

REPORT
OF THE
COMMISSION
FOR
AGRICULTURAL COSTS AND PRICES

ON

PRICE POLICY FOR RABI CROPS

OF

2006-2007 SEASON

DEPARTMENT OF AGRICULTURE AND COOPERATION
MINISTRY OF AGRICULTURE
GOVERNMENT OF INDIA
NEW DELHI

JULY 2006

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COMMISSION FOR AGRICULTURAL COSTS AND PRICES

PRICE POLICY FOR RABI CROPS OF 2006-2007

SUMMARY OF RECOMMENDATIONS

In this report, the Commission for Agricultural Costs and Prices presents its views on the Price Policy for Rabi Crops of 2006-2007 season. The Commission recommends that:

the minimum support prices for the fair average quality (FAQ) of various rabi crops of 2006-2007 season be fixed at the following levels:

<u>Commodity</u>	<u>Rs/Quintal</u>	
Wheat	700 *	
Barley	565	
Gram	1445	
Masur (Lentil)	1545	
Rapeseed/Mustard	1600	
Safflower	1565	(Para 4.12)

* If necessary, Procurement Price for wheat be announced separately by the Government in early March,2007,based on prevailing market situation and buffer needs.

Commission further recommends that:

- i) ***the prices of other oilseeds belonging to the rapeseed/mustard group be fixed on the basis of their normal market price differentials with rapeseed/mustard;*** (Para 4.12)
- ii) ***Government should fix the procurement price of those foodgrains for which it intends to enter in the market to meet its obligation of food management, just prior to commencement of marketing season, in consultation with the Department of Agriculture and Cooperation, the Department of Food and Public Distribution and the CACP, and also establish a transparent mechanism of procurement, well distributed over the production regions;*** (Para 1.14)
- iii) ***the strategies of food procurement and distribution should be made flexible, keeping in view the emerging marketing scenario and the functioning of PDS should be made more efficient and effective;*** (Para 1.15)
- iv) ***the Directorate of Economics and Statistics together with the State Governments should review the method of collection, tabulation and transmission of statistics on area, production and yield of crops, particularly of foodgrains for ensuing their reliability and timely availability;*** (Para 2.4)
- v) ***there should be a comprehensive review of wheat production situation in various regions by the government for evolving short term and medium term strategies for***

raising wheat production to meet the growing demand;
(Para 2.24)

- vi) **Government should create an enabling environment to develop the pulse sector. This would mean that the development of new pulse varieties and cultivation technologies be reinforced by adequate policies, support programmes in education and training of farmers, supply of input and credit and the development of appropriate marketing channels;** and (Para 2.55)
- vii) **there should specific focus on development of safflower seed sector in ISOPOM for strengthening research – farm linkages, improving productivity and streamlining post harvest linkages to enhance competitiveness and harness trade opportunities.** (Para 2.78)

I. AN OVERVIEW

The agriculture sector was bestowed with near normal rainfall during the monsoon 2005. However, the performance of Indian Agriculture during 2005-06 was a mixed bag of vulnerability and resilience to distinct climatic aberrations and also that of transitional behaviour of market. According to the Fourth Advance Estimates of Crop Production (15.07.06), released by the Directorate of Economics and Statistics (DES), Department of Agriculture and Cooperation (DAC), the total foodgrains production during 2005-06 is anticipated to be 208.3 million tonnes. These estimates apparently reflect impressive recovery of foodgrains from the subdued production of 198.36 million tonnes (Final Estimates) in 2004-05. But it is almost of the same order of assessment for 2004-05 made in the corresponding 4th Advance Estimates of Crop Production, which was subsequently revised downward. Thus, it may not be possible to infer the relative performance of foodgrains production for 2005-06, based on provisional advance estimates. However, the assessed supply of foodgrains from domestic production is well below the target of 215.00 million tonnes set for 2005-06, and is also lower than the record production of 213.19 million tonnes achieved in 2003-04 and the production level of 212.85 million tonnes realized in 2001-02.

1.2 The kharif foodgrain production during 2005-06 responded to the favourable monsoon with record production of 109.70 million tonnes. But the performance seems to have dissipated in the subsequent rabi season, when the foodgrain production is expected to be only 98.60 million tonnes, i.e 5.69 million tonnes less than the corresponding record production achieved in 1999-2000. Estimated production of wheat during 2005-06 is pegged at 69.48 million tonnes (4th Advance Estimate), almost of the order of the subdued production of 68.64 million tonnes in 2004-05. The market behaviour however, indicates that wheat production possibly has suffered to some extent due to unusually high temperature that prevailed over northern India in the month of February 2006. The total production of pulses during 2005-06 at 13.11 million tonnes and that of rabi pulses at 8.45 million tonnes are almost of the same levels as the respective production of 13.13 million tonnes and 8.41 million tonnes in the previous year. The total pulses production was 13.46 percent lower than the target of 15.15 million tonnes set for the year and 12.1 percent lower than the record production of 14.91 million tonnes achieved in 1998-99. The year 2005-06 has, however, posted production landmarks for commercial crops with total oilseeds and cotton achieving all time record of 27.73 million tonnes and 19.57 million bales (170 kg. each) respectively. Sugarcane production has also recovered to 278.39 million tonnes from 237 million tonnes in 2004-05.

1.3 Indian agriculture is faced with fresh challenges in the ensuing year 2006-07. Foremost is the behaviour of monsoon 2006, which, at its mid course, is showing erratic symptoms. The updated Long Range Forecast (LRF) for monsoon 2006, released by India Meteorological Department (IMD) on 30th June, 2006, has predicted 92 percent of average seasonal rainfall

(June – September). The forecast, having a production error ± 4 percent, is on the margin of meteorological drought, particularly in Central India, which is predominantly rainfed. Given the modest performance of agriculture during 2005-06, despite near normal aggregate precipitation, the initial symptoms of rain is indeed a cause of concern. Though the water storage in the major reservoirs of the country at the onset of monsoon was a comfortable 60 percent higher than the 10 years' average, low precipitation may affect accretion as well as irrigation. Delay in arrival of monsoon in North West India is reflecting on paddy transplantation in Punjab and Haryana and sowing of coarse cereals and oilseeds in Central India, which may adversely impact productivity. This concern assumes greater significance, since in recent years, the foodgrains production in the country has been more or less stagnant and the domestic supply has not been able to keep pace with the population growth. If the monsoon continues to behave erratically, it may dent into the food security of farm household in affected areas

1.4 The production growth of foodgrains and that of wheat in particular, during the period 1995-96 to 2004-05 was 0.55 percent and 0.67 percent per annum respectively, nearly one third of the rate of growth of population. The growth momentum of wheat production was the strength of India's green revolution and the corner stone of country's quest for sustained food security in the past. The sharp deceleration in the growth of wheat production from the impressive 3.67 percent per annum during 1985-86 to 1995-96 is not only alarming, it has also destabilized the apple cart of food security. Since the record production of 76.37 million tonnes way back in 1999-2000, the production of wheat has been frequently tending to be lower than 70 million tonnes. Wheat crop is often exposing its vulnerability to climatic aberrations, particularly to the prevalence of high temperature at some stage or other of the crop growth. What is more disturbing is the lack of resilience of the varieties to the climatic factors, despite having the irrigation cover for over 88 percent of its acreage. Even in the states like Punjab and Haryana, which are considered the grainary of the Nation, the productivity of wheat in the past few years has been gradually declining. Besides the climate, the existing wheat varieties, which were released nearly a decade back, appear to be showing signs of fatigue. Further, in the high productivity regions of North West India, vast wheat area is being engulfed by rapid urbanization and in the process denting the production base of wheat crop. While the crisis in wheat production is assuming serious proportion, the pulses production remains entrapped in perpetual stagnation. The accentuation of demand-supply gap has caused unprecedented rise in prices of pulses to such an extent that its availability to consumers has become a luxury.

1.5 The crisis in Indian agriculture is not only of supply constraints, but also there are issues of managing surplus supply of oilseeds owing to good production performance. The edible oil economy, accustomed to importing about 40 percent of its requirement, experienced quaint situation to handle bumper production of rapeseed and mustard, the prime rabi oilseed crop, during 2004-05 as well as in 2005-06. A conscious hike in MSP, after restoring the intercrop price parity in the past two years, was favourably and expectedly responded by the farming

community of Haryana, Rajasthan and Madhya Pradesh by augmenting the domestic supply. However, in the absence of commensurating adjustment in imports, the total domestic supply of edible oil took a quantum jump of 25 percent. Resultant price depression in domestic market necessitated extensive price support operation for rapeseed and mustard in 2004-05 and 2005-06. The accumulated stock of about 4 million tonnes of procured rapeseed and mustard with NAFED, low disposal rate of procured stocks and inadequate financial support to sustain the market intervention further are rendering the viability of sustained domestic supply of rapeseed and mustard questionable and are compelling to find alternative solutions of different kind for domestic supply- demand mismatch.

1.6 The behavior of market and the movement of domestic prices of agricultural commodities, in general, were distinct from the past and from the aggregate behavior of all commodities, in 2005-06. The average annual increase in Wholesale Price Index (WPI base 1993-94:100) during 2001-02 to 2004-05 was 4.7 per cent per annum, whereas for agricultural commodities this average increase was 3.4 per cent. The wholesale prices of foodgrain and those of wheat and rice during these four years were almost stable with the average annual change in WPI being modest at 0.5 per cent, 1.1 per cent and 0.1 per cent respectively. The wholesale price of pulses during this period witnessed a deflationary trend of -0.7 per cent per annum, whereas the WPI of oilseeds was buoyant at 8.9 per cent per annum. During 2005-06, the WPI reflected a complete reversal, particularly in the later half of the year. The WPI's of pulses in January, 2006 at 209.5 was 20.5 per cent higher than the WPI of January 2005 and it further climbed up to 238.8 in May 2006, an increase of 34.9 per cent over the price in May 2005. The WPI of urad in April, 2006 was 380.3, which is 75.1 per cent higher than that in April last year. WPI of wheat also was higher by more than 10 per cent in February, March and May, 2006 than the corresponding months of previous year. The sharp upswing in wheat prices, particularly in the period of harvest and fresh arrivals of crop in the market was unprecedented. The prices of oilseeds and edible oil, however, experienced depression in the wholesale market and the WPI registered a fall across the board during 2005-06.

1.7 Since 2003-04, the ban on futures trading in all commodities has been lifted and futures for number of agricultural commodities are facilitated by National Commodity and Derivative Exchange (NCDEX), Mumbai. During 2005-06, there was an exceptional increase in volumes of wheat futures and its temporal trend reflects an interesting pattern. The futures for April 2006, the commencement month for procurement, contracted in December 2005 onwards remained higher than the MSP. The futures for April to June 2006 moved upward since February 2006 to more than Rs 1000 per quintal, responding to crop uncertainty due to temperature and subdued procurement. However, the futures tumbled by almost Rs. 100 per quintal in the last week of June 2006 after proactive policy intervention by the government to hold the prices through liberal imports. The futures for October 2006 and December 2006 moderated to about Rs 850 per quintal and Rs 900 per quintal respectively. However, the moderation of futures for October and

December 2006 is contrary to normally expected seasonality in price of wheat. Extension of contract time interval to eight months has improved predictability of price. The price volatility of wheat futures during April – June may be due to speculative market functioning, more than what normally should be for business decision. The admissibility of pledging warehouse stocks for securing bank advances seems to have stimulated the short-term profit booking by traders. The futures had attracted similar vigorous interest for pulses, particularly for urad. After peaking to Rs 3600 per quintal in the month of March and April 2006, the urad futures for September 2006 have receded to Rs 2400 per quintal. The futures for gram for the harvesting month of February - March 2006 hovered around Rs. 1800 per quintal. However, the December 2006 futures have been quoting at Rs. 2600 per quintal.

1.8 The commodities such as rapeseed and mustard, where supply side was strong and government intervention in market was substantial, futures volumes were low. The futures enables discovering the market prices and hence all the stakeholders who can access this market intelligence do take the clue for their decisions, and some trickle down effect to farmers is also expected, as it happened in the current season of wheat. But the speculative tendencies resulting into excessive price spread hampers the consumers. Hence, given the merits of such price discovery mechanism, certain corrective measures are essential for safeguarding the interest of consumers. Firstly, the time period of futures should be atleast 12 months to cover full crop cycle and improve transparency of price seasonality. Secondly, the warehousing receipts should not be an open ended negotiable instrument, but be capped and preferentially be allowed for farmers, for whose benefit this marketing reform is conceived. Thirdly, there should be emphasis on physical delivery with strict control over defaults. Fourthly, circuit breaker for daily price volatility, which is 4 percent at present for wheat be tightened, particularly during the peak marketing season, when large number of farmers are expected to interact in the market. Sharp daily swings in prices and attached sentiments may hamper their interest.

1.9 The domestic production of wheat and the behaviour of its prices during the peak marketing season and later, have a crucial role in management of food security of the country, where the Government is the prime stakeholder. Sustainable food security, both at macro and micro levels, has been one of the main development agenda since independence to thwart the historical legacy of vulnerability of foodgrain production to natural calamities and dislocation of its access to people. Accordingly, the food policy is postulated to achieve self-reliance in production, to ensure equitable distribution, and to bring about price stability in the context of both production and distribution, through planned management of food supplies, involving procurement, inter-State movement of foodgrains, a system of public distribution and the building up of buffer stocks. In order to sustain such a cycle of food management, the government has been procuring wheat to build the stocks keeping in view the buffer stock norms at different points of time in a year. Incidentally, the wheat procurement operation had been facilitated in the past by the distinct behaviour of wheat market at peak harvest supply when prices used to stay depressed and the

government intervention to defend the MSP resulted in built up of the stocks as well. This mechanism did not work in the wheat marketing season 2006-07, as the market prices were higher than the MSP. Despite the procurement bonus of Rs 50/- per quintal, announced by Government of India on April 24, 2006, only 9.2 million tonnes of wheat could be procured by Food Corporation of India and affiliated state agencies, nearly 35 percent less than the procurement level in the past few years. Given the lower wheat stock level of 2.01 million tonnes on 1st April 2006 against the buffer stock norm of 4 million tonnes, the lower rate of procurement would be resulting in a stock level much lower than buffer norm. In order to obviate the market sensitivity to the resultant weakening of government leverage for intervening subsequently for price stabilization, the government decided to import wheat of the order of 3.5 million tonnes in coming months.

1.10 The volatility of supply and prices of wheat is also evident in the world market. According to FAO (Food outlook, June 2006), the unstable global scenario may persist in the coming months. The global wheat production in recent years has been declining. According to FAO, the global production of wheat in 2006-07 is predicted to be 616.8 million tonnes, down by 10 million tonnes from the production in 2005-06 and 15 million tonnes lower than that in 2004-05. With the trade forecast being robust at 110 million tonnes, the year end stock for 2006-07 would be 6 percent lower than last year. The scenario for coarse grains also would be witnessing a fall of 13 million tonnes in production in 2006-07, tightening the demand-supply position. However, in the case of oilseeds, FAO predicts expansion of supply of oilseeds exceeding the demand.

1.11 These trends of demand and supply have obvious consequences on international prices, the behaviour of which is not in consonance with the trade interests of the country. In case of wheat, where India has trade stakes for imports, the prices in 2005-06 have shown sharp upswing. The average international prices of wheat (US HRW) moved up to \$ 152.5 per tonne in 2005 (January-May) and the prices in May 2006 quoting at \$ 193.2 per tonne. Wheat Canada in May 2006 at \$ 215.7 per tonne is higher by 8 percent from average price for 2005 (January-December). During the three months, March, 2006 to May, 2006, US – HRW and Wheat Canada prices increased by \$ 19 per tonne and \$ 13 per tonne respectively. The prices of edible oils however, are in a depressive phase. The palm oil and soya oil prices were \$ 471.3 per tonne and \$ 616.0 per tonne respectively in 2004. In 2006 (January-May), these prices have declined to \$ 437.7 per tonne and \$ 546.8 per tonne respectively. The falling prices of edible oil, thus would be exerting significant pressures on domestic oilseed economy, through higher import.

1.12 In the contemporary context, when the food management system is at the cross roads and finds itself vulnerable on more than one count, a review became necessary. The Commission took the initiative to organize a seminar on “Emerging Issues in Food Management”, on 2nd June, 2006, that enabled a detailed discussion on its varied dimensions. The buoyancy in the wheat market during the current marketing season was the culmination of several factors

playing their role in conjunction with the domestic supply constraints of recent years. There had been reform initiatives in the recent past to strengthen the market linkages of farmers for better price realization of their produce. The amendments in APMC Act to provide freedom to farmers to sell their produce to prospective buyers of their choice, removal of restrictions on movement of commodities, their warehousing and entry of private and corporate in the market are the major initiatives taken to further the horizontal and vertical integration of agricultural produce markets. The advent of price discovery through futures trading was also on high pitch this year in respect of wheat transactions. Not long ago, the government policies had been reviewed and the transition in policies was explicitly articulated in the Economic Survey 2005-06 stating that a **distinct bias in agricultural price support policies in favour of food grains in the past may have distorted cropping pattern and input usage, and may require corrections. Market for farm output continues to depend heavily on expensive government procurement and distribution systems. A shift from the current MSP and public procurement system and developing alternative product markets are essential for crop diversification and broad-based agricultural development** (page 173, Economic Survey 2005-06, Ministry of Finance, Government of India).

