R E P O R T

OF

THE EXPERT COMMITTEE
TO STUDY
THE IMPACT OF FUTURES TRADING

ON

AGRICULTURAL COMMODITY PRICES

Ministry of Consumer Affairs, Food & Public Distribution
Government of India
2008

C O N T E N T S

1. INTRODUCTION

1.1 In the wake of consistent rise of rate of inflation during the first quarter of calendar year 2007 and responding to the concerns expressed at various fora and by various opinions including by Parliamentary Standing Committee of the Ministry of Consumer Affairs, Food and Public Distribution in its 17th Report, an Expert Committee was set up under the Chairmanship of Prof. Abhijit Sen, Member, Planning Commission to examine whether and to what extent futures trading has contributed to price rise in agricultural commodities. The terms of reference of the Committee are as follows:

i) To study the extent of impact, if any, of futures trading on wholesale and retail prices of agricultural commodities;
ii) Depending on (i), to suggest ways to minimize such an impact;
iii) Make such other recommendations as the Committee may consider appropriate regarding increased association of farmers in the futures market/trading so that farmers are able to get the benefit of price discovery through Commodity Exchanges.

1.2 The constitution and terms of reference of the Expert Committee to Study the Impact of Futures Trading on Agricultural Commodity Prices (ECFT) are given in **Annexure-I.**

1.3 The Expert Committee met ten times and also met various individuals, dignitaries, heads/representatives of various government departments/agencies, commodity exchanges and various corporates and cooperatives. Presentations were also made by various institutions/organizations in response to the invitation of the Expert Committee. The list of Organisations/Institutions whose representatives met the Expert Committee is given in **Annexure-II.**

2. HISTORY

2.1 The history of futures trading in commodities in India dates back to the later part of 19th century when the first commodity exchange, viz.. the Bombay Cotton Trade Association Ltd was set up for organizing futures trading. The early 20th century saw the mushrooming of a number of commodity Exchanges. The principal commodity markets functioning in pre-independence era were the cotton markets of Bombay, Karachi, Ahmedabad and Indore, the wheat markets of Bombay, Hapur, Karachi, Lyallpur, Amritsar, Okara and Calcutta; the groundnut markets of Madras and Bombay; the linseed markets of Bombay and Calcutta; Jute and Hessian markets of Calcutta; Bullion markets of Bombay, Calcutta, Delhi and Amritsar and sugar markets of Bombay, Calcutta, Kanpur and Muzaffarnagar. There were no uniform guidelines or regulations. These were essentially outcomes of needs of particular trade communities and were based on mutual trust and faith. They were regulated by social control of close-knit groups and whenever such control failed, there would be a crisis.

2.2 In order to provide constant vigil to prevent crisis, rather than combat these after they occurred, a comprehensive legislation was enacted by the Bombay State in 1947 in the form of the Bombay Forward Contracts Control Act. On adoption of the Constitution of the Republic, the subject, "Stock Exchanges and Futures Markets" was included in the Union List and a central legislation called Forward Contract (Regulation) Act 1952 was enacted which provided the legal framework for organizing forward trading in the country and provided, inter alia, for recognition of Exchanges. This framework continues to exist even today. One of the important features of this Act is to notify a commodity for prohibition or regulation of forward contract. Under these provisions, a large number of commodities were notified for prohibition during the 1960s which left only a handful of insignificant commodities open for forward trade. This scenario continued for about four decades although the Dantawala Committee(1966) and Khusro Committee (1980) had recommended steps to revive futures trading in more agriculture commodities.

2.3 Subsequent to liberalization of Indian economy in 1991, a series of steps were taken to liberalise the commodity forward markets. This found expression in many reports and studies of committees and groups to recommend reforms in commodity futures market. The Kabra Committee (1994), the earliest post-1991, recommended opening up of futures trading in 17 selected commodities, although it was not unanimous regarding some of these. Importantly, this committee was unanimous in recommending

