.37	30.14	559	648
mon	2006-07	NA	21838	NA	29.50	NA	689
rakhand							
rse (Plains)	2005-06	21230	NA	34.95	NA	553	503
	2006-07	NA	NA	NA	NA	NA	495
	2007-08	NA	NA	NA	NA	NA	501
e (Plains)	2005-06	NA	NA	NA	NA	NA	618
	2006-07	NA	NA	NA	NA	NA	611

Table - 3(H) (Continued)

Comparative Statement of Cost Estimates provided under Comprehensive Scheme (C.S.) and those by State Governments

State	Year	ost of Cultivation (Rs/Hect		Yield (Qtl/Hect.)		Cost of Production (Rs/Qtl	
		C.S. Survey	State* Reply	C.S. Survey	State* Reply	C.S. Survey	State* Reply
1	2	3	4	5	6	7	8
ra							
hra Pradesh	2005-06	NA	6296	NA	8.92	NA	706
	2006-07	NA	7860	NA	10.00	NA	786
yana	2005-06	11463	NA	10.61	NA	782	664
	2006-07	NA	NA	NA	NA	NA	616
	2007-08	NA	NA	NA	NA	NA	624
r Pradesh	2005-06	11372	10471	14.88	12.75	593	618
	2006-07	NA	11227	NA	13.42	NA	655
ze							
hra Pradesh	2005-06	19925	15292	31.37	28.41	578	538
	2006-07	NA	17267	NA	28.00	NA	617
ar	2005-06	16694	17237	38.05	25.00	383	689
	2006-07	NA	16259	NA	24.00	NA	678
	2007-08	NA	17774	NA	24.00	NA	741
yana	2005-06	NA	NA	NA	NA	NA	664
	2006-07	NA	NA	NA	NA	NA	654
	2007-08	NA	NA	NA	NA	NA	670
hya Pradesh	2005-06	12677	NA	13.65	NA	744	651
	2006-07	NA	NA	NA	NA	NA	685
	2007-08	NA	NA	NA	NA	NA	710
r Pradesh	2005-06	12965	10852	19.63	15.16	588	638
	2006-07	NA	11214	NA	14.90	NA	668
ji							
hra Pradesh	2005-06	NA	8342	NA	11.06	NA	754
	2006-07	NA	8710	NA	12.00	NA	726

Table -3(H) (Concluded)

Comparative Statement of Cost Estimates provided under Comprehensive Scheme (C.S.) and those by State Governments

State	Year	ost of Cultivation (Rs/Hect		Yield (Qtl/Hect.)		Cost of Production (Rs/Qtl	
		C.S. Survey	State* Reply	C.S. Survey	State* Reply	C.S. Survey	State* Reply
1	2	3	4	5	6	7	8
d							
hra Pradesh	2005-06	13164	12975	9.49	6.98	1386	1859
	2006-07	NA	9691	NA	4.80	NA	2019
tttisgarh	2005-06	6378	12378	3.78	5.00	1643	1800
r Pradesh	2005-06	6448	6838	3.05	4.44	2051	1464
	2006-07	NA	7116	NA	4.48	NA	1498
undnut							
hra Pradesh	2005-06	19812	15598	9.24	6.92	1989	2268
	2006-07	NA	13596	NA	7.50	NA	1813
hya Pradesh	2005-06	NA	NA	NA	NA	NA	1650
	2006-07	NA	NA	NA	NA	NA	1675
	2007-08	NA	NA	NA	NA	NA	1700
r Pradesh	2005-06	NA	13313	NA	9.37	NA	1378
	2006-07	NA	13584	NA	9.32	NA	1415
nflower							
hra Pradesh	2005-06	11559	NA	7.08	NA	1631	NA
	2006-07	NA	12718	NA	7.00	NA	1817
abean							
hra Pradesh	2005-06	NA	NA	NA	NA	NA	NA
	2006-07	NA	15475	NA	14.00	NA	1105
hya Pradesh	2005-06	11991	NA	11.28	NA	995	1351
	2006-07	NA	NA	NA	NA	NA	1365
	2007-08	NA	NA	NA	NA	NA	1401
arashtra	2005-06	14791	NA	11.70	NA	1227	NA

Table-3(I)