1.13 The foodgrains production has lost its growth momentum and there are doubts on its robustness. The market forces in the evolving economic environment ride on demand-supply mismatch and apparently dent the established mechanism of public market intervention and procurement. There can not be two opinions that recharging of wheat economy on the rhythm of green revolution is the need of the hour and this necessitates concerted efforts to improve the varieties profile of wheat and its vigorous spread over low productivity regions. Besides, the consumption basket and profile of consumers is also undergoing changes. NSS consumer expenditure surveys of successive rounds reveal that per capita consumption of wheat and wheat products is steadily increasing in urban areas. Though the Indian economy is becoming more market friendly and is fast growing, albeit in macro sense, still the number of people having food has been increasing in the country and they can not be left at the mercy of market forces, particularly in the context of food access. There are schools of thought that delink the issue of food security from the self-sufficiency in food production and articulate that the level of India's foreign exchange reserves is a permit to acquire food security through imports. The limitations of availability of wheat through external sources may dispel such myopic view. India's entry in the global market with import demand of more than three million tonnes is the largest ever and has already triggered global price volatility. Therefore the food policy postulations of self-sufficiency in production, equitable distribution, and price stability are to be set in a more complex economic environment, necessitating urgent attention of policy makers and planners for repositioning the aspects of sustainable food security.

1.14 Food policy, therefore, needs to be flexible enough to respond to different situations fitting into the dynamic market environment, either of deficits or of surpluses, and the broad

framework of economic policy. Convergence of safeguarding the MSP and creation of buffer stock, the two different functions of public market intervention, takes place only under certain market conditions. When market itself is protecting MSP, these two functions are not likely to converge, as witnessed in case of wheat during the marketing season 2006-07. In such a situation, procurement operations for creation of buffer stock needs to be delinked from MSP operations and to be aligned to prevailing market situations. This is inevitable since the government announces the MSP well before the sowing season whereas the market responds to likely supply potential, taking into consideration of agro-climatic conditions influencing the crop response during sowing and harvesting. Moreover, the MSP is not expected to define the market price, rather it is a support price as a security net to farmers against adverse market situations. Commission, therefore, recommends that **Government should fix the procurement price of those foodgrains for which it intends to enter in the market to meet its obligation of food management, just prior to commencement of marketing season, in consultation with the Department of Agriculture and Cooperation, the Department of Food and Public Distribution and the CACP, and also establish a transparent mechanism of procurement, well distributed over the production regions.**

1.15 The food management also requires flexibility in allocation and offtake. The distribution of food stock to the food insecure people is of underlining importance to meet the objective of micro food security. In the wake of mounted large foodgrain stocks with the government in 2001-02 and 2003-04, there was conscious effort to trim the stock by enhancing the offtake. In the process, allocations to various welfare schemes were added and augmented. Essentially, the Targeted Public Distribution System (TPDS) aims for food security to people below poverty line (BPL) and if implemented efficiently, should meet that objective comprehensively. There are serious criticism on functioning of TPDS on account of leakages and recycling in open market. The pro-rata allocation of 35 kgs per card as well as huge differentials between TPDS and market prices, have led to large scale diversion of PDS grains. Therefore, measures to streamline the food distribution system should be undertaken urgently. Firstly, the menace of bogus cards be strictly curbed with strong deterrents for violators. Secondly, There appears to be no rationality of distributing uniform quantity of foodgrains to BPL card holders, irrespective of consumption units. Therefore, the allocation to card holders be made realistic to per unit and not per card. Thirdly, there is no need to pursue the allocations for APL. On this count alone, about 3.5 million tonnes of foodgrain allocation would be set aside to balance the lower level of stocks. Fourthly, the allocation under other welfare schemes be scaled down as the beneficiaries overlap with the domain of TPDS. The rural employment guarantee scheme (REGS) also ensures strengthening of purchasing power of poor people through wage payments. Fifthly, central issue prices for TPDS have been not revised for quite some years now, while huge price differentials result in large scale diversion. Sixthly, if the ration shops are given flexibility to be the market outlets for other goods besides the PDS, not only their viability will improve, it will also strengthen micro food security in a more monetized welfare paradigm. The step taken by Gujarat to allow the PDS

outlets to become multi-utility outlets is practical and programmatic. Seventhly, the states may be encouraged to procure coarse cereals and link it with PDS in their respective states. The Commission therefore recommends that ***the strategies of food procurement and distribution should be made flexible, keeping in view the emerging marketing scenario and the functioning of PDS should be made more efficient and effective.***

1.16 The crisis in agrarian economy is not confined to disturbed food management, but is pervasively and structurally rooted. The farm household economy is failing to respond to several of government initiatives of rural development, extension, credit and market reforms, and has been sinking in several parts of the country with unabated incidences of suicides by the farmers. The Commission in its recent report on Price Policy for crops grown in kharif season 2006-07 had highlighted the structural dichotomy of falling share of agriculture in the economy co-existing with accentuating demographic pressures. In the differentiated development of agrarian and non-agrarian economies, the farming community finds itself stuck with economic deprivation and distress. Under the shadows of glittering metros, a vast hinterland is struggling for rudimentary survival needs. Devoid of institutional support and infrastructure, dwindling production units, diminishing factor productivity, falling returns and accentuating farm risk adding to indebtedness, the farming community appears to be in great depression. The consequences of this structural peril are crippling the rural household often culminating into suicides. The solution for the same can not be solely found in agrarian economy. It would necessitate a comprehensive strategy of diversification in rural economy and demographic dispersal in non-farm sectors. The agricultural development programmes have to go to the basics of land and soil, assessment of its nutrients, and farming packages to suit such deficiencies. The issues of good agricultural practices, marketing, value chains, irrigation, manuring etc have to be harmonized to improve the farm returns. The institutional involvement and resources mobilization should be made accountable to results.

1.17 In the midst of current crisis in food management, doubts have been raised on the contemporary initiatives of reforms in agricultural marketing. These doubts need to be dispelled. One of the major weaknesses of Indian agriculture is that the farmers are disconnected from the marketing and post harvest value chain and in the process are made price takers. In the arena of agricultural marketing, the farmers and producers are often disadvantaged due to their poor logistic connectivity, lack of awareness, ignorance about the potential of their produce, urge for quick liquidity and disjoint from mainstream institutions of technology, credit, inputs and marketing. Domestic market for agricultural produce is rapidly integrating horizontally and vertically. Strengthening the backward linkages of the market with production system is necessary to transform the stature of farmers as price taker so that their share in the prices paid by consumers increases. Marketing reform is an on going process and it intends to provide the enabling environment for efficient marketing, involving not only the marketing systems and roles of stakeholders, but also redefining the institutional roles, resource flow for much needed infrastructure and farm linkages. Accordingly, the reforms in agricultural marketing had been evolving, dovetailing with emerging economic

environment and with the contemporary sectoral requirements. The evolution of regulation of agricultural markets itself was a reform initiative to protect farmers from the exploitation of intermediaries and traders, to create infrastructure of market yards and to establish a system of orderly marketing that ensures better prices and timely payment to farmers for his produce. Over a period of time these markets have, however, acquired the status of restrictive and monopolistic markets, providing no help in direct and free marketing, organized retailing, smooth raw material supplies to agro – processing, competitive trading, information exchange and adoption of innovative marketing systems and technologies. The Freedom of Farmers to sell their produce directly in bulk remained restricted except on retail basis to the consumers. Often, the farmers have to bring their produce to the Market yards and the market was not able to reach to the farmers. The exporters, processors and retail chain operators could not get desired quality and quantity of produce due to restrictions on direct marketing. The processor could not buy the produce at the processing plant or at the warehouse. This necessitated the consistent and harmonized supply chain originating from farms. The produce is required to be transported from the farm to the market yard and then only it could be purchased and taken to the plant. Multiple intermediaries and transactions were adding to the cost. Such weak integration of production system, with post harvest value chain leads to increase in the cost of marketing and the farmer end up getting a low price for their produce. In the current marketing season, farmers got better price for wheat and there were no prevalence of distress sale, barring some instances in isolated pockets. The farmers were also becoming market conscious and their market intelligence empowerment need not be discredited.

II. PROFILE OF RABI CROPS UNDER PRICE SUPPORT

The Commission submitted its Report on Price policy for Rabi Crops of 2005-06 on June 8th 2005 recommending, *inter alia*, that the Minimum Support Prices (MSP) for fair average quality (FAQ) of various crops be fixed at the following levels :

(Rs. Per quintal)				
Crop	Variety	MSP fixed by Government for 2004-05 Season	MSP recommended by CACP for 2005-06 Season	MSP fixed by Government for 2005-06 Season
1	2	3	4	5
Wheat		640	650	650*
Barley		540	550	550
Gram		1425	1435	1435
Lentil (Masur)		1525	1535	1535
Rapeseed/Mustard		1700	1715	1715
Safflower		1550	1565	1565

* Additional bonus of Rs. 50 per quintal for wheat for marketing season 2006-07

2.2 The Government announced the price policy for cereals, pulses and oilseeds crops grown in Rabi season of 2005-06 on September 29th 2005, fixing MSP at levels recommended by the Commission. Subsequently, the government announced on 21st April 2006, additional bonus of Rs. 50 per quintal for wheat for the marketing season 2006-07.

(Table 2.9)

WHEAT

2.3 Wheat has been the corner stone of India's quest for sustainable food security. In recent years, wheat production appears to have run out of steam to sustain the growth performance of the past and resultantly has disturbed the system of country's food management. Though the production of wheat in 2005-06, estimated at 69.48 million tonnes (Fourth Advance Estimate as on 15.07.2006 of Directorate of Economics and Statistics), is 0.84 million tonnes higher than the output of 68.64 million tonnes achieved in 2004-05, it is nevertheless lower than the peak production of 76.37 million tonnes reached in 1999-2000. The crop condition during the rabi season was favourable till the month of January 2006; thereafter, it has passed through serious climatic aberrations. In February, the maximum and minimum temperatures remained unusually higher by about 4 to 6 degrees centigrade above normal. Subsequently, heavy rains and mild hailstorms damaged the early planted wheat crop, which was mature and ready for harvest. Apprehensions are that production estimate of wheat in 2005-06 would eventually turnout to be

lower than the Fourth Advance Estimate of 69.48 million tonnes, reflecting the perpetuation of domestic supply constraint in successive years. (Table 2.1)

2.4 The target for wheat production in 2005-06 was set at 75.53 million tonnes (19-9-2005) lower than the all time record production of 76.37 million tonnes in 1999-2000. While the subdued production performance of wheat was keeping the process of decision making for food management on its toes, this process itself was seriously constrained due to inconsistent assessment of crop size at different points of time. The Second Advance Estimate released by the Directorate of Economics and Statistics on 03-02-2006 placed wheat output at 73.06 million tonnes. The Third Advance Estimate of 05-05-2006 down scaled the assessment to 71.54 million tonnes. Similarly, the production estimate of wheat for 2004-05 was revised upward from 73.03 million tonnes in the Second Advance Estimate of 19-01-2005 to 74.05 million tonnes in 3rd Advance Estimate (23.3.05) and then scaled down to 72 million tonnes in the Fourth Advance Estimate of 06-07-2005 and ended up at 68.64 million tonnes in the Final Estimate released on 08-03-2006. The Final Estimate for 2004-05 was 7.2 per cent lower than the post harvest level anticipated in May, 2005. It is surprising that the wheat crop which is grown during rabi mostly under irrigated conditions and the methodology of conducting crop cutting experiments and estimating output have been well laid out, should face such large discrepancies. The deviation in production estimates is in the range of 5 to 5.5 million tonnes. Variations of such a large magnitude not only raise doubts on the reliability of government statistics, but also policy formulation based on these data become too conjectural. The Commission recommends that ***the Directorate of Economics and Statistics together with the State Governments should review the method of collection, tabulation and transmission of statistics on area, production and yield of crops, particularly of foodgrains for ensuing their reliability and timely availability.***

2.5 The important role of wheat in the food security of the country does not require to be emphasized and hence the growth in production and productivity of wheat has been one of the core agenda of agricultural development. However, its recent growth trends had been disappointing. The fitted annual rate of growth of wheat production was a healthy 3.67 per cent between 1985-86 and 1995-96, but slowed down to 0.67 per cent during the period 1995-96 to 2004-05. Thus, production growth rate in the latter period has fallen far below the rate of increase in population. What is particularly worrying is that the growth rate of yield has sharply decelerated from 2.61 per cent per annum from 1985-86 to 1995-96 to just 0.53 per cent in the period from 1995-96 to 2004-05. A smoothening of the time series data on area, production and yield of wheat, based on their three years moving average, shows negligible expansion of area and modest augmentation of production by 6.3 million tonnes with no significant increase in yield during the period 1995-96 to 2004-05. On the same basis, the absolute increase in average wheat yield from 1995-96 to 2004-05 was only 168 kg per hectare, whereas the corresponding increase from 1985-86 to 1995-96 was as high as 556 kgs per hectare. Since further expansion

of area of wheat is unlikely, the future growth of wheat production will essentially depend on stepping up of the rate of growth of yield.

(Table 2.2)

2.6 An examination of the yield profile across the major wheat growing States, in conjunction with their share in all-India acreage, brings out the constraints in stepping up yield substantially at the national level in the short to medium term. During 1995-96 to 2004-05, there has been deceleration in the growth of wheat yield in most of the states as compared to 1985-86 to 1995-96. In Punjab and Haryana, there is less scope for raising yields, since the yield levels in these states are very close to the yield potential possible with the existing technology. A disturbing phenomenon is the gradual decline in productivity of wheat in the past three years in these states. Punjab and Haryana together account for one fifth of the acreage under wheat and one third of the production in the country. To make significant impact on the production in these states, yield would need to rise steeply, which may be difficult to achieve. However, considerable scope for raising productivity exists in the states of Uttar Pradesh, Rajasthan, Bihar and Madhya Pradesh. Production in these states can be increased through location specific varietal development of seed, higher replacement rate as well as improved cultural practices, such as zero tillage, raised bed cultivation etc. apart from increased coverage of area under irrigation.

Table – 2 (A) : Yield Profile of Wheat

State	Average Yield T.E. 2004-05 Kg. per hectare	Yield Growth Rate		Percentage share in Acreage T.E. 2004-05	Percent Irrigated Area
		1985-86 to 1995-96	1995-96 to 2004-05		
1. Punjab	4209	2.07	0.76	13.18	97.81
2. Haryana	3963	2.70	0.74	8.83	99.12
3. U.P.	2601	2.41	0.43	36.39	91.59
4. M.P.	1659	4.04	-0.46	15.23	70.18
5. Rajasthan	2783	1.49	1.20	7.56	99.67
6. Bihar	1765	3.07	-2.61	8.23	87.33
All India	2642	2.61	0.56	100.00	88.20

2.7 Raising yield is also important for sustaining production profitable for both farmers and consumers. This is best illustrated by what happened in the past in Punjab and Haryana. When the yield was increasing rapidly, the increases in cost of production of wheat in these regions were much less than that in the overall price level. So, with no reduction in the margin of profit for farmers the real price of wheat to the consumers could be reduced. But with yield growth slowing down, the cost of production of wheat in Punjab and Haryana has been increasing and it is constraining the reduction in real price of wheat for the consumers. Further the assurance of purchase by public agencies in the past has led to the neglect of quality of the grain. Having reached this stage in Punjab and Haryana, efforts should be made to promote new varieties as existing varieties are showing signs of fatigue. The popular variety PBW-343 which covers 80 per cent of area in Punjab and 60 percent in Haryana is almost a decade old and has become susceptible to brown rust and yellow rust in Punjab. Newer varieties like PBW-502 and PBW-

509 have better resistance to rust and other diseases, as claimed by the research institutions, has not yet gained popularity amongst farmers.

2.8 Even with the existing average low yields, the country has been more or less self-sufficient in wheat in the recent past. However, the evident weakness in domestic supply in the past two years strongly suggests that this scenario may not be sustained. This is illustrated by the balance sheet of wheat which has been updated using the latest available data.

Table - 2(B)
Domestic Wheat Situation

	<i>(Million tonnes)</i>			
Crop Year (July-June)	2003-04	2004-05	2005-06	
Fiscal Year (April-March)	2004-05	2005-06	2006-07	
	Alternative Scenarios			
			I	II
1. Gross Production	72.16	68.64	69.48	69.48
2. Net Production (87.5 per cent of Gross Production)	63.14	60.06	60.80	62.53**
3. Procurement	16.80	14.79	9.22	9.22
4. Offtake ^c	18.27	17.16	12.00	12.00
(a) Export-Import Sale	1.98	1.00	-3.00	-3.00
(b) Open Sale (D)	0.24	1.05	0.50	0.50
5. Addition to Stock (3-4)	-1.47	-2.37	-2.78	-2.78
6. Supply (Gross) ^d [2-3+4-4(a)]or[2-5-4(a)]	62.63	61.43	66.58	68.31
7. Average Stock in excess of Buffer Norm* ^e	7.66	2.23@	-1.33	-1.33
8. Supply Potential (6+7) ^f	70.29	63.66	65.25	66.98
9. WPI (1993-94=100)	184.1	191.5	198.5#	198.5#
10. Consumption Demand ^g	61.44	62.60	63.79	63.79

* : This is defined as an average of actual stock minus an average of buffer norms at four points of time, namely, 1st April, 1st July, 1st October and 1st January. This is perceived by the market not as a dead stock, but as a source of potential supply, which tends to weigh down speculative Expectations about rising prices.

** : The Net Production : 90% of Gross Production

@ : Using buffer norms w.e.f. 29.3.2005

: UPTO May,2006

Source : Food Bulletin, DGCIS, FCI and DES.

- c. Offtake : Figures for 2004-05 and 2004-05 are rounded off actuals as reported by the Department of Food and Public Distribution. For 2006-07 offtake has been projected at 12 million tonnes. The Commission's projections are based on the offtake trends under different categories and feasibility of doing so.
- d. Supply : Defined as Net production (-) Procurement (+) Offtake (-) Export sale. It is assumed that export sales do not find its way back to the domestic market.
- e. Average stock in Excess of the Buffer norm : Defined as average of actual stock (-) average of buffer norms at four points of time, namely, 1st April, 1st July, 1st October and 1st January. This is perceived by the market not as a dead stock but as a source of potential supply, which tends to curb speculative expectation against prices moving up.
- f. Maximum supply perceived by the market : Defined as a sum of (d) and (e) above.
- g. Consumption demand : the consumption demand is derived as a product of average per capita consumption based on NSS 55th Survey on Consumer

Expenditure (1999-2000) and projected population. Details have been explained in Commission's Report for kharif crops of 2006-07.