that futures trading *not be resumed* in case of wheat, pulses, non-basmati rice, tea, coffee, dry chilli, maize, vanaspati and sugar. For most of these, it recommended that case by case reviews of suitability of each commodity be carried out in light of developments in the future. UNCTAD and World Bank joint Mission Report **"India: Managing Price Risk in India's Liberalized Agriculture: Can Futures Market Help? (1996)** highlighted the role of futures markets as market based instruments for managing risks and suggested the strengthening of institutional capacity of the Regulator and the exchanges for efficient performance of these markets. This report also noted that government intervention was pervasive in some sensitive major commodities like wheat, rice and sugar and was of the view that future markets in these commodities were *unlikely to be viable* because of this. Another major policy statement, the **National Agricultural Policy, 2000,** also expressed support for commodity futures. **The Expert Committee on Strengthening and Developing Agricultural Marketing (Guru Committee: 2001)** emphasized the need for and role of futures trading in price risk management and in marketing of agricultural produce. This Committee's Group on Forward and Futures Markets recommended that it should be left to interested exchanges to decide the appropriateness/usefulness of commencing futures trading in products (not necessarily of just commodities) based on concrete studies of feasibility on a case-to-case basis. It, however, noted that:

"All the commodities are not suited for futures trading. For a commodity to be suitable for futures trading it must possess the following characteristics:-

i. The commodity should have a suitable demand and supply conditions i.e. volume and marketable surplus should be large.
ii. Prices should be volatile to necessitate hedging through futures trading in this case persons with a spot market commitment face a price risk. As a result there would be a demand for hedging facilities.
iii. The commodity should be free from substantial control from Govt. regulations (or other bodies) imposing restrictions on supply, distribution and prices of the commodity.
iv. The commodity should be homogenous or, alternately it must be possible to specify a standard grade and to measure deviations from that grade. This condition is necessary for the futures exchange to deal in standardized contracts.

v. The commodity should be storable. In the absence of this condition arbitrage would not be possible and there would be no relationship between spot and futures markets."

3. GROWTH OF THE MARKET

3.1 The year 2003 is a watershed in the history of commodity futures market. The last group of 54 prohibited commodities was opened up for forward trading, along with establishment and recognition of three new national exchanges with on-line trading and professional management. Not only was prohibition on forward trading completely withdrawn, including in sensitive commodities such as wheat, rice, sugar and pulses which earlier committees had reservations about, the new exchanges brought capital, technology and innovation to the market. These markets notched up phenomenal growth in terms of number of products on offer, participants, spatial distribution and volume of trade. Starting with trade in 7 commodities till 1999, futures trading is now available in 95 commodities. There are more then 3000 members registered with the exchanges. More than 20,000 terminals spread over more than 800 towns/cities of the country provide access to trading platforms. The volume of trade has increased exponentially since 2003-04 to reach Rs. 36.77 lakh crore in 2006-07. Almost all of this (97.2%) of this is now accounted for by the three national exchanges. The other 21 Exchanges have a miniscule share in the total volume.

3.2 The growth in commodity futures trade has spawned an upsurge of interest in a number of associated fields, viz. research, education and training activities in commodity markets, commodity reporting for print and visual media, collateral management, commodity finance, ware-housing, assaying and certification, software development, electronic spot exchanges etc. Markets and fields almost non-existent four years ago now attract significant mind-share nationally and internationally.

Table-1: Commodity Group-wise Value of Trade

(Rs. Lakh Crores)

Commodity Groups	2004-05	2005-06	2006-07	2007-08
Bullion and other metals	1.80 (31.47)	7.79 (36.15)	21.29 (57.90)	26.24 (64.55)
Agriculture	3.90 (68.18)	11.92 (55.31)	13.17 (35.82)	9.41 (23.15)
Energy	0.02	1.82	2.31	5.00

	(0.35)	(8.45)	(6.28)	(12.30)
Others	0.00 (0.00)	0.02 (0.09)	0.001 (0.00)	(0.00) (0.00)
Total	5.72 (100.00)	21.55 (100.00)	36.77 (100.00)	40.65 (100.00)

Note: Figures in parenthesis indicate percentage to total value

3.3 Futures contracts are available for major agricultural commodities, metals and energy. Commodity group-wise value of trading since 2004-05 is given in **Table–1.** Although agricultural commodities led the initial spurt, and constituted the largest proportion of the total value of trade till 2005-06 (55.32%), this place was taken over by bullion and metals in 2006-07. The growth in 2006-07 was almost wholly (88.7%) accounted for by bullion and metals, with agricultural commodities contributing a small fraction (10.7%). This was partly due to the stringent regulations, like margins and open interest limits, imposed on agriculture commodities and the dampening of sentiments due to suspension of trade in few commodities. Futures market growth in 2006-07 appears to have bypassed agriculture commodities.