Comparison of Cost Projections

	Year	State Yield	State Projections* (determined by state) Cost/hectare	Cost/quintal	Comparable Estimates** (using state data) Cost/hectare	Cost/quintal	Yield (C.S)	Projections for 2008-09 (as done by CACP) Cost/hectare	Cost/quintal
	2	3	4	5	6	7	8	9	10
#	2008-09	45.00	42576	946	42576	946	52.53	34298	606
	2008-09	28.00	28617	1278	25316	1022	24.48	16093	561
	2008-09	46.14	42574	1088	42574	923	45.52	34691	750
	2008-09	57.33	47223	1036	47223	822	65.58	34061	517
	2008-09	NA	NA	526	NA	620	32.32	21781	607
	2008-09	NA	NA	879	NA	752	NP	NP	NP
	2008-09	25.00	22402	850	22402	850	30.99	20991	570
	2008-09	NA	NA	1076	NA	851	47.27	34043	646
	2008-09	29.32	23523	809	23096	735	NP	NP	NP
	2008-09	NA	NA	3527	NA	2788	NP	NP	NP
	2008-09	15.87	28508	2630	28508	1721	13.90	30407	2128
	2008-09	7.02	16887	2646	16280	2406	9.54	24083	2449

H-44)

Table-3(l) concluded

Comparison of Cost Projections

Year	State Yield	State Projections* (determined by state)		Comparable Estimates** (using state data)		Yield (C.S)	Projections for 2008-09 (as done by CACP)	
		Cost/hectare	Cost/quintal	Cost/hectare	Cost/quintal		Cost/hectare	Cost/quintal
2	3	4	5	6	7	8	9	10
2008-09	NA	NA	1395	NA	1103	12.46	14066	824
2008-09	NA	NA	2985	NA	2359	6.70	12397	1795
2008-09	10.47	19056	1852	18762	1683	NP	NP	NP
2008-09	8.00	11345	1560	11345	1560	4.68	9598	1938
2008-09	NA	NA	2890	NA	2284	NP	NP	NP
2008-09	5.16	11228	2373	10981	2157	4.34	11309	2577
2008-09	4.00	7328	1850	7328	1850	3.12	7711	2354
2008-09	NA	NA	2831	NA	2238	NP	NP	NP
2008-09	5.98	12557	2292	11258	2084	4.63	11404	2439
2008-09	NA	NA	2632	NA	2081	6.54	14075	2023
2008-09	10.61	19134	1883	18641	1712	11.51	27117	2143
2008-09	16.00	27512	1850	27512	1850	NP	NP	NP

IV PRICE POLICY FOR 2008-09 KHARIF SEASON

The price policy for kharif crops of 2008-09 season is based on careful consideration of all the relevant factors such as costs of production, emerging demand-supply situation-both domestic and global, market prices-both domestic and international, inter-crop price parity, input-output price parity, agricultural terms of trade, concerns for national food security, etc. Besides, the Commission had wide consultation with all the stakeholders, namely farmers, millers, exporters, officials of central and state governments and agricultural research organizations.

4.2 Despite marginal improvement in the production of total foodgrains in the country in 2006-07 and that of kharif foodgrains in 2007-08, as revealed by the Second Advance Estimates (Directorate of Economics & Statistics, Ministry of Agriculture, Government of India), the overall demand-supply situation of foodgrains remains quite precarious. During 1995-96 to 2006-07, the production of total foodgrains increased at the annual rate of 0.85 percent, while the demand for foodgrains increased at the rate of about 2.2 per cent per year. By the end of the Eleventh Five Year Plan in 2011, the demand for foodgrains is projected to increase to about 235 million tonnes, as against the present record production of 217.3 million tonnes in the year 2006-07. Therefore, there is a challenging task ahead, of bridging the demand-supply gap by accelerating the pace of domestic production of foodgrains through an integrated support system, involving appropriate technological innovations as well as price and marketing support. In fact, the question of food security should be viewed as an integral part of national security and accordingly, top priority should be given to sufficient production of foodgrains, including cereals and pulses, as reduction of poverty and malnutrition through increased foodgrains production would help reduce social tensions, especially in rural areas. Even though the world cereal production in 2007 increased by about 5 percent over the previous year, the supply position of cereals for food is anticipated to be tight amidst strong demand. Also shift in the demand for some coarse cereals in western countries from food to bio-diesel may reduce the supply of grains for food, unless the current rising prices of wheat result in acreage expansion under wheat. In the case of pulses and edible oilseeds also, there are huge demand supply gaps which are presently met through imports. During 2006-07, the country imported about 5.78 million tonnes of