2.9 The domestic wheat situation brings out that unlike in the past few years, when there was an excess supply of wheat in relation to its demand, the margin between supply and demand has disappeared. The demand situation for wheat and wheat products is likely to rise with a change in dietary habits and with greater urbanization. From 1993-94 onwards, the per capita consumption of wheat and wheat products in the urban areas has been rising faster than in the rural areas. In 2004-05, the per capita monthly consumption of wheat and wheat products stood at 4.67 kg per capita in urban areas compared to the per capita consumption of 4.25 kgs of wheat in rural areas, as brought by the data on household consumer expenditure 60th Round (January-June 2004) of NSSO. While wheat accounted for 46.56 per cent of total cereal consumption in urban areas, it constituted only 34.21 per cent of the same in rural areas. Along with urbanization, the change in diet in favour of wheat and wheat products in the consumption basket by including bread and biscuits and other processed wheat food items is likely to emerge stronger in the coming years. To meet the enhanced demand it is essential to ensure adequate supplies. For this to happen, renewed efforts to raise productivity and production of wheat are urgently required.

Table - 2(C)**Per Capita Consumption of Wheat in Rural and Urban Areas in 30 days**

(Kg)

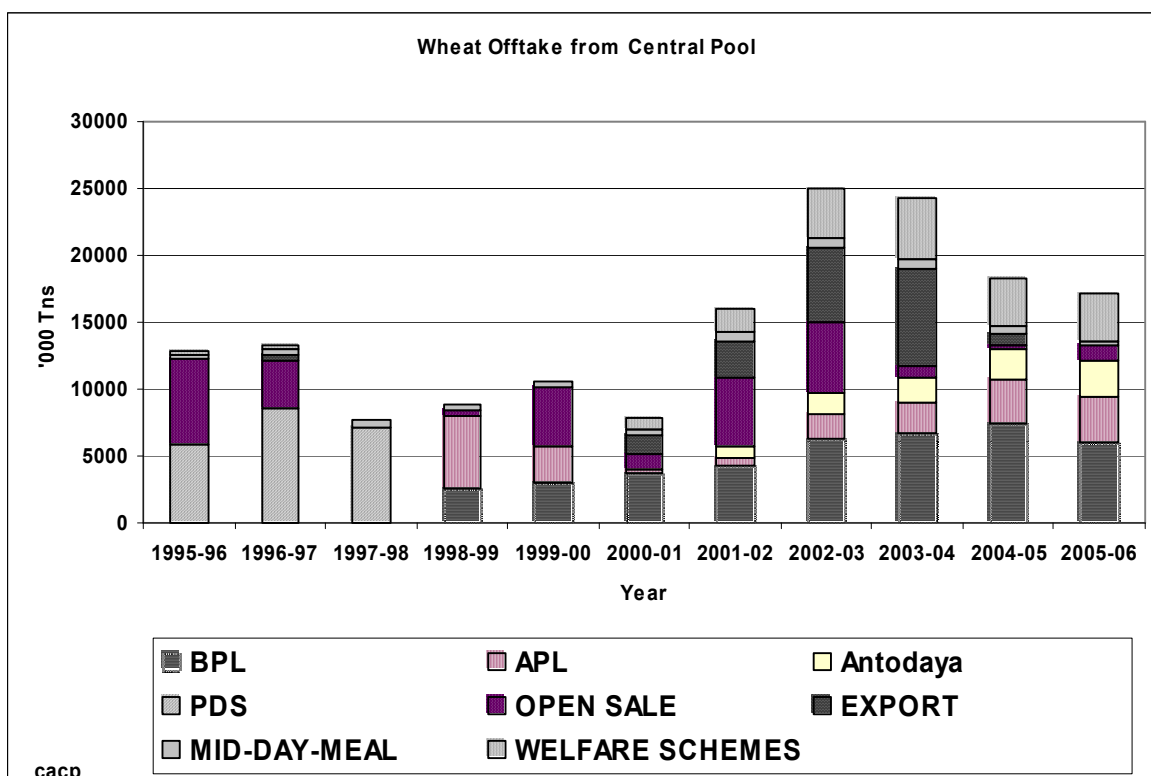
	43 rd Rd (July-June) 1987-88	50 th Rnd (July-June) 1993-94	55 th Rnd (July-June) 1999-00	56 th Rnd (July-June) 2000-01	57 th Rnd (July-June) 2001-02	58 th Rnd (July-Dec.) 2002-03	59 th Rnd (Jan-Dec.) 2003-04	60 th Rnd (Jan-June) 2004-05
Rural	4.48	4.32	4.45	4.59	4.12	4.34	4.22	4.25
Urban	4.37	4.44	4.45	4.57	4.51	4.59	4.59	4.67

Source : NSSO

2.10 The accentuating mis-match between demand and supply of wheat has culminated into a market scenario different from the past. The wheat market during the season 2005-06 was no longer a buyers' market. This transformation was also stimulated by certain modulations in policies made in recent years. The government has, from 2002-03 onwards, liberalized rules governing licensing, movement, stock limits and trade in grains so as to give a larger/bigger role to the private trade. This has also provided space to large corporate bodies and trading houses in the domestic wheat trade. The active involvement of corporate and private bodies has brought a perceptible change in the wheat market. The government needs to be vigilant on market dynamics in view of possible oligopolistic behaviour which can disrupt supplies virtue of the scale of their operations. In periods of plentiful supplies, the market may tend to depress resulting into low prices realization by the farmers. When demand oversteps supplies, the private trade may attempt to control supplies, as witnessed during the 2006-07 marketing season. Information on the low level of stocks of wheat with the government at the commencement of the procurement season was available in the public domain. The opening stock of wheat with the Government was 2.01 million tonnes on 1st April 2006, which was the lowest in the past three decades. The market possibly had sensed the dilution of the intervention role of the Government. The private trade by offering a premium over MSP purchased wheat to corner the supplies. During the field visit by members of the Commission to Punjab, Haryana, Rajasthan, Madhya Pradesh and Uttar Pradesh, it was generally reported that private trade was active in the market from the beginning of the season and bought their grain at prices slightly higher than the MSP announced. The margins above MSP offered for purchase of wheat was also not uniform across the regions and states. It was in relation to the gross price paid by the buyer which also included state taxes and levies. Due to high taxes and levies of the order of 11.5 percent in Punjab and 10.5 percent in Haryana, the price offered by the buyer was less attractive in these states. In Punjab, private trade was reportedly more active in Rajpura, Khanna mandis which are well connected by road and rail network. The FCI and state government opened 1475 procurement centres across Punjab. Farmers in interior areas of Punjab however continued to depend on public sector agencies to purchase their produce. Farmers also delayed bringing grain to the market on the expectation of getting higher prices. This is corroborated by lower arrivals across the state.

2.11 Despite the higher production as per official estimates, the all India market arrivals of wheat in 2006-07 marketing season at 13.7 million tonnes (20/6/06) was 2.3 million tonnes lower than in 2005-06 and 4.4 million tonnes lower than in 2004-05. Procurement as a percentage of arrival was 67.5 per cent compared to about 93 per cent in the previous years. Total procurement in 2006-07 has been much lower than previous year across the states. Procurement of wheat during 2006-2007 marketing season stood at 9.22 million tonnes (20-06-2006), 37 per cent less than the targeted procurement, 38.00 per cent lower than the procurement in the corresponding period of 2005-06, and the lowest level in the decade. As compared to the previous year, procurement in 2006-07 marketing season at 6.95 million tonnes was lower in the states of Punjab by 23 per cent, Haryana by 51 per cent at 2.23 million tonnes, and Uttar Pradesh by 92 per cent at 0.04 million tonnes. In Rajasthan, Madhya Pradesh and Uttaranchal the procurement was negligible.

2.12 Though the weakness in domestic production in recent years had constrained the accretion to wheat stocks in central pool, the variation in supply from production due to climatic aberrations is not unprecedented for food management. The food management system should have mechanism in place to adjust to such eventualities. Rather, it modulated its offtake pattern to adjust the historic peak average stock level of 32.9 million tonnes of wheat in 2002-03. As a result, the stock levels had been gradually depleting against low accretion. In 2005-06, for the fourth consecutive year, the offtake of foodgrains continued to be higher than accretion.



2.13 Ever since 2002-03 when foodgrains, particularly wheat, was liberally released in the wake of mounted stocks and for drought relief (chart I), offtake remained higher than accretion. The increased allocation for BPL, Antyodaya and for various employment and welfare schemes besides releases for exports till 2004-05 accounted for the higher offtake. The offtake of foodgrains during 2005-06 was 42.0 million tonnes as compared to 41.5 million tonnes in the previous year. Of the total foodgrain offtake of 42.0 million tonnes in 2005-06, the offtake of wheat was 17.2 million tonnes compared to 18.3 million tonnes in 2004-05. From this wheat offtake, 12.2 million tonnes was distributed through TPDS and 5.0 million tonnes under various welfare schemes. Similarly, of the offtake of 24.82 million tonnes of rice in 2005-06, 18.97 million tonnes was distributed under TPDS and 5.8 million tonnes under welfare schemes. Over the years the number of schemes have multiplied and correspondingly offtake has increased during 2002-03. The total foodgrain stock with public agencies at that time which exceeded the undesired level of 60 million tonnes was a source of comfort. This trend needed to be adjusted when stocks have started depleting. Since TPDS more or less ensures food security at the house hold level, the time has become ripe to re-examine the need for as many as nine welfare schemes to cater to the same needs. Many schemes overlap and most of them target the same BPL households. It may be recalled that during the nineties, offtake remained at about 11 million tonnes annually. In view of the diminished stocks, the offtake has been assumed at 12 million tonnes for 2006-07 for evaluating the domestic wheat situation (Table 2-B) for rational balancing of the demand with constrained supplies. (Table 2.12)

2.14 Stocks are maintained by the Government to meet the prescribed minimum buffer stock requirement for food security and for the monthly releases of food grains for public distribution system and for welfare schemes. Stocks are also maintained to meet emergency situations such as crop failures, natural disasters and market intervention to keep prices stable in the open market. The stocks of rice and wheat held by FCI on 1st April 2006 stood at 15.69 million tonnes comprising 13.68 million tonnes of rice and 2.01 million tonnes of wheat. While the stock of rice was higher than the buffer norm (for the month of April) of 12.2 million tonnes, that of wheat was lower than the norm of 4 million tonnes by 1.99 million tonnes. Had the government restricted the offtake of wheat during 2005-06 for APL and open sale as against 3.5 million tonnes and about one_million tonne respectively taking note of less than target procurement of wheat during 2005-06 marketing season, it would have been less disturbed with a reasonably comfortable opening stock of 6 million tonnes on 1st April, 2006. (Table 2.11)

2.15 In view of the rapid depletion of stocks and rising prices, the government has decided to import wheat. This was a sea-change from the situation during 2001-02 to 2004-05, when the country exported 12.4 million tonnes of wheat. In February 2006, the government asked the State Trading Corporation (STC) to undertake imports of wheat. The STC floated a tender for purchase of 5 lakh tonnes of wheat. Only a single supplier could qualify due to strict quality

specifications in the tender. In May 2006, the quality parameters were relaxed and in June 2006, it was decided to permit private parties to import wheat. The Government has also reduced the tariffs on wheat to facilitate liberal imports by private traders. These flexible options are expected to ease the supply constraints witnessed in the marketing year 2006-07.

The position with regard to procurement, distribution and stocks of wheat and rice is given in Table 2 (D)

Table 2 (D) : Procurement, Offtake and Stocks (Central Pool)

Fiscal Year	Wheat				Rice				
	(Lakh tonnes)								
	2003-04	2004-05	2005-06	2006-07	2003-04	2004-05	2005-06	2006-07	
1. Opening Stock	156.45	69.31	40.66	20.09	\$ 171.57	130.69	133.41	136.75	\$
2. Procurement	158.02	167.96	147.87	92.23	228.28	246.84	265.50#	246.00	
3. Import	-	-	-	3.00	-	-	-	-	
4. Offtake[(a) to (f)]	242.93	182.71	171.64	120.00	250.39	232.05	248.15	220.00@	
a.BPL	67.74	74.23	59.62	59.62	* 90.30	100.29	96.01	90.30	*
b.APL	22.51	33.44	35.03	0.00	19.74	33.85	46.74	0.00	
c.Antyodaya	17.83	22.64	27.26	17.83	* 23.82	32.07	46.94	23.82	*
d.Other welfare	53.40	41.24	39.23	23.79	81.61	64.86	58.25	48.06	
e.Open Sale	9.26	2.39	10.50	5.00	4.05	0.08	0.21	0.15	**
f.Export	72.20	8.76	0.00		30.88	0.90	0.00	0.00	
5.Carry over stock (1+2+3-4)	71.54	54.56	16.89	-4.68	149.46	145.48	150.76	162.75	

\$: As on 1st April,2006

: As on 30th June,2006

* : As minimum of last three years

** : Average of last two years

@ : 57.67 lakh tones surplus will became available after discounting allocation for APL

Source :- Foodgrains Bulletin, May,2006 and Commission's estimate for 2006-07
Ministry of Consumer Affairs, Deptt. of Food & Public Distribution

2.16 The wheat balance sheet is also helpful in understanding the factors leading to the surge in prices from November 2005. In 2003-04, the index number of wholesale prices for wheat for the year averaged 181.4 (Base 1993-94=100) which was higher by 3.2 per cent than in the previous year of drought. In 2004-05 the prices remained stable and the index moved up only marginally by about 1.5 per cent. In 2005-06 the price index for wheat went up by 4.0 per cent to 191.5, In line with the overall inflation of 4.4 per cent for the year. The early signal of abnormal market behaviour was available in January-February, 2006, when WPI jumped to 205.5 and 209.5, about 9 to 11 per cent higher than the indices for the corresponding months of previous years. During April and May 2006, inspite of a seasonal wavering in prices, the index stood firm at 197.9 and 199 respectively, which is about 10 per cent higher than the indices for the corresponding months of the previous year. In the coming months of the year, the prices may remain stable at that level in view of the replenishment of supplies through imports and also through recharge of supplies to the market by private traders.

(Table 2.23)

2.17 The government announced the MSP for wheat of Rs.650 per quintal on 29th

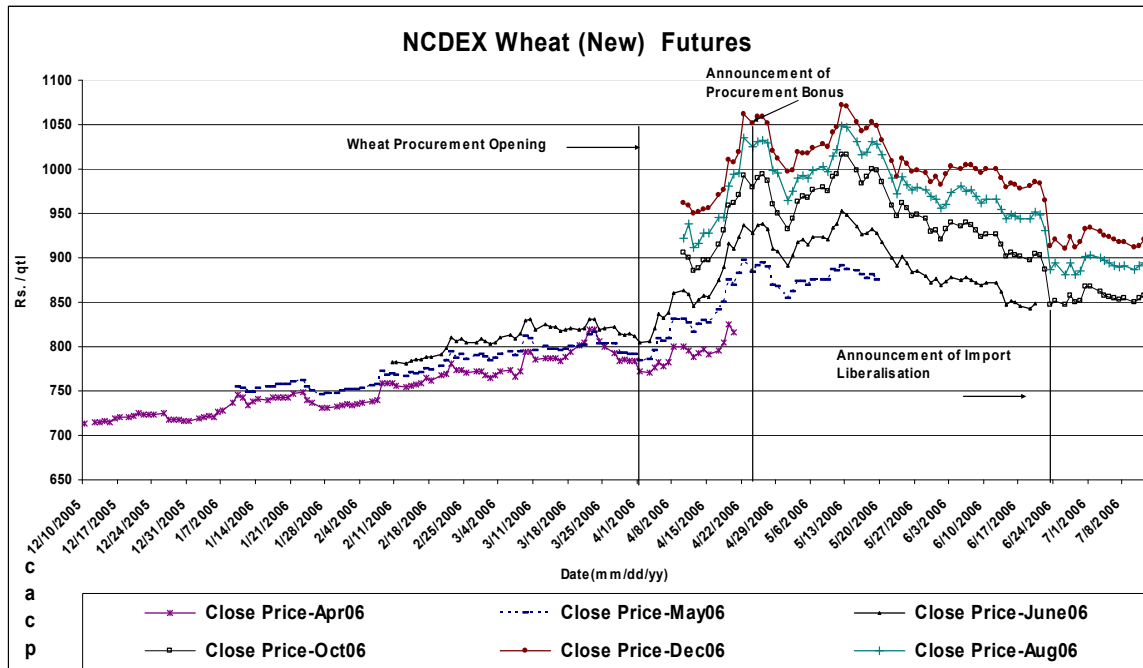
September 2005. The wheat marketing season commences on 20th March in the states of Madhya Pradesh and Rajasthan and on 1st April in the remaining states. Since the market price ruled well above the MSP and the flow of wheat to the public procurement was subdued, the government on 21st April 2006, well after the marketing season had begun, announced an incentive bonus of Rs.50 per quintal payable over the MSP of Rs.650 per quintal, in case state governments exempt it from state tax and levies. The late announcement of bonus deprived many farmers, particularly small farmers, who had sold their crop to private traders as soon as it was harvested. (Table 2.9)

2.18 Except in Punjab, the month end wholesale prices ruled much above the MSP plus bonus prices of Rs.700 per quintal. In Amritsar (Punjab) whole sale price of wheat was quoted at Rs.680-738 in April-May 2006. Wheat prices were quoted at Rs.745-750 in Karnal (Haryana). In Hapur (Uttar Pradesh) prices were quoted at Rs.770-790 per quintal and in Jaipur (Rajasthan) at Rs.840-845 per quintal. Prices crossed Rs.1000 per quintal at Rs.1300 per quintal in Basoda (Madhya Pradesh), at Rs.1050 per quintal in Dharward (Karnataka) and Rs.1247 per quintal in Jalgaon (Mahaashtra). (Table 2.14)

2.19 The retail price of wheat in 2006 was substantially higher than that in 2005 inspite of government maintaining supplies. In April-May 2006 (as compared to the prices for April-May 2005 given in parentheses), retail price of wheat per kilogram was quoted at Rs.10 (Rs. 7.50 to 9.00) in Lucknow, Rs. 10.00 (Rs.9.50) in Delhi, Rs. 13.50 (Rs.11.00) in Mumbai, Rs. 16.00 to 16.50 (Rs.13.00 to16.00) in Trivandrum and Rs.13.50 (Rs.11.00) in Chennai.