3.4 Moreover, there has been a very significant decline in volume of futures trade in agriculture commodities during the year 2007-08, by 28.5%. The overwhelming bulk of this decline is accounted for by Chana, Maize, Mentha Oil, Guar seed, Potato, Guar Gum, Chillies and Cardamom. Trade in these eight commodities, which accounted for 57.9% of total futures trade in agricultural commodities in 2006-07, declined by over 66.4% during 2007-08 compared to previous year. The decline in these eight commodities exceeded the decline of futures trading volumes in all agricultural commodities taken together.

3.5 Four commodities (wheat, rice, urad and tur) were de-listed for futures trading towards the end of financial year 2006-07. This de-listing has been held responsible in many circles for the recent general downturn in futures trading in agricultural commodities. But these four de-listed commodities together accounted for only 6.65% of the total value of futures trading in all agricultural commodities in 2006-07. Thus, although this may have affected market sentiments adversely, the delisting did not have any major direct contribution to the decline in trading observed during 2007-08.

3.6 In fact, except chana and urad, the share of sensitive commodities in total value of futures trade in agricultural commodities has so far been quite insignificant. The combined share of other foodgrains (i.e. wheat, rice, maize and tur) peaked at 5.0% in

2005-06 and of sugar at only 2.2%. This is in line with what various Committees mentioned earlier had foreseen regarding prospects of futures trading in commodities with significant government intervention. If, nonetheless, de-listing has adversely affected market sentiment regarding futures trading more generally, this must be because of the "go-stop" nature of government policy on the matter.

4. FUTURES TRADE AND PRICE MOVEMENTS

4.1 Overall year-on-year WPI inflation showed a consistent upward movement from mid-2006 to reach a high of 6.69% in the week ending 27th January, 2007. The 6% mark, last recorded in December 2004 (23.12.04), was breached in the first week of January (6.1.2007) after which it remained consistently above 6% for almost 3 months when it started softening in April 2007. Year-on-Year inflation as measured by the Consumer Price Indices (CPI-IW, CPI-AL, CPI-UNME) showed even larger rise, reaching 7.6%, 9.8% and 7.8% respectively in February 2007. None of the CPIs had recorded 6% inflation since 2001, but all crossed this mark by June 2006 and declined below this only after September 2007. This rise in inflation was generally attributed to price rise in agricultural commodities and, with agricultural GDP growth actually accelerating from 1.8% in 2001-05 to 4.9% during 2005-07, one of the causes for this was in turn attributed to greater price volatility following the opening up of futures trading in a large number of such commodities. Therefore, a two stage enquiry is needed: (i) to what extent was the 2006-07 inflation led by price rise in agricultural commodities, particularly food-grains; and (ii) whether inflation and price volatility in these commodities had increased following the introduction of futures trade.

Contribution of Agricultural Commodities in WPI & CPI Inflation

4.2 There are 12 'food grain' (cereals & pulses) items in the basket of WPI index, with 5.01% weight. Among these, Rice & Wheat have significant weight while weight of other items is individually small. Contribution of foodgrains to overall WPI inflation is determined by increase in WPI of these items and their weight in the overall WPI index. In January 2007, y-on-y inflation was very high for gram and urad (about 30%), high for wheat (14%) but quite low for rice (4.7%). WPI "foodgrains" inflation averaged 10.85%. This was higher than the broader group "Primary Food Articles" (9.52%) and much

higher than overall WPI inflation (6.37%). Consequently the contribution of 'Food grains' in WPI inflation in January 2007 was, at 8.34%, significantly more than their weight in the index. But, nonetheless, the magnitude of this contribution was small because of low weight of foodgrains in WPI.