wheat, 4.27 million tonnes of edible oils and 2.27 million tonnes of pulses from abroad. In 2007-08, the imports of wheat, pulses and edible oils were to the order of 1.26 million tonnes (Upto January, 2008), 0.42 million tonnes (upto May, 2007) and 2.67 million tonnes (upto September, 2007) respectively. Moreover, during 2007-08, world oilseeds production is anticipated to decline by 3 percent (FAO, Food Outlook, Nov, 2007) which will compress the overall supply and step up prices. Thus, production of cereals, pulses and edible oilseeds would have to be increased substantially through adoption of improved technology, appropriate farm management practices and price and marketing support. In the case of cotton, there has been a significant increase in the production and yield in recent years. But the country continues to import extra-long staple cotton, while the short staple cotton also is reported to be in short supply. Therefore, there is need for increasing the production of extra-long staple as well as short staple cotton through further technological innovations as well as price incentive. The production of VFC tobacco has shown an increasing trend in recent years, due to rising export demand and prices.

4.3 During 2007, the market prices of almost all agricultural commodities under MSP showed an upward trend. In fact, there have been rising trends in the market prices of all the commodities in the past few years. The index of average wholesale prices (WPI) of foodgrains (base 1993-94=100) went up from 177.5 in 2004-05 to 216.6 in December, 2007. A more or less similar trend was observed in the case of almost all commodities under consideration, excepting urad, the WPI of which increased sharply from 270.4 in 2005-06 to 403.8 in 2006-07, but declined in the range of 321.7 and 380.5 during April-November, 2007. In the case of VFC tobacco, Government has not increased the minimum support prices of VFC tobacco for the last four years, even though the average prices realized in the market were much higher. It is further anticipated that due to overall tight supply position, the market prices of most cereals may remain buoyant in 2008-09. The international rice prices would rise in 2008 mainly because the total volume of rice held by major rice exporting countries would remain unchanged at 24 million tonnes, although their consumption is rising. Besides, trade restriction imposed by India, Vietnam and Egypt in the form of tariff and taxes would result in reduction in the size of trade and increased prices. The international market prices of kharif pulses such as urad,

moong and tur remained buoyant during October-December, 2007 and a similar trend is likely to continue next year due to overall tight supply situation. In the case of edible oils, the decline in production and increased demand for vegetable oils for human consumption as well as for bio-diesel requirements would keep the international prices of edible oilseeds and edible oils up. The world prices of cotton and tobacco also are likely to increase due to rising demand.

4.4 While recommending minimum support prices of various crops, the Commission keeps in mind that inter-crop price parity are not disturbed unless there is a need to encourage the farmers to grow any particular crop or crops more on grounds of national food security, sustainability and agricultural diversification. For example, during 2000-01 to 2005-06, the rates of increase in the minimum support prices of paddy were very negligible, keeping in view the huge stock of grains in the central pool and need for agricultural diversification in favour of pulses and oilseeds on considerations of sustainability. As on October 1, 2007, the stock of rice in the central pool, estimated at 5.49 million tonnes was only marginally above the buffer norm of 5.20 million tonnes, while that of wheat estimated at 10.12 million tonnes was below the buffer norm of 11.00 million tonnes. The estimated stock of rice and wheat in the central pool as on April 1, 2009, would be about 13.50 million tonnes and 4.20 million tonnes respectively i.e., only marginally above the buffer norm of 12.20 million tonnes and 4.00 million tonnes respectively. Now that the supply positions of rice, pulses and oilseeds appear tight, both domestic and international, it may be desirable to encourage the farmers to produce more paddy along with pulses and edible oilseeds, through technological innovations as well as price support. A hike in the minimum support prices of paddy and other kharif cereals, pulses and edible oilseeds would thus be justified. It is, however, true that any upward revision in the minimum support prices of essential commodities like wheat, rice, pulses and edible oilseeds would aggravate the general price situation and consequently poor people would tend to suffer. The Commission, therefore, recommends that ***public distribution system should be streamlined through improved functioning of FCI and other Government as well as co-operative agencies, rationalization of central issue prices and efficient and effective delivery of essential items to properly targetted poor families.*** While poor people should pay a reasonable price

for what they consume, in an affordable manner, the gaps between minimum support prices, market prices and central issue prices should be minimized.

4.5 In recent years, agricultural terms of trade marginally deteriorated. The index of terms of trade with base TE 1990-91, deteriorated from 105.3 in 2004-05 to 103.2 in 2005-06. Also, during January to November, 2007 the prices of most farm inputs registered an increase. The statutory minimum wages of agricultural labourers also were revised in several states, including Haryana, Madhya Pradesh, Punjab and Orissa.