2.20 The excessive heat in the wheat market was also reflected in the trends of futures, both in terms of volatility of contract prices as well as volumes. The price discovery for the month of April 2006 on National Commodity and Derivative Exchange (NCDEX) for wheat (new) at Delhi Market commenced on 10th December, 2005 with the closing price of Rs.712 per quintal. The subsequent quotes maintained gradual upward movement (see chart) but sentiments firmed up in first fortnight of March, possibly sensing the vulnerability of crop size due to high temperature and concern of the Government to imports at certain price. However, the behaviour of the spot market and that of the futures took volatile turn in first week of the April. The spot prices in most of the markets ruled well above MSP of Rs 650 per quintal. In Delhi wholesale market, the modal price of wheat was Rs.800 per quintal. While the state procurement was modest, the reports of proactive market penetration of private and corporate plays kept the market sentiments upbeat. The April futures were left with short residual contract time but the average daily volume was almost ten times higher than the average till March 2006. The closing prices of futures gained about Rs. 50 per quintal, equivalent to the procurement price incentive offered by the Government by mid April. Spots moved in tandem across the regions. The speculative behaviour of futures was reflected by the Rs 100 per quintal steep fall in the contracted prices in later June 2006, in response to feedback of proactive policy intervention by the government to

liberalize wheat imports to stabilize the prices. Futures for October 2006 has moderated to about Rs 850 per quintal, lower than the futures for August 2006. This trend of futures is contrary to the conventional seasonally of wheat prices, that used to witness off season buoyancy. The futures for December 2006, quoted in mid July 2006 at about Rs 930 per quintal are about Rs 100 per quintal higher than the spot of December 2005.



2.21 The mounting food subsidies and criticism of its operational inefficiencies has forced FCI to explore ways to earn more revenue. While earning higher revenues is desirable, the end result of their activities should be considered. During the year 2005-06, the FCI has earned about Rs.6.11 crores by hiring out storage capacity of 5.29 lakh tonnes. Similarly in Uttar Pradesh, State Ware Housing Corporation hired out storage capacity to private parties to store wheat. Private parties made use of public sector facilities to further their gain which may not have been in social interest.

2.22 According to FAO (Food Outlook No.1, June 2006) wheat trade in 2006-07 marketing season (July –June) is forecast at 110 million tonnes and India is expected to purchase 3.5 million tonnes. Among exporters Argentina, Australia, Canada, EU are likely to increase their market share. There is likely to be a decline in exports from Bulgaria, Russian Federation and Ukraine. Tighter supplies in the US may curb exports from that country. According to World Bank wheat prices have been climbing up from November 2005 onwards. In November, wheat US(HRW) was quoted at 161.1 dollars per tonne and by May prices had risen to 193.2 dollars per tonne. In mid - May 2006, the United States wheat futures has climbed to two year high. Futures for September delivery at the Chicago Board of Trade (CBOT) were quoted above US \$ 150 per tonne, more than 30 per cent higher than in the corresponding period last year. Several factors

were behind rising wheat futures, including worries about the winter crop conditions in the United States, prospects for a much tighter balance in 2006-07, driven by smaller world production and stocks, and also spill over buying by index type funds following the strong surge in metals and energy markets.

2.23 In this scenario, Indian imports will be constrained by tight supplies and rising prices. A number of shortcomings in the price support / procurement system which has surfaced in recent years need immediate correction. First and foremost, MSP should be announced well before the sowing season so that the farmers know in advance the guaranteed price for different crops and plan accordingly. The Commission has time and again emphasized the need for timely announcement of MSP. The situation in this respect improved during 2005-06 marketing season. For example, the Commission submitted its Rabi Report for 2005-06 to be marketed in 2006-07 season on 8.6.2005. The Government announced the price on 29.9.2005 which was well in time for sowing. Timely announcement allows the farmers time for making important decision and also enhances government's ability to influence their decisions on crop pattern adjustments. The government on 24th April 2006, much after the marketing season had started announced an incentive bonus of Rs.50 per quintal for procurement of wheat over the MSP of Rs.650 per quintal. As stated earlier, many farmers, who sold their produce immediately after harvest, could not benefit from the bonus. Secondly, the dual objectives of food management system on one hand to safeguard the interest of farmers, in the wake of supply pressure of peak marketing season, by triggering MSP operation and, on the other, to build adequate stocks for food security and maintaining welfare schemes - need to be addressed appropriately in different market situations. Since the wheat market traditionally has remained buyer's market, the stock building had been a corollary to MSP intervention. When the market turns into a seller's one, the price support operation is not warranted. In such a situation procurement by state agencies may have to take into account prevalent market situation. Thirdly, the non - price issues should be pursued vigorously to improve productivity, enhance farm efficiency and upgrade quality. Fourthly, excessive fiscal levies on MSP purchases in some states should be rationalized, so that levies and prices are uniform across regions. Besides, some states tax the produce brought from neighbouring states resulting in double taxation. Fifthly, there should be wider awareness amongst farmers on quality norms for public procurement and procedures for quality checks should be realistic and transparent. Sixthly, the offtake mechanism and PDS itself needs to be reformed so that requirement is properly assessed and leakages are plugged. Finally, the implementation of MSP should be broad based, rather than allowing it to remain confined to a few states. These conditions are to be followed irrespective of the aberrations that were witnessed in 2006-07.

2.24 The scenario of wheat economy in the season 2005-06 has not only exposed the vulnerability of much acclaimed sustainable food security of the country, it had dislocated the price stability of this essential item of mass consumption in the country. It has also demolished

the premise articulated by several thinkers that India's healthy foreign exchange reserves is a guarantee for the nation's food security. India's import order at historic peak is capable of disturbing international price stability. The Commission, therefore, recommends that ***there should be a comprehensive review of wheat production situation in various regions by the government for evolving short term and medium term strategies for raising wheat production to meet the growing demand.***

BARLEY

2.25 According to Fourth Advance Estimates of crop production (15.07.2006) released by the Directorate of Economics & Statistics, rabi foodgrains output is reported to be 98.60 million tonnes in 2005-06 and the production of barley, a minor constituent of rabi foodgrains would be of 1.18 million tonnes. This performance is in line with the long term trend of decline in the production of barley. Production has been declining steadily from 1.68 million tonnes in 1997-98 to 1.41 million tonnes in 2002-03 and further to 1.18 million tonnes in 2005-06. (Table 2.1)

2.26 Barley is grown mainly in Uttar Pradesh and Rajasthan, which together account for around 66 per cent of total area and production in the country. The other states where barley is cultivated on a large scale are Madhya Pradesh, Haryana, Punjab, Bihar and Himachal Pradesh. The crop has been experiencing decline in both area and production in every major state mainly due to its gradual elimination as an item of direct household consumption.

2.27 Barley steeply lost area at about 4.6 per cent per annum in the period 1985-86 to 1995-96. This deceleration had, however, slowed down to 2.6 per cent in the period from 1995-96 to 2004-05. Consequently, the production of barley declined at the rate of 1.6 per cent per annum in the period for 1985-86 to 1995-96 and at 1.7 per cent per annum in the period 1995-96 to 2004-05. The ICAR and its affiliated institutions have developed a number of high yielding varieties of barley, suitable for the malt and brew industry. Annually about 25 varieties are taken up for breeder seed production to fulfill the demand of various indenters through the Department of Agriculture and Cooperation. As a consequence, the yield of barley has witnessed increase from 1335 kgs in TE 1985-86 to 1814 kgs in TE 1995-96 and to 1981 kgs per hectare in TE 2004-05. The yield potential of many of these varieties is however much higher at 3500 to 4000 kgs per hectare under irrigated conditions and 3000 to 3500 kgs per hectare in the plains. The yield growth, which was impressive at over 3.1 per cent per annum in the period 1985-86 to 1995-96, has decelerated to 0.98 per cent per annum during 1995-96 to 2004-05. This calls for a renewed thrust in boosting the yield of barley. Since this crop is now catering to the raw material needs of the malt and beverage industry in increasing quantities, and is likely to do so in future, an all round cooperation of the private industrial sector should be enlisted for mutual benefits of both the cultivators and the industry.

(Table 2.2)

2.28 Barley is consumed as foodgrain, feed and an intermediate product mainly as malt in the drinks and beverage industry, but detailed statistics on its diversified usages are not available. Based on NSS 55th Round (1999-2000), the Commission has estimated the household consumption to be about 0.5 million tonnes as compared to a production level of around 1.2 million tonnes. The balance goes to manufacture of beer and other industrial uses, apart from seed and animal feed. In recent years, there has been excess production and supply of barely vis-à-vis demand. During 2003-04, the index number of wholesale price (WPI base 1993-94=100), of barley declined by 7.4 per cent over 2002-03. Subsequently prices have risen in sympathy with other cereals. Prices rose 5.9 per cent and 8.9 per cent in 2004-05 and 2005-06 respectively. The WPI for barley in March 2006 stood at 209.9 compared to 199.3 in March 2005, i.e. higher by 5.3 per cent. With the arrival of the new crop in April 2006 the price index softened to 204.3 but subsequently rose again to 215.7 in May 2006.

(Table 2.23)

2.29 In some earlier reports, the Commission had reported that the open market prices of barley in major producing states generally ruled above the MSP and that this obviated the need for any price support operations. The situation has changed from 2001-02 marketing season, since demand has remained restrained. Neither FCI nor the State agencies have intervened to provide price support to this crop as mentioned in the last four rabi reports. However, keeping with the general increase in cereal prices, open market prices of barley in many markets of the country ruled much higher than the MSP of Rs.550 per quintal during 2006-07 marketing season. At Jaipur (Rajasthan) price of barley was quoted at Rs.725-800 per quintal and at Hathras (Uttar Pradesh) Rs.730-747 per quintal in April-May 2006.

2.30 India is a marginal player in the world barley scenario with less than 2 per cent share in production and acreage. The volume of world trade of barely is quite sizeable at around 17 million tonnes (FAO Food Out Look No.1 June 2006). Although, global price quotes on barely is not available, traded prices of barley cannot be much different than those of maize or sorghum. In May 2006, the United States Maize Export Price (US No.2 yellow) averaged US\$111 per tonne, higher by US\$17 from the last year. The FAO Food Out Look No.1, June 2006 expects coarse grains prices generally to firm up during the remaining part of the year. India's presence in coarse grains trade so far has been negligible.

Rabi Pulses

2.31 India is the world's largest pulse producer, consumer and importer accounting for 27 per cent of the global pulse production. However, stagnant production has led to declining per capita consumption over the past 20 years. The per capita availability has progressively declined from about 61 gms. in 1951 to about 35 gms. at present. The burgeoning demand-supply gap has led the Government of India to ease the norms related to importing of pulses.

2.32 In India, pulses are grown on 22-24 million hectares area with an annual production of 13-15 million tonnes and per hectare yield of 600-635 kg. Pulses account for around 19 per cent of the gross cropped area and less than 8 per cent of the total foodgrains production of the country. The major pulses grown in India are Pigeon peas (Arhar) and chickpeas (Gram or Desi Chana). Their share in the total pulses production is about 18 and 41 per cent respectively. Important Pulse Markets in India are Mumbai, Delhi, Chennai, Indore, Kanpur, Bikaner, Hapur, Hyderabad, Jaipur, Jalandhar, Ludiana, Sangrur. India's total pulse production hovers at an average of 12-14 millions tonnes in a crop year. The production follows the trend displayed by all agricultural crops peaking on a normal monsoon year and dropping when the rains fail. While India produced only 13.13 million tonnes of pulses in 2004-05, the Fourth Advance Estimates of the Government of India predict that the 2005-06 crop will be about 13.11 million tonnes.

(Table 2.1)

2.33 The state of Madhya Pradesh is the largest pulse producer, accounting for about 26 per cent of total production in 2004-05. Other states with significant output include Uttar Pradesh (18 per cent), Maharashtra (13 per cent), Rajasthan (10 per cent), Andhra Pradesh (8 per cent), Karnataka (6 per cent), and Bihar (4 per cent). In India pulses are grown in the two major cropping seasons, viz., kharif (harvested in Sept./Oct) and rabi (harvested in March/April) The major kharif pulses are Green Gram (moong), Black Gram (Urad), Pigeon Pea (Arhar/Tur) and Cow Peas (Lobhia). The major rabi Pulses are Gram, Green peas and Lentils. Among the different pulses grown in the country, the respective share of production has been: chickpea (bengal gram / chana) 40.50 per cent; pigeon pea (tur /arhar) 17.90 per cent; green gram (moong) 9.20 per cent; black gram (urad) 9.10 per cent; lentils (masur) 6.10 per cent and other minor pulses 17.20 per cent.

Table below gives the trend in area, production and yield of pulses in India with seasonal break-ups.

Table 2 (E) : Pulses: Area, Production and Yield as per Cropping Seasons

I. AREA UNDER PULSES ('000 Hectares)	1980-81	1990-91	2000-01	2003-04	2004-05
Total Area	22457	24662	20348	23458	22763
Kharif	10420	11489	10658	11683	11317
Rabi	12037	13173	9690	11775	11446
II. PRODUCTION OF PULSES ('000 Tonnes)					
Total Production	10627	14265	11076	14905	13130
Kharif	3760	5415	4448	6165	4717
Rabi	6867	8851	6627	8741	8412
III. YIELD OF PULSES (Kg per hectare)					
Overall Yield	473	578	544	635	577
kharif	361	471	417	528	417
Rabi	571	672	684	742	735

2.34 As would be seen from the above table, the area under kharif pulses has been about 46-52 percent of total area under pulses, compared with about 48-54 percent under Rabi pulses crop. However, the share of production of pulses under Rabi crop has been significantly higher at 59-65 percent, reflecting realization of higher yield of about 570-740 kg./ha in Rabi than the yield of about 360-530 kg./ha in kharif.

Gram

2.35 Gram has been the major Rabi pulse crop in India. Gram was cultivated in about 59 per cent (6.72 million hectares) of the total area under rabi pulse cultivation in 2004-05. Similarly, production of gram at about 5.47 million tonnes in 2004-05 accounts for about 65 per cent of the total rabi pulses. In terms of yield, gram occupies a prominent place. The yield of 815 kg / ha in 2004-05 was about 11 per cent higher than the average yield of all rabi pulses in 2004-05.

(Table 2.1)

2.36 Gram is predominantly grown in Madhya Pradesh. In 2004-05, Madhya Pradesh alone accounted for 41 per cent of the total area under gram and about 47 per cent of the corresponding production. The other major states producing gram are: Rajasthan (with 15.4 per cent of area and 14.1 per cent of production), Maharashtra (with 12.4 per cent of the area and 8.5 per cent of the production), and Uttar Pradesh (with 11 per cent of the area and 12.3 per cent of the production). Among these states, Madhya Pradesh is the front runner in terms of higher yield with 928 kg / ha, followed by Uttar Pradesh with 910 kg / ha.

2.37 Imports of Gram (chickpeas) during 2004-05 were of the order of 0.13 million tones, valued at Rs. 223 crore. During the first six months of 2005-06, imports of gram witnessed buoyancy at 0.145 million tonnes, valued at Rs. 269 crore. Export of gram during 2004-05 and 2005-06 were only marginal. The prices in the domestic market fluctuate according to the domestic and international demand and supply scenario. Generally, the prices drop when the new crop comes in the market. The analysis of the last five years price trend of gram at Indore reveal that the prices are on an increasing trend from June to September, while it starts falling from November, with the lowest prices being reported in March and April, when the new crop arrives in the market.

2.38 Indian pulse market is very price sensitive. There is a great deal of substitutability between pulse crops. If pigeon peas are high priced, more yellow peas will be consumed. If desi chickpeas are low priced, more chickpeas will be consumed. This dynamic pulse consumption pattern combined with the large and sometimes variable domestic production makes Indian market demand difficult to predict on a year-to-year basis.

Masur (Lentil)

2.39 Masur (Lentil) is a rabi crop and is mainly cultivated in Uttar Pradesh, Madhya Pradesh and Bihar and to a small extent in West Bengal, Rajasthan, Haryana, Punjab and Assam. It is grown on an area of about 14 lakh hectares and its annual output is about 8-11 lakh tonnes. It is cultivated on light loams and alluvial soils in north India and in well-drained light black soils in Madhya Pradesh. In Madhya Pradesh, it is cultivated in Sagar, Jabalpur, Bundelkhand and Bhopal, in Uttar Pradesh in Kanpur and in Rajasthan in Kota. It is sown during Oct-Dec. If sown late, one more irrigation may be necessary. The crop matures in about 105 days and is harvested during Feb.-March with peak arrivals during April. It is harvested before it is very ripe and dried for a week before threshing. The unripe pod is used

as a green vegetable and dry leaves, stalks, husk, broken grains as cattle feed.

2.40 Masur is probably the oldest of grain legumes to be domesticated. Lentil is a nutritious food legume. It is cultivated for its seed and mostly eaten as dal. Dal is seed that is decorticated and split. They are an excellent source of complex carbohydrates and are high in fiber and in protein. Lentils are a cool season crop with a restricted root system that is only moderately resistant to high temperatures and drought. Lentils have proven to be invaluable in crop rotation, helping to control weeds, diseases and insects, as well as improving soil texture and fertility. Globally around 40 lakh tons of masur (lentil) is produced per year. India, Canada and Turkey are the major producers of lentils in the world. India is the largest producer with a share above 25 per cent of the total global production.