4.3 The weight of food items, particularly of foodgrains, is much higher in the Consumer Price Indices. The CPI-AL assigns a weight of 69.15% to food items, of which the weight of cereals is 40.94% and pulses 3.39%. While overall CPI-AL rose 9.8% y-on-y in February 2007, the food component rose 11.8%, so that contribution of food was as high as 83.4%. The CPI-IW assigns weight of 57% to food, of which 20.47% is on cereals and 3.59% on pulses. The food index increased 12.2% y-on-y to February 2007 as against 7.6% increase in overall CPI-IW, implying a contribution of 74%. Of the three available consumer price indices, CPI-UNME assigns the lowest weight to food (45.61%) and to food grains (10.97% to cereals and 2.51% to pulses). But even so, the contribution of food to y-on-y inflation to February 2007 was as high as 67% since the food component increased 11.5% against 7.8% rise in the overall index. Even excluding perishable items (fruits, milk, meat, egg and fish), contribution was 48.6%, with foodgrains alone contributing 20.2% and with sizeable contributions also by edible oils and condiments & spices which are traded in futures markets.

4.4 Clearly, food and foodgrains inflation during the period considered was significantly higher than overall inflation by all price indices. But their contribution to inflation varies widely depending on weights assigned, being highest in CPI-AL which is pertinent for the poor and lowest in the WPI. In particular, the contribution of foodgrains to overall WPI inflation is relatively small and much less than to CPI inflation. This is because, unlike the CPIs, the WPI also includes intermediate and capital goods which do not enter directly into consumption. However, because of this, the WPI permits a wider look at agricultural goods since many of these do not directly enter the food basket but are used as intermediates.

4.5 There are 87 processed and non-processed agricultural commodities in the WPI basket accounting for a combined weight of 25.65%. Of these 66 are primary agricultural commodities and 21 are processed commodities. If we examine the contribution of these 87 commodities in the WPI inflation during January, 2007 when y-o-y inflation was 6.37%, their contribution was 31.54% against their weight of 25.65% in WPI basket. This

was 1.23 times their weight in WPI which indicates more than proportionate contribution in inflation.

4.6 Thus, as in case of food, considering all agricultural commodities shows higher inflation than overall WPI inflation. But, although this supports the view that the inflation in early 2007 was led by agricultural commodities, it is not possible to conclude that factors particular to these commodities were the only, or even major, reason behind the spurt in inflation. This is because manufactured products (with weight of 63.75% in WPI) also recorded inflation of around 6%. While some of this could be accounted for by cost-push from agriculture, other factors such as demand consequences of high growth in GDP and in money supply cannot be ruled out.

Price Rise in Agricultural Commodities

4.7 Notwithstanding that the contribution of agricultural commodities, particularly 'food grains', in WPI inflation was small due to relatively low weight, it is a fact that there was a significant upsurge in prices of some of the agri-commodities from the middle of 2006 to the first quarter of 2007. In view of their headline implications as also their impact on the poor, this deserves in-depth examination and monitoring.

4.8 In order to examine whether futures trade could have led to price rise in agricultural commodities, we have relied on WPI data as these are a closer proxy of producer prices of agricultural produce than retail prices. Of the 43 agricultural commodities that have futures trading, 24 commodities accounted for 98.7% of total value of futures trading of agricultural commodities in 2006-07. A list of these commodities along with the volume and value of trade in the year 2006-07 is given in **Table-2A**. It will be seen from **Table-2A** that, not only do these 24 commodities account for almost the entire volume of futures trading in agricultural commodities, just the top eight commodities account for about 84% of the total value of trade.

4.9 However, among these 24 commodities with preponderant share in volume of futures trade, 3 do not feature in the WPI basket at all. Guar seed, Guar gum and Mentha oil having a share of 29.6% in value of total future trading in agricultural commodities are significant omissions in the WPI basket, and could not be used in the price analysis. This shows that a very significant share of futures trading in agricultural commodities is accounted for by commodities that are insignificant for the overall price level in the

economy. Indeed, even the remaining 21 commodities, with weight of nearly 70% in agricultural futures trade, have a weight of only 11.73% in the total WPI basket and account for less than half of the weight of the 87 processed and unprocessed agricultural commodities that are included in the WPI.