4.6 Cost of production is one of the major determinants of minimum support prices of agricultural commodities. As cost varies widely from region to region, the Commission considers all India weighted average costs of production for this purpose in which process the minimum support prices do not cover the costs of production, especially C_2 costs of some crops in some states. However, the Commission makes an effort to ensure that minimum support prices cover at least the paid out expenses plus the imputed value of family labour in high cost states, i.e., A_2+F_L, while covering C_2 costs and even leaving some margin over C_2 costs in states where the costs of production are comparatively lower. Nevertheless, farmers and farmers' representatives often complain that the average cost formula reduces the ability and incentive of farmers to produce more in high cost states. Farmers grow certain crops in some areas, at higher costs because of their agro-climatic suitability that leave no choices or alternatives for them. For example, in the case of paddy, the projected average C_2 costs per quintal for the year 2008-09 were Rs.749.58 in Haryana, Rs.776.25 in Jharkhand, Rs.785.16 in Kerala and Rs.761.57 in Madhya Pradesh which are higher than the minimum support price of Rs 745 per quintal (inclusive of bonus) fixed for 2007-08. The traditional argument that high cost states should be discouraged to grow paddy, do not carry much sense as farmers in most places do not have any other choice. Besides, the rising demand for foodgrains warrants that all potential sources of increase in foodgrains production should be tapped for ensuring both national and household levels food security. Under the situation, it would be necessary that cost of production of high cost state may form the basis for determining MSP and not the average cost of all states, as was the case so far. Moreover, if farming has to be a viable occupation, farm income would

have to be substantially improved through cost reducing, albeit yield augmenting technological innovations as well as appropriate price and marketing support. The National Policy on Farmers, 2007 rightly points out that assured and remunerative marketing opportunities hold the key to continued progress in enhancing farm productivity and profitability. It is true that viability of small farmers would depend not only on improved farm productivity and income, but also on their improved access to off-farm and non-farm employment and income, but no such thing is likely to happen in a significant manner in the short run due to their lack of education and skill that could enable them to seek jobs outside the traditional farming sector. Therefore, effective technology transfer as well as price and marketing support would be crucial for viability of small and marginal farms in the short run. The National Commission on Farmers under the chairmanship of Prof. M.S. Swaminathan, has recommended that minimum support prices should include a margin of 50 percent over costs of production, so as to enable the farmers to save and invest more in modern inputs for productivity growth and sustenance. This may help reduce the incidence of farmer's suicides and also pave the way for accelerated agricultural growth and poverty reduction. Moreover, the gap between per-capita rural and urban income has widened recently, which may be a source of unmanageable rural tensions in the days to come. Furthermore, the quality of cost data, as generated under the Comprehensive Scheme for the Study of Cost of Cultivation of Directorate of Economics & Statistics, Ministry of Agriculture, Government of India, have been subjected to severe criticism by farmers and farmers associations. Recently an Expert Committee under the chairmanship of Y.K. Alagh, which looked into the methodological issues in the fixation of minimum support prices, has recommended that market based rental value of land instead of statutory rent as well as transportation and marketing costs incurred by farmers should be considered in the determination of minimum support prices. These costs are not at present properly calculated and considered. Table- 4.1 presents some alternative costs and margins for the purpose of determining the levels of minimum support prices. It would be seen from the table that implicit price of paddy with 50 percent margin over average C_2 cost using Directorate of Economics and Statistics (DE&S) data would be Rs.928 per quintal, while it would be Rs.1178 per quintal, based on C_2 cost of high cost state. The implicit price of paddy with 50 percent margin over the average C_2 cost using Directorate of Economics and Statistics (DE&S) data after adjusting for market