2.41 Though India is the largest producer, Canada is the largest exporter of lentil with a 50 per cent share of the export market. The other important exporters are the USA, Australia and Turkey. India exported about 1.45 lakh tonnes of masur dal and imported around 0.27 lakh tonnes of masur in the year 2004-05. While exports are mainly to Sri Lanka, Egypt, UAE, Sudan, Yemen and Bangladesh, imports are from Canada, Australia, Turkey and USA. Table below gives India's exports and imports of Lentils.

Table 2 (F) : India's Exports and Imports of Lentils

Quantity: In '000 tonnes

Value : In Rs.Crore

Unit Value: In Rs. Per Kg

	<u>Exports</u>			<u>Imports</u>		
	Quantity	Value	Unit Value	Quantity	Value	Unit Value
2001-02	106.11	230.78	21.75	86.97	141.02	16.21
2002-03	88.40	195.02	22.57	66.98	111.46	16.64
2003-04	83.05	174.51	21.01	37.95	74.45	19.62
2004-05	145.19	314.98	21.70	26.69	55.31	20.72
2005-06	155.78	355.78	22.84	12.16	24.55	20.19
(April-Sept.)						
2004-05	70.67	153.61	21.74	13.01	26.96	20.72
(Apr-Sept.)						

2.42 Masur prices display seasonality with the prices generally low during March to July, when the new crop arrives in the market. The production highly fluctuates between years, depending on the rains received and the moisture availability in the soil. The

sentiments of traders play a significant role currently, as a consequence of the lack of free-flow of information. There is high substitutability between pulses in India among the consumers. So, price of other major pulses like chana, tur, yellow peas, green peas etc also influence the prices of masur. Besides this, production of the other leading exporting countries like Turkey, Canada, USA and Australia also influence the prices to great extent. Besides, the market intermediaries in India play a key role in marketing of pulses from producers to final consumers, resulting in significant mark-up of prices at each stage.

2.43 Global pulse trade has expanded rapidly in the last twenty years. However, the trade history is somewhat volatile due to supply and demand variability. Trade patterns have also shifted during this time period. Former exporters (like Chile as a lentil exporter) have disappeared and new exporters have appeared. The next twenty-year period is likely to see these types of changes continue as Canada puts pressure on the supply side. The factors like high daily and monthly price volatility, high dependence on international prices due to large imports, no substantial Government control, no trade monopoly, large shelf-life requiring storage and dispersed consumption in all parts of the country make masur suitable for futures trading.

Imports of Pulses

2.44 India's imports of pulses has historically been on the increase, especially since 2001-02, when they peaked 2.23 million tonnes from just 0.35 million tonnes in the previous year. The value of imports also has increased from Rs.500 crore to Rs.3164 crore. India's imports of pulses are governed by the government's policy to control domestic inflationary pressures arising from shortages of essential items like pulses. The Government of India has allowed unrestricted import of pulses with low duties for more than two decades now. The stagnation in production, the importance of pulse as a source of protein in the Indian diets and the fall in per capita availability has been the reasons for this move. However, despite the unrestricted imports and low tariffs, imports relatively accounted for a smaller share of supply and consumption in the 1990's. Since the 2000's though the imports have been increasing. Peas, chickpeas, dried beans, and tur are the major pulses that are being imported into the country. Peas are the most heavily imported pulse into India. In 2004-05, peas accounted for about 40 per cent of India's total pulse imports in value. India imports peas in dried and shelled form and also in frozen form as a vegetable. Canada, Australia, Myanmar are the major countries importing peas to India. France has also turned into a major importer in the recent years. Tur stands second as the most imported pulse after peas. In availability too, it stands second after gram 0.24 million tonnes of tur was imported into India in 2004-05 at a value of Rs. 364 crore. Myanmar accounts for more than 90 per cent of India's imports. Moong was also important from the point of view of imports and consumption till 2002-03. India's, moong imports touched 0.26 million tonns in 2002-03, valued at Rs. 465 crore. Myanmar, China, Pakistan, Iran, Canada and Australia are the major countries exporting moong to India. Since 2003-04, there has been no imports of moong. Chickpeas accounted for about 10 per cent of the total pulse imports in 2004-05. The imports in 2004-05 amounted to 0.13 million tonnes valued at Rs. 233 crore. Canada, Iran, Myanmar, Turkey, France, Australia are the major exporters of pulses to India. However, imports of smaller quantities from other countries too

contribute to around 18 per cent of the total imports. India's urad imports had been on an increasing path during the five years ended 2002-03. In 2002-03, India's urad imports totaled, 0.035 million tonnes, valued Rs. 54 crore. Myanmar is the major country, from where India imported most of her urad requirements. This country accounted for more than 95 per cent of India's urad imports. Like moong, there has been no import of Urad since 2003-04.

(Table 2.30)

International scenario

2.45 Total volume of world pulse production has almost increased by half during the past 25 years (1980-2004), surpassing for the first time in history the 60 million tonnes line to a level of 61.4 million tonnes in 2004. In 2005, the global production of pulses has broadly been sustained at 60.7 million tonnes. Although global production showed an overall upward trend over this period, there was a variation in growth. While it grew relatively fast between 1980 and 1990 (3.6 per cent p.a.), production stayed almost stagnant afterwards. Growth in the 1980s was driven by the developed countries, expanding their output by 8 per cent annually from 10.7 million tonnes in 1980 to 20.8 million tonnes in 1990.

2.46 Further analysis shows that production growth in the developed countries over the period 1980-2004 would have been much higher had it not been for the declines in the transition economies. Aggregate pulse production in these countries contracted by 12 per cent annually during the 1990s, in line with the general trend in their agricultural production following the reforms in their economies. The data shows that industrialized countries have doubled their share in world pulse production, up from 13 per cent in 1980-82 to 26 per cent in 2002-2004.

2.47 The fast growth of pulse production in the developed relative to the developing countries, as a whole, can be partly explained by the large yield differential between the two country groups. While yields in the developed countries grew by 2 per cent annually during 1980-2004, yield growth in the developing countries was substantially smaller (0.4 per cent p.a.). As a result, the yield gap between the two country groups has widened, rising from 0.5 tonne/ha in 1980-82 to 1.1 tonne/ha in 2002-2004. The lagging of pulse productivity in developing countries can be explained by several factors, including: (i) production in the developing countries is largely of subsistence nature, while in developed countries it is commercial; (ii) lack of investment because pulse cultivation is generally a small-scale activity that is not viewed as a sector capable of generating economic returns; (iii) the expansion of irrigated land has pushed pulses into marginal zones with the better land used to grow cereals; (iv) an agricultural policy focussing on cereals for food security purposes and (v) limited research and lack of technology and improved-cultivar availability to farmers.

2.48 Per capita consumption of pulses in the developing countries stagnated overall and registered drastic declines in some regions, especially in Asia and sub-Saharan Africa. These trends reflect changing dietary patterns and consumer preferences but, in several countries, also

the failure of domestic production to keep pace with population growth. Often this was the result of government preference for increasing production and self-sufficiency in cereals. As a result, per capita pulse production, reflecting availability from domestic sources, has declined. Simple analysis shows that pulse consumption in the developing countries follows very closely movements in domestic production.

2.49 In the industrialized countries, by contrast, per capita food consumption of pulses has increased. A plausible explanation for this is the increased consumer awareness about the health benefits of dry legumes. High levels of animal protein in the diets of industrialized countries stimulated consumers to look for alternative sources, and with good levels of protein and fibre, along with low fat content, pulses represented an excellent alternative.

2.50 Developing countries have often met their growing pulse requirements through increased imports, reflected in a growing overall trade deficit. A large portion of this, however, was due to larger imports by India, the world's largest producer and consumer of pulses. Rising disposable incomes in India, especially among the poorer segments of the population, are spurring demand. Another important market is the Near East/North Africa region, where imports are sustained by population growth.

2.51 Global trade in pulses in 2001-2003 averaged about 9 million tonnes per year, with a total value of some US\$ 3 billion. Trade in pulses grew rapidly between 1980 and 2003 (5 per cent p.a.), much faster than output, as a result the proportion of pulse production that gets traded increased significantly from 7 per cent in the early 1980s to 16 per cent in 2001-2003. Nevertheless, pulse trade remains a relatively thin market, especially when compared to other food commodities, namely grains.

2.52 The expansion in international trade of pulses has provided a good opportunity for several countries to expand their exports. It is noteworthy that despite their growing trade deficit, the developing countries, as a group, increased their pulse shipments by 150 per cent between 1980 and 2003 and more than doubled their export earnings from pulse sales.

2.53 As regards the outlook, per capita pulse consumption in the Near East/North Africa and Latin America and Caribbean regions is projected to stay at current levels, while it is likely to fall further in South Asia because of a shift to consumption of higher value livestock products and fruits and vegetables. By contrast, an increase is expected in sun-Saharan Africa, reversing the decline experienced in recent years. It is also expected that net imports by developing countries to grow in order to meet their growing demand.

2.54 On the supply side, constraints to productivity growth and production in the developing countries are expected to persist, unless corrective measures are taken. As such, production growth is expected to lag behind demand. Consequently, the recent trend in pulse imports by this group of countries will most probably continue.

2.55 Pulses play an important role in the nutritional security of a large number of people. They represent a major source of protein, especially among the poorer section of the population who rely on vegetable sources for their protein and energy requirements. Moreover, in recent years there has been a change in the consumption of pulses in several developed countries where they are increasingly considered as health foods. It is recommended that ***Government should create an enabling environment to develop the pulse sector. This would mean that the development of new pulse varieties and cultivation technologies be reinforced by adequate policies, support programmes in education and training of farmers, supply of input and credit and the development of appropriate marketing channels.***

Rabi Oilseeds

2.56 The production of oilseeds in the country has maintained good performance in the third successive year since 2003-04. During the year 2005-06, total production of nine major oilseeds (Groundnut, soyabean, Rapeseed/mustard, sunflower, safflower, sesamum, castorseed, linseed and nigerseed) is expected to be an all time record 27.73 million tonnes (4th Advance Estimate of Crop production). Likely Production of rabi oilseeds, that accounts for about 39 per cent of total oilseeds production in the country, is pegged at 10.89 million tonnes, marginally higher than the record production of 10.20 million tonnes achieved during 2004-05. Recent consistency of good production augers well for the edible oil economy of the country, which otherwise had fallen in the syndrome of substantial domestic supply-demand gap. Rabi oilseeds particularly rapeseed and mustard contributed significantly for this healthy turnaround.

(Table 2.1)

Rapeseed & Mustard

2.57 Rapeseed and Mustard is the most important rabi oilseeds crop and is one of the three major oilseeds crops of the country (other two are groundnut and soyabean) accounting for nearly 27 per cent of total oilseeds production and over 70 per cent of total rabi oilseeds production. The crops of Rapeseed and mustard can be grown in varying conditions ranging from sub tropical to temperate climate. The distinctive feature of the crop is its lesser dependence on assured irrigation. As a result, cultivation of this commercial crop is adjunct to sustainable use of water. It is grown in different states competing with other rabi crops, mainly wheat and gram. However, Rajasthan dominates the cultivation of rapeseed and mustard with nearly half of the share in its acreage and production. Haryana, Madhya Pradesh, Uttar Pradesh, Gujarat and West Bengal are other important states producing this crop.

2.58 The rapeseed and mustard has played a significant role in the quest of the country to attain self-sufficiency in edible oils and restrict the ballooning import dependence. The initial success in the mid-nineties of the Technology Mission of Oilseeds and Pulses (TMOP) that was

initiated in mid-eighties with the aforesaid objectives was predominantly shared by the rapeseed and mustard. The production of rapeseed and mustard was 2.79 million tonnes for the triennium ending (TE) 1985-86. Its record production of 7.59 million tonnes in 2004-05 was 2.7 times quantum leap as against 2.1 times increase in total oil seeds production since 1985-86. This has been supported both by expansion in area and improvement in yield. In the corresponding interval, acreage and yield of rapeseed and mustard increased from 3.9 million hectares and 674 kg/hectare respectively to 7.3 million hectare and 1038 kg/hectare respectively.

2.59 Production of Rapeseed and mustard had been inconsistent in the recent past. After attaining the level of 6.66 million tonnes in 1996-97, the production of rapeseed and mustard in the country passed through a sluggish phase and in the drought year of 2002-03, it slumped to 3.88 million tonnes. The production was the lowest in the proceeding fifteen years. However, the crop bounced back in 2003-04 with a production of 6.29 million tonnes . During 2004-05, the area and production of rapeseed and mustard in the country scaled their new peaks of 7.31 million hectares and 7.59 million tonnes respectively. According to 4th Advance Estimates of Crop production (DES), the likely production in 2005-06 is expected to be an impressive 7.89 million tonnes. (Table 2.1)

2.60 During the period 1985-86 to 1995-96, when TMOP was heralded for ushering yellow revolution, the growth rate of production of rapeseed and mustard was 8.56 per cent per annum and that of acreage was 5.74 per cent per annum. These growth rates were more impressive than the corresponding annual growth rates of 7.56 per cent and 3.76 per cent for total oil seeds. During this period, productivity of rapeseed and mustard also improved by 2.67 per cent per annum. Subsequently, the oilseeds production performance not only lost its growth momentum, but got reversed to register a decline of 0.83 percent per annum during the period 1995-96 to 2004-05. Production trend of rapeseed and mustard was also virtually stagnant, despite its productivity having sown a sustained progress of 2.24 per cent per annum during this phase implying decline in area of about 2.13 per cent per annum (Table -1). During this period, the economy of rapeseed and mustard passed through one or other crisis on account of incidence of drowsy that weaned away the consumer's preference and inclement weather in 2002-03.

(Table 2.2)

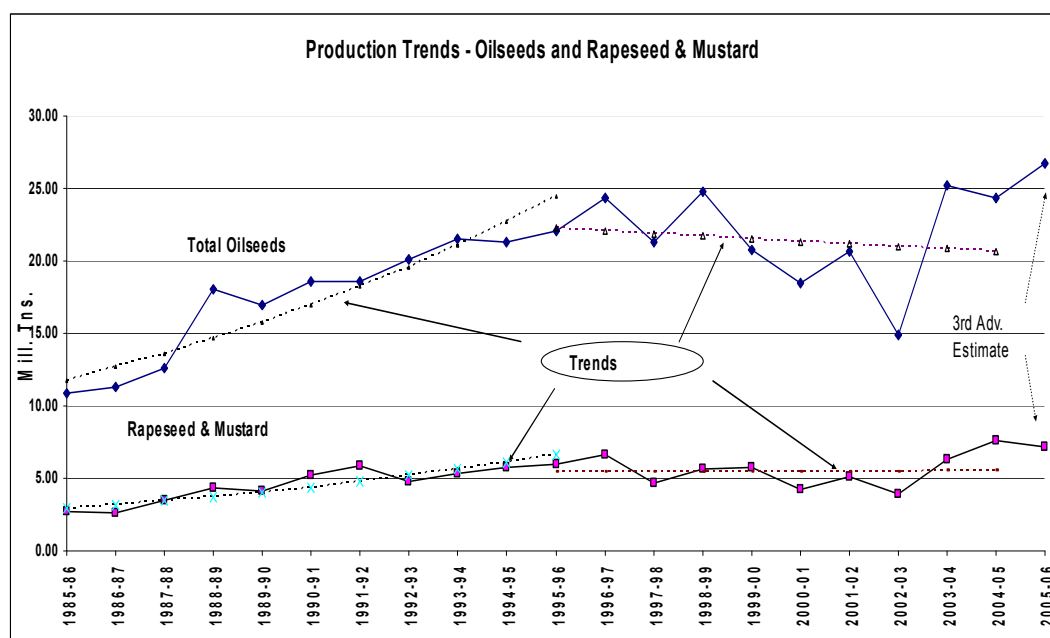
Table 2(G) : Growth Trends of Total Oilseeds and Rapeseed and Mustard

Period	Growth Rates (% per annum)	
	Total oil seeds	Rapeseeds & Mustard

	A	P	Y	A	P	Y
1985-86 to 1995-96	3.76	7.56	3.67	5.74	8.56	2.67
1995-96 to 2004-05	-1.03	-0.83	0.20	-2.13	0.07	2.24

A : Area, P : Production, Y: Yield

2.61 Post 1995-96, TMOP failed to make any meaningful impact on oilseeds production scenario, as evident from the depressed and inconsistent domestic supply (Chart-1). During 1985-86 to 1995-96, the trend neutral coefficient of variation (TNCV) of total oilseeds was 5.48 as against 6.64 for rapeseed and mustard. During 1995-96 to 2004-05, the TNCV of total oilseeds jumped to 13.56. The domestic production supply of rapeseed and mustard was however relatively less variant with 10.63 TNCV. Consequently the import dependence of Indian edible oil economy increased manifold during this period. Against this background, the recent turnaround in the production of rapeseed and mustard is a boon, not only for the farmers engaged in its cultivation but also for the sagging and vulnerable edible oil economy of the country.



2.62 The differentiated dynamics of production parameters of rapeseed and mustard are of particular interest in respect of Rajasthan, that had accounted for 52 per cent of record production in 2004-05 (Table -2). Three other States viz Haryana, Madhya Pradesh and Uttar Pradesh, together accounted for another who shared 30 per cent of production. In Rajasthan, the annual growth of productivity at 3.6 per cent during 1995-96 to 2004-05 was twice the rate of productivity gain occurred in the preceding ten years. Though the acreage trend during 1995-96 to 2004-05 in Rajasthan was negative, the year 2004-05 which was a record production year witnessed crop area of 3.7 million hectares, which was 72 per cent higher than the area coverage in 2003-04. In Haryana, the acreage and productivity of the crop consolidated further during 1995-96 to 2004-05 to accelerate production at 3.5 per cent per annum. The states of Madhya Pradesh and Uttar Pradesh however, remained inert towards cropping of rapeseed and mustard during this period.

The growth of production in the state of West Bengal that falls in the core of consumption region of rapeseed and mustard oil, was an impressive 6.9 per cent per annum. Resultant to such robust growth, the share of West Bengal in the total rapeseed and mustard production in the country improved to nearly 6 per cent in 2004-05 from less than 5 per cent, a decade back.