based rental value of land, works out to Rs.1140 per quintal. This does not include transportation and marketing charges paid by the farmers. Using this methodology, the support prices of all the kharif crops would have to be increased quite substantially, as is evident from Table- 4.1. However, as Government has yet to take a final decision on the recommendations of National Commission on Farmers as well as Alagh Committee, the Commission has used the old methodology of price fixation based on average cost concept for 2008-09. The basic principle that has been followed is that minimum support prices should cover at least the average C_2 costs plus 10 percent margin over C_2 costs. In some cases, based on market prices, food security concerns, overall demand-supply situation, inter-crop price parity etc., there could be deviations from the principle of covering average C_2 cost plus 10 per cent margin. For example, in the case of paddy, the overall demand-supply situation, deceleration in annual growth rate of rice production in recent years and concerns for national food security would warrant a substantial hike in the minimum support prices. Besides, parity between paddy and wheat should be maintained to hold the nation together, as there is a strong feeling of alienation among paddy growers in southern and eastern regions of the country. It should be noted that in the past, the minimum support prices of paddy moved very close to that of wheat and were sometimes higher than that of wheat as in 1991-92. In any case, the costs of production of paddy and wheat are more or less similar. In some years, the all India weighted average cost of production of paddy worked out to be even higher than that of wheat as in 2004-05. Similarly, in the case of cotton, minimum, support prices should address the issue of farmers' high costs in some regions, low level of present support prices and consequently, rising incidence of farmers' indebtedness and suicides. In view of the above mentioned factors and the deteriorating socio-economic condition of the farmers in general and cotton growers of some regions in particular, the Commission would like to recommend the minimum support prices of paddy and cotton at level higher than their average C_2 costs of production plus 10 percent margin. The overall trend being set in this new agricultural price policy would be consistent with the National Policy on Farmers, 2007 which points out that assured and remunerative marketing opportunities hold the key to continued progress in enhancing farm productivity and profitability. The minimum support prices now would not merely cover the costs of production of crops, but also leave at least 10 percent margin over their average C_2 costs of production, so that farming

becomes a remunerative occupation. The Commission has not considered either the recommendations of National Commission on Farmers for allowing 50 percent margin over all India average C_2 cost or that of high cost states, for reasons already stated.

Table 4.1 Comparative Implicit Prices (Rs./Qtl)

Crop	Implicit Price with 10% margin over average C_2 Cost	Implicit price with 50% margin over average C_2 cost	Implicit price with 50% margin over C_2 cost of high cost state	Implicit price with 50% margin over C_2 cost with market based leased rent
Paddy	680.64	928.14	1177.74	1139.65
Cotton	2296.49	3131.58	4325.30	4097.25
Jowar	841.09	1146.95	1434.14	1416.76
Bajra	707.22	964.40	1166.25	1217.55
Maize	747.60	1019.46	1422.21	1208.67
Ragi	915.39	1248.25	1366.86	1463.59
Tur (arhar)	1769.99	2413.62	2907.57	3036.78
Moong	2522.44	3439.70	3865.44	4119.24
Urad	2193.76	2991.50	3971.33	3734.80
Groundnut	1825.01	2488.65	3214.95	3185.85
Soyabean	1298.97	1771.32	2048.64	2277.06
Sunflower	2212.02	3016.40	3287.06	3646.18
Sesamum	2747.56	3746.67	4491.47	4971.31
Nigerseed	2406.81	3282.02	3282.02	3986.03
Tobacco	4547.79	6201.53	6201.53	7521.60

4.7 The Commission received cost data as well as suggestions from state governments as well as farmers and farmers associations. According to State Government sources, the estimated costs of production per quintal of paddy in 2008-09 are Rs.1036 in Punjab, Rs.1278 in Bihar, Rs.1088 in Haryana, Rs.876 in Karnataka and Rs.946 in Andhra Pradesh. These cost figures are much higher than those estimated under the Comprehensive Scheme of Directorate of Economics and Statistics, (DE&S) Government of India. Similarly, the cost figures supplied by farmers and consortium of farmers' associations are higher than those supplied by DE&S. Accordingly, the minimum support prices, as suggested by some state governments and farmers, are high. The rice millers

also have suggested an increase in the minimum support price of paddy for 2008-09 season.

4.8 Thus, considering all the relevant factors, as mentioned above and after consultation with all stakeholders, including officials of central and state governments, ICAR-SAU scientists, farmers, millers and traders, the Commission recommends that the minimum support prices of various kharif crops for 2008-09 season be fixed as under:

Commodity	**Variety**	**Quality**	**Minimum Support Price (Rs. per quintal)**
Paddy	Common	FAQ	1000
	Grade-A	"	1050
Jowar	Hybrid	"	840
	Maldandi	"	860
Bajra	-	"	840
Maize	-	"	840
Ragi	-	"	915
Tur (Arhar)	-	"	2000
Moong	-	"	2520
Urad	-	"	2520
Groundnut-in-shell	-	"	2100
Soyabean	Black	"	1350
	Yellow	"	1390
Sunflowerseed	-	"	2215
Sesamum	-	"	2750
Nigerseed	-	"	2405
Cotton (Kapas):			
(iii) Staple length (mm) of 24.5 -25.5 and Micronaire value of 4.3 - 5.1		"	2500
(iv) Staple length (mm) of 29.5 -30.5 and Micronaire value of 3.5 – 4.3		"	3000
VFC Tobacco			
Black soil	F_2 grade	"	4350
Light soil	L_2 grade	"	4550