Table 2 (H) : Statewise rapeseed & mustard production and growth trends

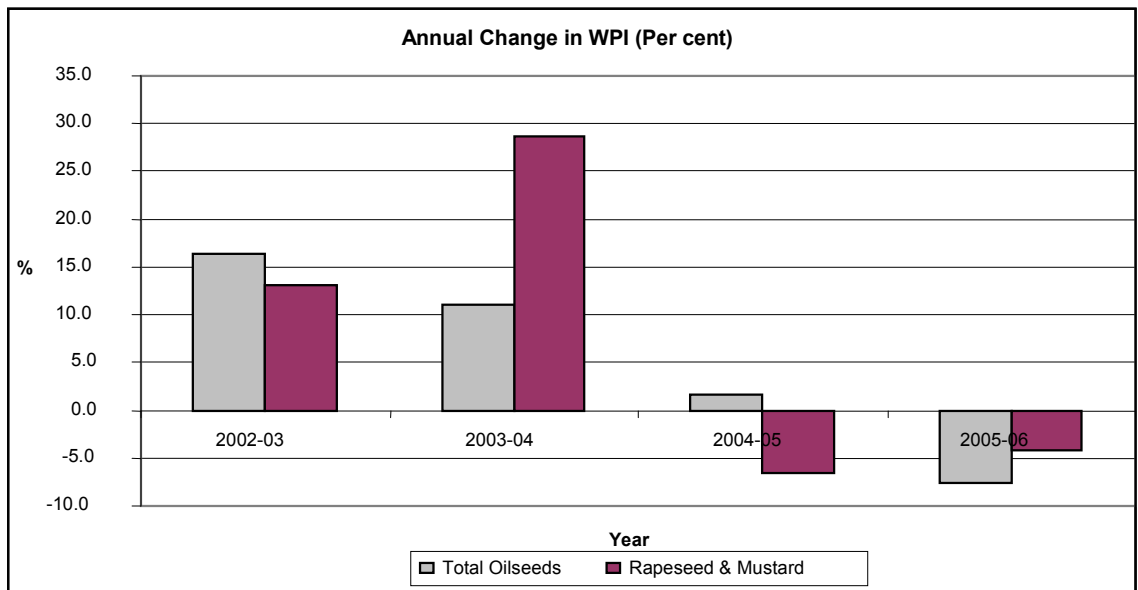
States	2004-05			Growth Rate % / Ann		
	Production		Yield Kg/Ha	1995-96 to 2004-05		
	000*tonnes	% Share in All India		Area	Prod.	Yield
Gujarat	405	5.3	1390	-5.39	-4.06	1.41
Haryana	826	10.9	1177	1.53	3.46	1.90
Madhya Pradesh (incl.chhatisgarh)	695	9.1	941	-2.63	-1.75	0.91
Rajasthan	3971	52.3	1078	-3.02	0.47	3.60
Uttar Pradesh (incl.uttaranchal)	812	10.7	972	-4.63	-3.67	1.00
West Bengal	427	5.6	934	4.65	6.85	2.10
Others	457	6.0				
All-India	7593	100.00	1038	-2.13	0.07	2.24

2.63 These divergences in the trends of production parameters bring to focus distinctive response inferences in respect of farming of rapeseed and mustard. Firstly, in the state like Rajasthan, where due to constraints of water availability, alternative farming choices are very limited, the progression of rapeseed and mustard acreage, productivity and production, against the backdrop of serious droughts in recent past, had indeed rejuvenated its rural economy. Secondly, the crop response to water use efficiency and farm returns favour the cultivation of rapeseed and mustard over the other competing rabi crops such as wheat, potato and gram. This response factor was noticed to have strengthened in the regions of Rajasthan and Haryana, on account of cost of water use in alternative cropping choices. Thirdly, the MSP of rapeseed and mustard in recent years was given a liberal hike. This was a conscious policy intervention designed to encourage crop diversification and enhance its acreage and production for stemming the rising gap between domestic supply and demand of edible oils. The response of farmers to growing rapeseed and mustard was on the desired track of the expectation of the policy.

2.64 Given the overall needs of the economy, particularly that of edible oil demand supply situation and equity in agrarian space, there is still scope of stimulating this response, both in terms of opportunity as well as potential. The increasing trend of productivity of rapeseed and mustard is a healthy phenomenon. The average productivity of rapeseed and mustard hovers around 1000 kg/hectare, which is less than two third of world average productivity of 1840 kg/ha for rapeseed (2004 - FAOSTAT). According to ICAR, the technology in seed and farming practices exists to actualize the yield in the range of 1500 to 2400 kg/hectare. The interstate

variation in the average productivity of rapeseed and mustard in the country is also in the relatively narrow range of 900 kg to 1400 kg per hectare. This is due to the adjustability of the crop cultivation in varying conditions. Thus, a well coordinated research, extension and delivery effort can enhance the average productivity of rapeseed and mustard in the country to the level of 1500 kg/ha in a short term of two to three years and to the level of world average in the medium term of 5 to 6 years. This strategy would, on one hand, augment the domestic supply by additional 3 million tonnes within the existing cropping pattern, and, on the other, hand would also translate into production efficiency and improving cost competitiveness. Undoubtedly, a stable market environment and strengthened forward linkages to processing and consumption would be the complementary essentialities.

2.65 The domestic market for oilseeds in general and rapeseed and mustard in particular in recent years was volatile, in consonance with the swings in domestic production supply. The price volatility of rapeseed and mustard seeds was relatively higher than that of total oilseeds. The high - low of monthly Wholesale Price Index (WPI base 1993-94 : 100) in the past sixty months was 115.4 – 193.8, as compared to 129.3 – 191.3 for total oilseeds . The average WPI of oilseeds for 2001-02 (April – March) was 137.6. In 2002-03, the year of severe drought, it increased to 160.2 (by 16.4 percent) and climbed further up 11.0 percent to 177.8 in 2003-04. After a moderate rise in 2004-05 to 180.8, the average WPI of oilseeds skidded by 7.6 percent to 167.1 in 2005-06. (Chart 2). Correspondingly, the average WPI of rapeseed and mustard for 2002-03 stood at 143.4, after moving up by 13.1 percent from previous year. During 2003-04, average WPI jumped by 28.6 percent from previous year to 184.3. In 2004-05 and 2005-06, there was gradual softening of prices of rapeseed and mustard and average WPI receded by 6.5 percent and further by 4.4 percent to 172.3 and 164.8 respectively. By the end of peak marketing season of 2005-06, the WPI for rapeseed and mustard receded to 161.1 in May, 2006. The depression in rapeseeds and mustard prices in the recent past was contrary to the aggregated buoyancy in the prices of all commodities as well as of agricultural commodities, as shown by the respective WPI's in May 2006 being firm at 200.6 and 195.2. The WPI of mustard oil had also been volatile in consonance with the volatility of seed prices. The average WPI of mustard oil for 1998-99 was 179.6. After diving down to 112.1 in 2000-01, the WPI gradually climbed up and peaked at 193.9 in 2003-04 and then retreated to 159.8 in 2005-06. By May 2006, the WPI of mustard oil further softened to 154.7. (Table 2.25)



2.66 Edible oil sector of the country has become vulnerable to the liberal imports of cheaper palm oil and soya oil. The market behaviour of rapeseed and mustard seeds and its value added mustard oil since 2000-01 remained most unstable in edible oil basket with about 68 per cent and 95 per cent swings between peak and trough respectively. Since 2000-01, the imports of edible oils had been consistently in excess of 4 million tonnes. In 2003-04, the domestic edible oil economy resurged from slumber and the net availability of edible oil from domestic sources improved by 2.5 million tonnes. Nearly one third of this augmentation was contributed by mustard oil. Despite this improvement in supply from domestic sources, the import of edible oils also increased and peaked at 5.3 million tonnes. In the liberalised regime of imports of edible oils, 2003-04 heralds the recovery of domestic oil seeds economy and also sizeable resort to supply of edible oils from external sources due to unregulated imports, as illustrated in Table below:

Table 2 (I) : Supply Pattern of Edible Oil

(In million tonnes)

Period	Net availability of edible oils from all domestic sources	Imports of edible oils	Gross supply (Domestic and Imports)
TE 2002-03	5.43	4.29	9.72
TE 2005-06	7.43	4.67	12.10

Data Source: Directorate of Edible Oil

2.67 For the triennium ending (TE) 2005-06, total availability of edible oils in the country was

12.10 million tonnes, which was over 24 per cent higher than that for the TE 2002-03. The consistent import pressure also contained a dynamic behaviour in the composition of imported edible oil. The palm oil imports has been robust but in the recent years, import of soya oil (refined and degummed) has taken quantum jump to almost half of total imports and the import of sunflower oil has declined. The international price of soya oil at about 450 USD per tonne in June 2006 is almost 25 per cent lower than that in last year and hence the real tariff protection from low bound rate of 45 per cent has been eroded. This significant shift in overall supply and decline in international prices exacerbated the pressure on prices in the domestic market.

2.68 The aforesaid analysis brings to focus incoherence in the different policy instruments, while dealing with the domestic oilseed economy. While the policy package for increasing domestic production of oilseeds aimed at improving self sufficiency in edible oils and economic gains to farmers engaged in oilseeds cultivation, had shown positive response in the past couple of years, the absence of policy instruments to regulate the imports in consonance with increased domestic supply has been counter productive to economic gains accruable to farming community. The policy mismatch has resulted into a quaint situation of domestic prices to rule below MSP successively during 2004-05 and 2005-06 necessitating the extensive intervention by National Agricultural Cooperative Marketing Federation of India Ltd (NAFED) in association with the State Cooperative Federations to procure rapeseed and mustard under its Price Support System (PSS). Against the MSP of Rs 1715 per quintal for 2005-06, the prices of rapeseed and mustard in the primary markets during peak arrival period (March-May) ruled in the range of Rs 1400-Rs 1600 per quintal in Rajasthan, the largest producing state. By the end of June 2006, NAFED had procured about 2.1 million tones of rapeseed and mustard under PSS, of which about 1.3 million tonnes was procured in Rajasthan alone. The scale of market intervention at MSP, despite being 28 percent of total production, could not lift the market adequately, and it was depressed as compared to the year 2004-05. The lack of market confidence was not only due to supply pressure, but was also on account of carry over stock of about 1.5 million tonnes of rapeseed and mustard seed with NAFED. Out of its procurement of 2.1 million tonnes in the season 2004-05, NAFED could liquidate only half-a million tonne. Thus, at the end of current marketing season, NAFED has a total stock of 3.5 million tonnes of rapeseed and mustard seeds.

(Table 2.10)

2.69 Procurement of commodities covered under PSS can be made successful when there is adequate funds available with the purchasing agencies for timely payment to the farmers. Till Rabi 2005, the funds were made available against the Government guarantee of Rs. 1631 crore provided to NAFED for drawing CCL from State Bank of India. However, due to unprecedented procurement of over 2 million tonnes of mustard seed, coupled with 0.2 million tonnes of Pulses, available credit line from Government guarantee was insufficient. It look some time for Ministry of Agriculture to get approval from the Ministry of Finance for giving additional Government guarantee or comfort letters to the banks to facilitate NAFED drawing additional funds. On

issuance of letters of comfort for availing CCL for additional funds, NAFED could draw to the extent of Rs 2000 Crores from other commercial banks and clear the dues. For procurement of mustard seed during Rabi 2006, funds could be drawn only from the available government guarantee of Rs. 900 crore during 3rd week of April, though by that time mustard seed worth Rs. 2200 crore had already been procured. By 28.06.06, when procurement has already crossed 2 million tonnes valued Rs. 4017 crore, payments to the farmers over and above Rs. 900 crore were pending. The procurement of rapeseed and mustard also faced the problems for making available gunny bags and for arranging storage space. Due to the financial and infrastructural constraints, It was decided to fix a ceiling for procurement, thus restricting the very purpose of the MSP operation.

2.70 Disposal of stocks procured should be ideally completed before the arrivals of the next crop. However, in view of the unprecedented procurement of mustard seed during Rabi-2005 and continued depressed market conditions, NAFED could liquidate only around 0.5 million tonne out of the total procured quantity of 2.1 million MTs, thus adding to the carrying cost and to the losses. Against the likely losses of Rs. 1400 crore on disposal of 2.1 million tonnes of mustard seed procured in the previous season, government made a budgetary provision of only Rs. 260 crore during 2005-06 for reimbursement of losses incurred by NAFED. In case disposal of entire quantity was to be arranged before arrival of the next crop, the disposal rate would have to be kept at such a level to induce the millers/buyers to lift the stocks and in that situation the entire loss is to be met in the same year itself. This would have also helped in vacating the storage space available in different States for the next crop season.

2.71 During every season, a need has been stressed for exempting taxes/cesses on the commodities procured under PSS, so as to make the operations more viable. Although, the entire loss on PSS is met by the Central government, the State Governments should be persuaded at least to exempt the taxes and levies on the commodities procured under PSS and to share some burden in improving the welfare of the farmers. At the instance of the Government of India and NAFED, the Government of Rajasthan reduced taxes on movement of mustard seed from 4 per cent to 1 per cent and mustard oil from 2 per cent to 1 per cent for the period from mid-December, 2005 to March, 2006. It is desirable that the lower rate of Taxes on movement of stocks of mustard seed and mustard oil continue in future.

2.72 The offer of MSP at Rs. 1715/- per quintal was a conscious strategy, aligned with overall development agenda to increase the domestic supply of edible oil and to strengthen sustainability of oilseeds production system. However, this strategy itself has proved to be unsustainable due to combination of factors such as preferential demand constraints, competition from unabated cheaper imports of edible oil, organizational and financial constraints of the Government to defend MSP and weak linkages for liquidation of procured stock. With the stock equal to half of the normal production, disposal rate being much slower than desired and market remaining

depressed, the Institutions involved and some of the states appear to be disoriented to pursue the goal of enhancing the growth of area and production of rapeseeds and mustard in the forthcoming season.

Safflower

2.73 Safflower, which was originally grown primarily as a dying agent for food and clothing, is now an important source of edible oil and oil meal of distinctive dietary significance. Being a polyunsaturated oil with high percentage of linoleic acid, safflower oil is considered to be a favoured cooking medium for heart conscious consumers. Being adoptive to dry land as well as irrigated farming, safflower has been a crop of arid and semiarid regions. In India, the crop is mainly concentrated in two states, Maharashtra and Karnataka and is grown in a limited scale in Andhra Pradesh..

2.74 Safflower is a minor constituent in the basket of edible oilseeds. Normal area under safflower seed in the country is 368 thousand hectare (TE 2004-05) which is only 1.5 percent of total oilseeds area in the country. In terms of production, it accounted for even less than one percent of total oilseed production. For the TE 2004-05, the production of safflower seed in the country was 162 thousand tonnes. According to 4th Advance Estimate of crop production, 195 thousand tonnes of safflower seed is expected to be produced in the country during 2005-06, which would be about 12 percent higher than the production of 174 thousand tonnes in 2004-05.

(Table 2.1)

2.75 Over the years, the area and production of safflower has been declining in both the producing states of Karnataka and Maharashtra. The area and production of safflower which used to be 887 thousand hectares and 455 thousand tonnes respectively in the mid-eighties (TE 1985-86), has now declined to less than half. In the past ten years (TE 1995-96 to TE 2004-05), the safflower acreage declined by an annual rate of 7.62 per cent and that of production, the fall was even steeper at 8.32 per cent per annum. Safflower has now turned out to be predominantly confined to Maharashtra, having about two-third share in total area and production, and Karnataka accounts for the rest. (Table 2.2)

2.76 Safflower seed crop possibly remained out of focus of Technology Mission on Oilseeds, as not only its acreage did not get any promotional response, its productivity had also fallen over the years. The productivity of safflower which used to be 587 kg. per hectare in mid-nineties (TE 1995-96), has fallen to 442 kg. per hectare in TE 2004-05. According to TMOP, the varieties of safflower seeds such as NARI –NH-1(PH6) and PHULE KUSUM – 414 released at all India level in 2002 promise the yield of 1500 to 1900 kg. per hectare and are claimed to be disease resistant. But the ground realities are quite different. Incidentally, the average productivity of

safflower seed in India is less than the half of the world average productivity of 954 kg. per hectare (FAOSTAT – 2005) and less than a quarter of high productivity of over 2500 kg. per hectare in Mexico, China and Tajakistan.

2.77 Falling acreage and production of safflower seed is attributed to lack of demand. Few years back, safflower prices used to rule much above MSP and the need for market intervention was never envisaged. However in recent years, safflower prices have tended to rule below MSP. According to NAFED, the prices of safflower seed in Maharashtra were in the range of Rs 1300 to Rs. 1500 per quintal against the MSP of Rs 1565 per quintal during 2006-07 (marketing season) and it has to intervene for PSS operation to procure 45 thousand tones by the end of June, 2006, which is almost 26 per cent of total production in the country.

(Table 2.10)

2.78 Safflower seed and its oil hold promise in the overall development of edible oil sector. In the import dominated edible oil economy, India is a leading exporter of safflower seed in the world. Out of 38 thousand safflower seed exported world over during 2004 (FAOSTAT), India's share was 6218 tonnes (16 percent). But the unit value of export was \$ 451 per tonne as compared to the world average of \$ 391 per tonne and \$224 per tonne for export from Mexico. The global trade is mainly of safflower oil. During 2004, 44 thousand tonnes of safflower oil was traded world over this which was equivalent to about 20 percent of safflower seed production. The world trade of safflower oil is dominated by a few countries; Argentina, Mexico, Netherlands and USA. India, despite having largest area under safflower seed in the world, has no place in safflower oil trade. The main reason for this paradox is poor competitiveness of safflower economy of the country, owing to its lower productivity. Further, the prevailing demand recession reflects weak market linkages in conjunction with lower competitiveness. The Commission, therefore, recommends that ***there should specific focus on development of safflower seed sector in ISOPOM for strengthening research – farm linkages, improving productivity and streamlining post harvest linkages to enhance competitiveness and harness trade opportunities.***

III. BEHAVIOUR OF INPUT PRICES AND COST OF PRODUCTION

Among the many factors that facilitate the formulation of price policy, the cost of production is perhaps the most important. All the items of input costs that are actually incurred by the farmers for each of the crops grown by them, including the imputed value of family labour, rental value of owned land, interest on fixed capital etc. are carefully considered. The data source continues to be the Comprehensive Scheme (CS) of cost of cultivation, operated by the Directorate of Economics and Statistics (DES), Department of Agriculture and Cooperation. The Commission also obtains extensive feed back from the state governments and other stake holders including the farmer's organizations before formulating price policy recommendations. The data from state governments provide valuable input on state specific input prices and also the cost of cultivation estimates generated by the state government. Changes in the prices of various inputs occurred since the submission of the last report are considered. The updated indices on prices of inputs and wage rates are obtained from the offices of Economic Adviser, Ministry of Commerce & Industry and Labour Bureau, Ministry of Labour and Employment.

3.2 Since the submission of the Commission's report on Price Policy for Rabi Crops for the 2005-06 season, as per the information available from the states, the statutory minimum wages have been revised upwards in the states of Bihar, Haryana, Madhya Pradesh, Rajasthan, West Bengal & Uttar Pradesh. As per the information from Labour Bureau, Shimla, the actual wages for agricultural labourers are reported to have increased for Assam (2.1%), Bihar (1.1%), Gujarat (0.4%), Haryana (10.4%), Maharashtra (4.56%), Punjab (3.15%), Rajasthan (16%) and West Bengal (10.7%) during March 2005 and April 2006. The prices of High Speed Diesel (HSD), as measured by the Wholesale Price Index, have increased by about 15.6 per cent during April 2005 and May 2006. Prices of other petro-based inputs like Light Diesel Oil (LDO) and lubricants also moved up by 17.19 per cent and 24.52 percent respectively. The prices of other inputs are reported to have increased by 6.07 per cent for fodder, 3.13 per cent for non-electrical machinery, 4.61 per cent for tractors, 0.69 per cent for fertilizers, 12.61 per cent for pesticides and 10.27 per cent for electricity used for agricultural purposes during the same period.

(Table 3.1 & 3.2)

Estimates of cost of cultivation and projections for 2005-06 crop season

Wheat

3.3 Fresh estimates of Cost of Cultivation/Production (COC/COP) of wheat for 2004-05 became available from the Directorate of Economics and Statistics in respect of Bihar,

Chhattisgarh, Gujarat, Haryana, Himachal Pradesh, Jharkhand, Punjab, Madhya Pradesh, Rajasthan, Uttar Pradesh and Uttarakhand. The details of the latest available estimated costs of wheat and also those pertaining to the preceding year are presented in table 3(A). It is observed that between 2003-04 and 2004-05, the C₂ cost of cultivation per hectare has increased in Gujarat, Jharkhand, Haryana, Punjab, Uttar Pradesh and Uttarakhand, while the same has registered a decline in the states of Chhattisgarh, Himachal Pradesh and Madhya Pradesh. It is noted that the cost is almost same in Bihar and Rajasthan. The C₂ cost of production per quintal has increased in the states of Chhattisgarh, Haryana, Jharkhand, Uttar Pradesh and Uttarakhand, whereas it has registered a decline in the remaining states. The MSP fixed for wheat for the year 2004-05 at Rs. 640 per quintal had sufficiently covered C₂ cost of production for all the major growing states. Further details of cost of cultivation/production of wheat pertaining to the latest period and the preceding year compiled by DES under the CS are given in Tables 3.3 & 3.4.

Table 3 (A) : Cost Estimates for Wheat

(In rupees)

States	Years	A ₂ +FL /hec	C ₂ /hec	A ₂ +FL /qtl	C ₂ /qtl	C ₃ /qtl	Yield/ qtl (hec.)	Implicit Price (qtl)	MSP (qtl)
Bihar	2004-05	10412	15456	398.79	591.94	651.13	22.70	629.71	640
	2003-04	10360	15457	413.58	616.07	677.85	21.90	613.53	630
Chhattisgarh	2004-05	7987	11443	623.98	907.96	1024.44	10.61	722.29	640
	2003-04	8429	12117	560.58	808.63	913.56	12.43	802.82	630
Gujarat	2004-05	13398	18216	393.85	535.37	588.91	32.38	714.16	630
	2003-04	13104	17866	393.94	537.15	590.87	31.59	706.42	620
Haryana	2004-05	15286	24197	330.32	522.87	582.99	39.48	640.78	640
	2003-04	14863	23581	319.23	506.72	571.23	39.93	630.05	630
Himachal Pradesh	2004-05	8818	13604	439.53	678.84	749.19	14.96	691.89	640
	2003-04	8843	13957	518.23	818.16	910.21	12.57	685.77	630
Jharkhand	2004-05	10731	15007	676.91	946.56	1041.42	13.60	624.32	640
	2003-04	9071	12875	594.74	844.07	928.48	13.42	600.47	630
Madhya Pradesh	2004-05	9275	14696	369.94	583.81	642.19	21.79	677.27	640
	2003-04	9291	14992	352.99	568.11	624.92	22.88	669.63	630
Punjab	2004-05	14909	24197	304.69	494.35	547.90	42.94	634.08	640
	2003-04	13714	22415	308.41	504.24	559.89	40.00	630.44	630
Rajasthan	2004-05	13368	19610	328.52	480.19	528.21	32.95	727.43	640
	2003-04	13559	19613	345.70	499.37	549.31	32.99	691.93	630
Uttar Pradesh	2004-05	13912	20813	399.41	597.81	661.73	29.29	620.38	640
	2003-04	12486	19241	313.15	482.78	535.89	34.01	579.07	630
Uttaranchal	2004-05	14724	20842	447.17	630.97	697.00	26.10	632.45	640
	2003-04	13602	18644	573.60	624.92	687.41	23.50	634.00	630

3.4 In order to derive the likely cost of production of wheat in different growing states for the ensuing season of 2006-07, the Commission has as usual used the base level CS data pertaining to different states for the latest three years ending 2004-05. The methodology for projecting the estimates remains the same as for the previous season. The per hectare variable cultivation costs are projected using input price projection and then the per quintal costs are calculated using the yields and fixed costs. Further, in order to make the projections more consistent and realistic, each of the latest three years estimates, provided by the Directorate of Economics and Statistics, wherever available are being projected and their averages taken.

3.5 According to the above mentioned projection methodology, and on the basis of the

actual input price movements observed so far, the per quintal average paid out cost including imputed cost of family labour (i.e. A_2+FL) for wheat for 2006-07 is projected to Rs 456, Rs.464, Rs 361, Rs 424, Rs 337, Rs. 385 , Rs 393, Rs 526, Rs 540, Rs 626 and Rs 608 per quintal in Bihar, Gujarat, Haryana, Madhya Pradesh, Punjab, Rajasthan, Uttar Pradesh, Uttaranchal, Himachal Pradesh, Chhattisgarh and Jharkhand respectively. The average projected unit costs of production (cost C_2) of wheat in these states works out to Rs. 650, Rs.613, Rs.538, Rs.645, Rs.534, Rs.541, Rs. 574, Rs. 686, Rs 795, Rs 885 and Rs. 847 respectively, The weighted average projected cost of production of wheat for 2006-07 for all these states worked out to Rs.387 on $A_2 + FL$ basis, Rs.574 on cost C_2 basis. The states of Chhattisgarh, Himachal Pradesh, Jharkhand and Uttaranchal were not included in the last year's projection due to non availability of complete data on them. Excluding these states, the weighted projected costs for wheat on $A_2 + FL$ and C_2 basis works out to Rs. 384 and Rs. 570 per quintal respectively.

3.6 During their interaction with the Commission, the states of Punjab and Haryana have repeatedly brought out the fact that CS underestimates the rental value of land for these states. It is interesting to note that land rent used by the government of Punjab and Haryana in their projections for the COP of wheat for the current season is Rs. 13500 and Rs. 9500 per hectare respectively. This wide gap exists in the land rents in these two states despite the fact that they are neighbouring states where the land rent levels are almost the same. However the land rent reported for these two states under CS is almost the same. Taking into account the land rent provided by the states of Punjab and Haryana, the projected cost of wheat in these states for the current season works out to Rs. 627 and Rs. 563 per quintal respectively. The weighted average cost of production of wheat taking these figures into account is Rs. 597 per quintal on cost C_2 basis. It may be pertinent to note that the Minimum Support Price (MSP) for wheat fixed at Rs.650 per quintal for the 2005-06 crop season already provides a profit cushion of about 21 per cent for Haryana and 22 per cent for Punjab taking the rental value of land as provided under CS and nearly 4 and 16 per cent respectively using the rental value provided by the state governments. ((Table

3 (G))

3.7 The Commission also receives Cost of Cultivation and input data from various State Governments. These data are examined at length, compared with the corresponding CS data and also with the subsequent projections made on the basis of this data by the Commission for the ensuing season. While making these comparisons, it is noted that certain conceptual and methodological differences exist between the two sets of data due to which they may not be strictly comparable. This matter is regularly discussed with the concerned state governments at the time of meetings with them. It

may be mentioned that these data sometimes relate to more recent years than those made available under CS and have a lot of utility.

3.8 Bihar, Uttar Pradesh and Uttaranchal provided estimates of cost of cultivation/production of wheat for the year 2004-05. The cost estimate provided by both Uttar Pradesh and Uttaranchal are on the lower side as compared to the corresponding CS estimate. In case of Bihar the estimate of cost of cultivation and yield provided by the State for the year 2004-05 is Rs 29531 per hectare and 45 quintals per hectare against the CS figures of Rs 15456 per hectare and 22.70 quintal per hectare respectively. During the course of discussions with the state government officials it was known that the data provided was for the demonstration plots. It would thus not be fair to compare the CS estimate with the state estimate. The states of Gujarat and Madhya Pradesh have provided cost estimates for irrigated and unirrigated wheat separately for the year 2004-05. In the case of Madhya Pradesh, the weighted average cost of cultivation for the year 2004-05 taking the irrigated and unirrigated proportion in the state works out to Rs 16055 per hectare. Consequently, the cost of production is worked out at Rs. 887 per quintal which is higher than the CS estimate for the year. The reason for this difference cannot be pinpointed in the absence of disaggregated state government data. Similarly the cost of cultivation and production in Gujarat for the year 2004-05 work out to Rs 20366 per hectare and Rs. 682 per quintal respectively. This is on the higher side as compared to the CS estimate due to an additional item of cost under the head 'miscellaneous' and also due to a lower yield considered by the state. The cost estimate provided by West Bengal and Maharashtra at Rs 740 and Rs. 1050 per quintal respectively are both on the higher side although no comparison is possible because of non-availability of corresponding CS data for these states.

3.9 The states that have provided the projected cost of production of wheat for the forthcoming sowing season of 2006-07 are Bihar, Haryana, Maharashtra and Punjab. In order to make a meaningful comparison between the projections made by CACP and those provided by the states, certain additional items of costs considered by the states such as management costs, marketing charges, profit etc. have been excluded and adjusted as per the concepts currently used by DES. Table 3(I) presents the details of the comparison of projected costs. It is observed that even after adjustment, the projected C_2 cost of production for Bihar, Punjab and Haryana is higher than the CACP's projection mainly due to consideration of higher rental value of owned land both by Punjab and Haryana. In Bihar the cost of cultivation provided by the state is for demonstration plots which are usually higher than the normal costs.

BARLEY

3.10 The cost estimates of barley for 2004-05 became available for the states of Rajasthan, Uttar Pradesh and Uttaranchal. It is observed from Table 3(B) that between 2003-04 and 2004-05, the C_2 cost of cultivation per hectare increased for all the three states whereas the cost of production per quintal declined in Rajasthan and Uttaranchal due to increase in the average yield on sample holdings in both the states.

Table 3 (B): Cost Estimates for Barley

(In rupees)

States	Years	$A_2+FL/$ hec	C_2/hec	A_2+FL /qtl	C_2/qtl	C_3/qtl	Yield/ qtl (hec.)	Implicit Price (qtl)	MSP (qtl)
Rajasthan	2004-05	12119	18073	267.27	399.38	439.32	33.90	588.41	540
	2003-04	12072	17076	294.06	416.44	462.94	32.30	522.33	525
Uttar Pradesh	2004-05	11192	16886	381.64	576.70	634.37	24.36	536.42	540
	2003-04	9848	15880	290.28	468.49	518.76	28.51	511.46	525
Uttaranchal	2004-05	15720	19248	798.27	977.09	1074.80	14.29	600.19	540
	2003-04	14885	18806	891.66	1126.69	1230.36	11.50	525.94	525

3.11 The average $A_2 +FL$ cost of barley for 2006-07 is projected at Rs. 352 per quintal for Rajasthan, Rs.372 per quintal for Uttar Pradesh and Rs.920 for Uttaranchal following the same methodology as used in the case of wheat. The average C_2 cost of production of barley for these states is projected at Rs 492 and Rs.553 and Rs.1128 per quintal respectively. Due to an unusually low yield of barley in the state of Uttaranchal, the cost of production is almost double as compared to the other two states. The projection of barley for the state has not thus been included in the weighted average calculations. The weighted average cost of production of barley for 2006-07 works out to Rs.525 per quintal on cost C_2 basis.

((Tables 3.8 &3(G))

3.12 The state of Uttar Pradesh provided estimates of cost of production of barley at Rs. 514 per quintal for 2004-05. The cost estimate provided by Uttar Pradesh for the year 2004-05 is lower than the corresponding CS estimates. The State of Haryana has provided the cost projection for 2006-07. Same has not been projected by CACP due to non availability of cost data under CS.

((Tables 3(H) &3(I))

Gram

3.13 Fresh estimates of cost of cultivation /production of gram for the year 2004-05 became available in respect of Bihar, Chhattisgarh, Jharkhand, Haryana, Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and Uttaranchal. It can be observed from Table 3(C) that the MSP fixed at Rs. 1425 per quintal for 2004-05 covered cost C₂ for all the states for which estimates have been made available except for Jharkhand and Maharashtra. (Table 3.9 & 3.10)

Table 3 (C): Cost Estimates for Gram

(In rupees)

States	Years	A ₂ +FL /hec	C ₂ /hec	A ₂ +FL /qtl	C ₂ /qtl	C ₃ /qtl	Yield/ qtl (hec.)	Implicit Price (qtl)	MSP (qtl)
Bihar	2004-05	5011	9953	553.23	1097.08	1209.99	8.71	1630.01	1425
	2003-04	4858	10279	501.31	1061.13	1184.05	9.21	1689.06	1400
Chhattisgarh	2004-05	5788	8522	878.02	1292.91	1447.03	6.24	1394.96	1425
	2003-04	5083	8295	656.26	1070.23	1232.48	7.37	1410.09	1400
Haryana	2004-05	5158	8640	767.34	1284.61	1477.03	6.09	1533.12	1425
	2003-04	5849	10617	880.79	1597.86	1757.65	6.23	1476.97	1400
Jharkhand	2004-05	5782	9179	902.75	1434.12	1577.53	6.12	1816.54	1425
	2003-04	3318	5783	602.50	1049.68	1198.48	5.25	1879.84	1400
Madhya Pradesh	2004-05	6464	11101	585.08	1004.76	1106.64	10.42	1308.27	1425
	2003-04	6474	11362	564.89	991.35	1090.49	10.87	1343.92	1400
Maharashtra	2004-05	8163	11143	1267.21	1728.73	1901.60	6.30	1670.13	1425
	2003-04	9083	14201	832.31	1307.17	1439.59	10.16	1514.65	1400
Uttar Pradesh	2004-05	7075	12116	649.72	1114.71	1226.18	10.38	1558.78	1425
	2003-04	6768	12039	658.62	1171.06	1294.42	9.84	1502.58	1400
Uttaranchal	2004-05	6198	11893	693.36	1330.37	1463.41	8.54	1680.41	1425
	2003-04	5194	11955	578.39	1331.96	1483.94	8.77	1699.27	1400
Rajasthan	2004-05	4866	7038	759.71	1094.82	1226.54	5.87	1585.67	1425
	2003-04	5319	7368	971.02	1338.88	1472.77	5.05	1558.08	1400

3.14 The average A₂+FL costs of gram are projected for 2006-07 at Rs. 582, Rs.868, Rs.728, Rs.1075, Rs.750, Rs.1163, Rs. 832, Rs.789 and Rs.701 for Bihar, Haryana,

Madhya Pradesh, Rajasthan, Uttar Pradesh, Maharashtra, Chhattisgarh, Jharkhand and Uttaranchal respectively. The corresponding C₂ costs are projected at Rs. 1128, Rs.1524, Rs.1188, Rs.1485, Rs.1235, Rs. 1550, Rs. 1301, Rs. 1213 and Rs. 1396 per quintal respectively. The weighted average cost of production of gram works out to Rs.1282 per quintal on cost C₂ basis for the year 2006-07. ((Tables 3.11 &3(G))

3.15 The states of Bihar, Gujarat, Madhya Pradesh, Maharashtra and Uttar Pradesh have provided cost estimates of Gram for the year 2004-05. It may be observed from Table 3(H) that the cost of production estimate provided by Maharashtra and Uttar Pradesh for 2004-05 is observed to be on the lower side than the corresponding CS estimate. However for the other states for which estimates have been received, the state estimate is on the higher side as compared to the CS estimate. The reasons attributed for this difference are the same as discussed for wheat above. ((Tables 3(H) & 3(I))

Masur (Lentil)

3.16 The estimates of cost of cultivation of lentil became available for 2004-05 in respect of Bihar, Chhattisgarh, Jharkhand, Madhya Pradesh and Uttar Pradesh. From Table 3(D) it is observed that the MSP fixed at Rs.1525 per quintal for 2004-05 covered cost C₂ for all the above mentioned states except for Uttar Pradesh. (Tables 3.12 & 3.13)

Table 3(D): Cost Estimates for Masur Lentil

(In rupees)

States	Years	A ₂ +FL/ hec	C ₂ /hec	A ₂ +FL /qtl	C ₂ /qtl	C ₃ /qtl	Yield/ qtl (hec.)	Implicit Price (qtl)	MSP (qtl)
Bihar	2004-05	5027	9893	461.06	907.55	1002.51	10.42	1436.25	1525
	2003-04	4772	10486	429.22	943.21	1040.43	10.64	1538.09	1500
Jharkhand	2004-05	2764	5027	835.53	1520.30	1685.15	3.14	1679.24	1525
	2003-04	2131	3958	733.10	1363.92	1552.94	2.76	1643.57	1500
Madhya Pradesh	2004-05	5905	10943	516.20	958.30	1064.18	10.91	1565.64	1525
	2003-04	5219	9782	514.18	962.66	1066.93	9.71	1552.05	1500
Uttar Pradesh	2004-05	7004	11158	1099.20	1745.60	1965.20	6.11	1654.64	1525
	2003-04	6550	11352	815.96	1414.24	1623.91	7.79	1493.59	1500
Chhattisgarh	2004-05	1646	3132	512.16	974.56	1141.27	3.05	1409.86	1525

3.17 The A₂ +FL cost per quintal of lentil is projected for 2006-07 at Rs.886, Rs. 513, Rs.636 and Rs.779 for Uttar Pradesh, Bihar, Madhya Pradesh and Jharkhand. While the C₂

cost for these states is projected at Rs. 1430, Rs.1024, Rs.1085 and Rs.1316 respectively. The weighted average cost of production of lentil works out to Rs.1271 per quintal on cost C₂ basis for the year 2006-07. ((Tables 3.14 & 3(G)).