The Commission further recommends that:

i) ***the prices for different varietal groups of rice be derived from the minimum support prices of paddy on the basis of hulling/milling ratios as well as the processing and incidental charges obtaining in different states***;

ii) ***the prices of varieties of cotton grown in different states, other than those in the groups of Short, Medium, Long and Extra Long Cotton (Kapas) be fixed keeping in view the normal market price differentials between Basic Staple Length of 24.5 mm to 25.5 mm and Micronaire Value 4.3 – 5.1; Long Staple Length 29.5 mm – 30.5 and micronaire value of 3.5 – 4.3 and other varieties and technical parameters;***

iii) ***the prices of grades other than F_2 VFC tobacco grown on black soils be fixed keeping in view the normal market price differentials between F_2 and other grades***;

iv) ***the prices of grades other than L_2 VFC tobacco grown on light soils be fixed keeping in view the normal market price differentials between L_2 and other grades***;

vi) ***any future strategy of agricultural development should be based on detailed analysis of likely impact of climate change on crop yields and income, especially in rainfed areas in the coming years and Government should put in place an appropriate coping mechanism, to minimize its adverse effect;***
(Para 1.1)

vi) ***Government should put in place an appropriate administrative as well as physical infrastructure and delivery system for increasing the foodgrains production by about 20 million tonnes, as targetted under the National Food Security Mission during the Eleventh Five Year Plan;*** (Para 1.5)

vii) ***the practice of late and ad hoc announcement of bonus over and above the minimum support prices should be discontinued, as it does not help the farmers to get more income nor does it help the Government to procure much additional quantity of grains;*** (Para 1.8)

viii) ***Central Government should convene a meeting of chief ministers of all states and discuss the issue of rationalization of subsidies on food, fertilizer, power, etc. for additional resource mobilization that would facilitate greater investment in agriculture, rural education and health services. Besides, Government should formulate an appropriate land policy to attract private investment***

in agro-processing along with rural infrastructure and institutions; (Para 1.13)

ix) ***Government should modify its existing agricultural insurance policy to make it more comprehensive and farmer-friendly. The Department of Agriculture and Co-operation seems to have already prepared a comprehensive scheme in this respect which should be considered and implemented involving the participation of Government, private insurance companies as well as farmers' associations or self-help groups;*** (Para 1.14)

x) ***the system of levy price for rice should be gradually done away with, as the benefits of procurement through this route do not generally accrue to farmers and emphasis should be given on procurement of paddy directly from farmers;*** (Para 2.22)

xi) ***a focused plan of action should be spelt out in the form of new policy initiatives for improving the production and productivity of coarse cereals;*** (Para 2.40)

xii) ***the import duty on edible oils should be kept at such a level that does not affect domestic prices and production of edible oilseeds adversely;*** (Para 2.99)

xiii) ***Technology Mission on Oilseeds & Pulses should examine the suggestion of the oil industry to declare cultivation of oil palm as plantation and allow the public and private enterprises to enter in this field and make suitable recommendations to the Government in this regard;*** (Para 2.102)

xv) ***the Directorate of Economics and Statistics and the Office of the Textile Commissioner, through mutual consultation, should immediately reconcile the production estimates of cotton and a single series of the same be arrived at;***

(para 2.116)

xv) ***the extension machinery of State Governments should be geared up to check marketing of spurious seeds and to educate farmers on the farm practices required for the successful cultivation of Bt cotton, especially in areas affected by farmers' suicide. The Government should also immediately target the water deficient/dryland cotton growing areas for increasing the irrigation coverage through ponds, drip irrigation etc.*** (Para 2.125)

xvi) ***public distribution system should be streamlined through improved functioning of FCI and other Government as well as co-***

operative agencies, rationalization of central issue prices and efficient and effective delivery of essential items to properly targetted poor families. (Para 4.4)

(T. HAQUE)

CHAIRMAN

(M.S. GREWAL) **(V.M. JADHAV)**

MEMBER **MEMBER**

(K.G. RADHAKRISHNAN)

MEMBER SECRETARY

February 5, 2008