3.18 Bihar, Uttar Pradesh and Uttaranchal have provided cost estimates of lentil for 2004-05. The cost estimate and projections provided by Bihar are higher than the corresponding CS estimate for the year 2004-05 for the reasons cited in para 3.8 above.

((Tables 3(G),

3(H) & 3(I))

Rapeseed/Mustard and Safflower

3.19 The cost estimates of Rapeseed/Mustard became available for 2004-05 with respect to Assam, Chhattisgarh, Gujarat, Haryana, Madhya Pradesh, Punjab, Rajasthan, Uttar Pradesh, Uttaranchal and West Bengal.

Table 3 (E): Cost Estimates for Rapeseed/Mustard

(In rupees)

States	Years	A ₂ +FL/ hec	C ₂ /hec	A ₂ +FL /qtl	C ₂ /qtl	C ₃ /qtl	Yield/ qtl (hec.)	Implicit Price (qtl)	MSP (qtl)
Assam	2004-05	8769	10698	1488.7 3	1814.90	1996.39	5.89	1351.84	1700
	2003-04	8408	10367	1595.48	1965.49	2162.04	5.27	1491.30	1600
Chhattisgarh	2004-05	3442	7008	529.18	1077.00	1204.71	6.21	1700.39	1700
Gujarat	2004-05	10803	15327	731.77	1038.51	1142.36	14.53	1498.44	1700
	2003-04	11085	17400	603.61	947.58	1042.34	18.24	1664.18	1600
Haryana	2004-05	9393	15943	781.37	1326.11	1458.72	11.52	1603.84	1700
	2003-04	9018	16933	545.55	1024.31	1126.74	15.89	1629.23	1600
Madhya Pradesh	2004-05	6693	12907	523.41	1010.09	1111.10	12.24	1538.08	1700
	2003-04	8058	17114	464.32	986.22	1087.87	17.08	1734.44	1600
Punjab	2004-05	6558	11981	687.74	1270.95	1407.52	8.80	1629.69	1700
	2003-04	7084	14136	579.88	1154.93	1273.33	11.75	1634.87	1600
Rajasthan	2004-05	7800	12766	561.49	917.39	1009.13	13.58	1579.98	1700
	2003-04	7611	13586	484.18	863.36	949.70	15.49	1715.22	1600
Uttar Pradesh	2004-05	8572	14659	724.28	1237.80	1361.58	11.37	1419.68	1700
	2003-04	8342	13900	786.00	1308.55	1447.38	10.24	1666.95	1600
Uttaranchal	2004-05	8798	11819	1444.11	1964.46	2160.91	5.19	1305.68	1700
	2003-04	7127	10898	995.57	1522.11	1674.32	6.38	1600.19	1600

West Bengal	2004-05	11385	16959	944.11	1408.15	1563.50	11.70	1662.22	1700
	2003-04	10738	16241	1073.39	1614.71	1813.04	9.63	1954.38	1600

3.20 The estimated costs of production of Rapeseed/Mustard in different states have been projected for 2006-07 as per the methodology. It may be observed from Table 3(G) that projected cost $A_2 + FL$ for the year 2006-07 varies between Rs.605 and Rs.1574 per quintal, Rs 605 being the cost in Madhya Pradesh and Rs.1574 being in Assam. The projected cost C_2 for 2006-07 varies between Rs.1046 per quintal in Rajasthan and Rs. 1914 per quintal in Assam. The weighted average cost of Rapeseed/Mustard works out to Rs.1201 on cost C_2 basis.

3.21 The states of Bihar, Gujarat, Madhya Pradesh, Uttar Pradesh, Uttaranchal and West Bengal have provided cost estimates for Rapeseed/ Mustard for the years 2004-05. The estimate of cost of production provided by Gujarat for 2004-05 is higher than the corresponding CS estimate on account of much lower yield considered by the state. The cost estimate provided by Uttar Pradesh at Rs.1198 per quintal is on the lower side as compared to the corresponding CS estimate. The projected cost provided by the states of Bihar and Haryana for the year 2006-07 after due adjustment work out to Rs.1509 and Rs.1381 per quintal respectively which is higher than the Commission's projection. The reasons for this difference have already been discussed in para 3.8 above. ((Tables 3(G) & 3(H))

3.22 The latest estimate for Safflower pertaining to 2004-05 is available for Maharashtra.

Table 3 (F): Cost Estimates for Safflower

(In rupees)

States	Years	$A_2+FL/$ hec	C_2/hec	A_2+FL /qtl	C_2/qtl	C_3/qtl	Yield/ qtl (hec.)	Implicit Price (qtl)	MSP (qtl)
Maharashtra	2004-05	3184	5175	634.27	1030.69	1147.65	5.02	1210.69	1550
	2003-04	5940	7577	2013.54	2572.38	2868.32	2.95	2095.22	1500

3.23 The estimated cost of production for Safflower has been projected for 2006-07 to an average of Rs.1079 and Rs.1486 per quintal on cost $A_2 + FL$ and C_2 basis respectively. The cost of production projected by the state for the year 2006-07 after adjustment work out to Rs. 1531 which is fully covered by the MSP announced for the year 2005-06.

3.24 Thus the MSP fixed for wheat, barley, gram, lentil, rapeseed/mustard and safflower at Rs.650, Rs.550, Rs.1435, Rs.1535, Rs.1715 and Rs.1565 for the season 2005-06 covers the weighted average projected cost for these crops for the season 2006-07 as shown in the bar

chart below:

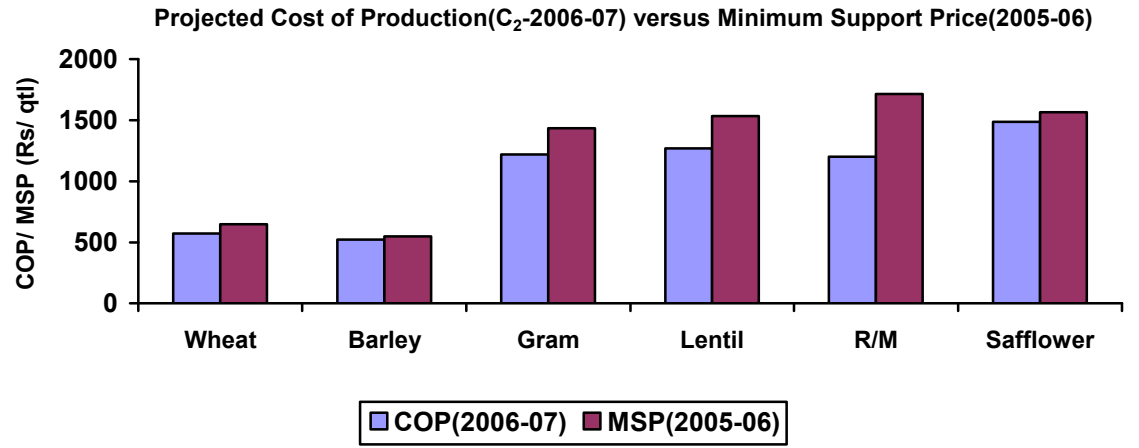


Table - 3(G)

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

Crop/States	Base year	Variable Input Price Index			Projections for 2006-07 (Revised Method-Using 3 years averages)			
		2004-05	2005-06	2006-07	Yield	A ₂ +FL	C ₂	C ₃
		3	4	5	6	7	8	9
<u>Wheat</u>								
Bihar	99-00	125.49	132.47	135.48	22.38	456.34	649.54	714.49
Gujarat	00-01	121.12	126.62	129.98	31.06	463.99	613.03	674.33
Haryana	99-00	125.78	133.47	136.89	39.67	360.66	538.11	591.92
Madhya Pradesh	99-00	131.76	135.89	138.75	21.01	424.23	645.30	709.83
Punjab	99-00	123.85	131.55	133.05	41.20	337.17	534.00	587.40
Rajasthan	99-00	127.99	137.00	140.62	33.00	385.00	541.48	595.63
Uttar Pradesh	99-00	130.60	139.07	141.28	31.33	392.61	574.49	631.94
Uttranchal	02-03	112.95	117.64	120.04	23.81	526.42	685.52	754.07
Himachal Pradesh	99-00	121.84	129.08	133.08	13.31	539.93	794.66	874.13
Chhattisgarh	02-03	109.11	113.93	118.71	12.28	625.97	885.28	973.81
Jharkhand	02-03	105.99	109.62	112.33	14.07	607.94	846.86	931.55
				Wtd. Avg.		386.99	573.58	630.94
<u>Barley</u>								
Rajasthan	99-00	129.36	138.72	145.05	31.41	352.42	491.97	541.17
Uttar Pradesh	99-00	140.73	149.80	152.64	26.38	371.75	553.34	608.67
				Wtd. Avg.		362.75	524.75	577.23
<u>Gram</u>								
Bihar	99-00	132.14	139.30	141.52	9.35	582.35	1127.81	1240.59
Haryana	01-02	113.78	122.81	126.86	6.57	867.96	1524.13	1676.54
Madhya Pradesh	99-00	133.26	139.16	143.36	9.77	727.70	1188.14	1306.95
Rajasthan	99-00	129.44	138.51	143.50	5.80	1074.69	1484.54	1632.99
Uttar Pradesh	00-01	119.43	125.99	127.94	10.15	749.63	1234.61	1358.07
Maharashtra	02-03	114.96	120.45	125.15	7.92	1163.24	1549.75	1704.73
Chhattisgarh	02-03	108.86	112.62	116.31	6.42	831.75	1301.20	1431.32
Jharkhand	02-03	107.61	111.08	113.76	6.04	789.15	1212.99	1334.29
Uttranchal	03-04	107.04	112.65	115.30	8.66	701.04	1396.19	1535.81
				Wtd. Avg.		827.08	1281.70	1409.87

Table - 3(G) (Concluded)

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

Crop/States	Base year	Variable Input Price Index			Projections for 2006-07 (Revised Method-Using 3 years averages)			
		2004-05	2005-06	2006-07	Yield	A ₂ +FL	C ₂	C ₃
		3	4	5	6	7	8	9

Lentil

Madhya Pradesh	99-00	135.46	142.62	145.23	9.22	636.03	1085.10	1193.61
Uttar Pradesh	99-00	123.27	131.75	134.37	8.33	886.03	1430.19	1573.21
Bihar	99-00	127.18	134.25	138.26	10.48	513.26	1024.03	1126.43
Jharkhand	02-03	113.76	116.80	119.39	3.42	778.57	1315.66	1447.23
					Wtd. Avg.	756.84	1270.80	1397.87

Rapeseed & Mustard

Assam	99-00	130.17	136.10	138.60	5.76	1574.03	1914.48	2105.93
Gujarat	99-00	136.09	142.80	146.27	15.55	771.30	1099.46	1209.41
Haryana	99-00	129.52	137.98	141.39	12.68	811.60	1321.76	1453.94
Punjab	99-00	124.86	130.29	133.47	9.55	761.59	1365.46	1502.01
Rajasthan	99-00	138.52	148.83	152.88	14.28	654.02	1046.34	1150.97
Uttar Pradesh	99-00	127.22	134.65	137.93	10.99	805.78	1340.89	1474.98
West Bengal	99-00	122.20	128.02	133.49	10.57	1126.74	1603.57	1763.93
Madhya Pradesh	00-01	129.27	134.51	136.60	11.22	604.94	1145.65	1260.22
Uttaranchal	02-03	105.99	109.09	110.87	7.10	1020.47	1454.38	1599.82
					Wtd. Avg.	755.70	1200.98	1321.08

Safflower

Maharashtra	99-00	136.73	141.75	146.13	4.24	1079.17	1486.13	1634.74
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**Table No- 3
(H)**

Comparative Statement of Cost estimates of Rabi crops provided under Comprehensive Scheme (C) and those by State Government

Crop/State	Year	Cost of Cultivation (Rs./Hect)		Yield (Qtl/Hect.)		Cost production(Rs/Qtl)	
		C.S.Survey	State Reply	C.S.Survey	State Reply	CS Survey	State Reply
1	2	3	4	5	6	7	8
<u>Wheat</u>							
Bihar	2004-2005	15456	29531	22.70	45.00	592	621
	2005-2006	NA	34933	NA	45.00	NA	776
Gujarat	2004-2005	18216	20366	32.38	29.85	535	682
	2005-2006	NA	20579	NA	30.01	NA	686
Madhya Pradesh	2004-2005	14696	16055	21.79	18.11	584	887
	2005-2006	NA	15168	NA	18.51	NA	819
Uttar Pradesh	2004-2005	20813	18074	29.29	27.10	598	565
Uttranchal	2004-2005	20842	21098	26.10	30.57	631	503
West Bengal	2004-2005	NA	18956	NA	24.19	NA	740
Maharashtra	2004-2005	NA	15738	NA	14.75	NA	1050
<u>Barley</u>							
Uttar Pradesh	2004-05	16886	14186	24.36	22.52	577	514
<u>Gram</u>							
Bihar	2004-2005	9953	22612	8.71	18.00	1097	1256

	2005-2006	NA	29015	NA	17.50	NA	1659
Gujarat	2004-2005	NA	9741	NA	7.65	NA	1222
	2005-2006	NA	10654	NA	7.77	NA	1315
Madhya Pradesh	2004-2005	11101	14821	10.42	9.29	1005	1595
	2005-2006	NA	15392	NA	10.27	NA	1499
Uttar Pradesh	2004-2005	12116	10903	10.38	10.50	1115	1009
Maharashtra	2004-2005	11143	7489	6.30	5.28	1729	1370

Lentil

Bihar	2004-2005	9893	20525	10.42	20.00	908	1032
	2005-2006	NA	24137	NA	15.00	NA	1609
Uttar Pradesh	2004-2005	11158	9851	6.11	8.45	1746	1131
Uttranchal	2004-2005	NA	12770	NA	NA	NA	1400

Rapeseed & Mustard

Bihar	2004-2005	NA	23018	NA	18.00	NA	1274
	2005-2006	NA	28296	NA	16.00	NA	1769
Gujarat	2004-2005	15327	16582	14.53	12.25	1039	1328
	2005-2006	NA	16746	NA	14.58	NA	1123
Madhya Pradesh	2004-2005	12907	15134	12.24	9.89	1010	1530
	2005-2006	NA	15382	NA	10.00	NA	1538
Uttar Pradesh	2004-2005	14659	12522	11.37	10.06	1238	1198
Uttranchal	2004-2005	NA	12242	NA	NA	NA	1046
West Bengal	2004-2005	16959	15865	11.70	8.77	1408	1759

Safflower

Maharashtra	2004- 2005	5175	7177	5.02	5.69	1031	1255
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Source : 1. Directorate of Economics and Statistics
2. State Replies for 2006-07 Season

Table No 3(I)

Comparison of Projections

Crop/State	Year	State Yield Qtl/hec	State Projections (determined by state)		* Comparable Estimates (using state data)			Projections for 2006-07 (as done by CACP)	
			Cost/hectare	Cost/quintal	Cost/hectare	Cost/quintal	Yield (C.S) Qtl/hec	Cost/hectare	Cost/quintal
1	2	3	4	5	6	7	8	9	10

Wheat

Bihar	2006-07	35.00	31154	1113	28322	809	22.38	16539	650
Haryana	2006-07	39.13	30299	795	30299	674	39.67	25324	538
Punjab	2006-07	42.09	31793	811	31793	643	41.20	24907	534
Maharashtra	2006-07	17.66	21187	1444	19607	1070	NP	NP	NP

Gram

Bihar	2006-07	18.00	26242	1823	23856	1325	9.35	11015	1128
Haryana	2006-07	7.88	10925.98	1497	10925.98	1285	6.57	11181	1524
Maharashtra	2006-07	6.22	10432.03	2000	9653	1507	7.92	12684	1550

Barley

Haryana	2006-07	27.95	17917	688	17917	581	NP	NP	NP
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**Rapeseed
& Mustard**

Bihar	2006-07	15.00	24895	2075	22632	1509	NP	NP	NP
Haryana	2006-07	12.78	17650	1608	17650	1381	12.68	17308	1322

Lentil

Bihar	2006-07	15.00	21859	1821	19872	1325	10.48	11598	1060
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Safflower

Maharashtra	2006-07	7.25	12000	2040	11118	1531	4.24	6301	1486
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Note :* Data supplied by the states have been recalculated to correspond to the current CACP concepts and methodologies

NP - Not Projected due to non-availability of CS estimates