4.10 A mapping was done of these 21 commodities with regard to the events of futures trade in these. It was observed that reasonable degrees of liquidity in most of these commodities came much after they were notified for futures trading. For some commodities, even after some liquidity was observed, this did not grow or stabilize continuously thereafter. After arriving at the month of the year when reasonable liquidity in trade in a specific commodity was gained, the WPI data was divided into two sub-sets of pre and post futures period having equal observations for that commodity. The month from which reasonable volume of futures trade was attained in the commodity is given as Statement X.

Table 2A: Volume & Value of Trading in Major Agri-commodities (2004-05 to 2007-08)

(Volume of Trading – in Lakh Tonnes, Value - in Rs. Crores)

Sl. No	Name of the Commodity	2004-2005		2005-2006		2006-2007		2007-08	
		Volume	Value	Volume	Value	Volume	Value	Volume	Value
I	**Agricultural Commodities**								
	Major Agricultural Commodities								
1	Guar seed	799.10	129522.98	1902.04	330439.50	1609.96	324881.42	670.48	123752.55
2	Chana/Gram	108.42	16754.59	1240.27	234774.10	1191.99	306794.19	381.48	93517.27
3	Soy Oil	249.58	101527.66	297.69	110229.65	401.51	176667.56	448.29	241588.02
4	Pepper	11.63	8334.28	11.56	8029.83	76.26	90727.61	71.97	105323.74
5	Jeera (Cumin seed)	3.61	2945.06	17.77	11822.97	69.15	67476.78	60.73	72929.87
6	Urad	65.23	10277.49	769.81	196904.49	164.65	53546.13	--	--
7	Mentha Oil	0.00	0.00	6.66	41533.49	8.56	52103.60	1.95	10051.68
8	Chillis	0.23	60.50	24.28	7487.16	71.87	38651.43	25.91	12461.14
9	Soy seed	74.48	9797.15	111.53	13859.67	189.16	26238.80	326.05	60746.07
10	Mustard Seed	107.42	19464.35	94.93	16631.52	114.61	22332.37	362.55	88233.78
11	Wheat	*36.95*	*2839.31*	194.26	15970.18	235.07	22179.56	0.15	15.02
12	Potato	0.00	0.00	8.01	579.17	256.53	15004.25	90.62	5525.92
13	Turmeric	4.49	1111.09	15.97	3943.46	65.00	14817.62	109.24	28147.52
14	Castor seed	82.21	14327.34	73.17	11713.12	80.75	14638.78	87.32	19572.71
15	Sugar	41.01	7737.30	139.99	26759.68	75.34	13690.22	177.06	24365.09
16	Guar Gum	28.83	13412.08	79.67	36986.05	25.88	13132.09	10.80	4940.50
17	Gur	68.14	7891.49	107.08	16441.32	81.84	11052.30	50.69	6242.82
18	Tur	0.37	60.47	231.19	41548.02	53.91	10697.27	---	---
19	Kapas	192.05	33317.12	182.78	30808.44	42.28	8256.56	41.47	9789.33
20	Rubber	4.80	2744.71	7.05	4830.48	8.45	8166.79	5.65	5119.94
21	Cardamom	0.12	420.56	0.11	292.72	1.64	7427.29	0.74	4072.04
22	Maize	2.03	109.69	16.98	927.23	65.19	4921.02	29.21	2300.70
23	Raw jute	28.71	3747.53	39.07	5471.97	10.66	1426.49	16.38	2164.88
24	Rice	2.40	396.71	9.33	1471.05	2.36	456.03	--	--
(A)	**Total of Above**	**1911.80**	**386799.46**	**5581.20**	**1169455.27**	**4902.62**	**1305286.16**	**2968.74**	**920860.59**
(B)	**Other Agri-Commodities**	27.58	3388.90	237.60	22771.60	121.30	11839.05	**176.49**	**20500.48**
(A+B)	**Total Agri-Commodities**	**1939.38**	**390188.4**	**5818.8**	**1192226.9**	**5023.92**	**1317125.21**	**3145.23**	**941361.07**
II	**Bullion & Metals**	2.72	179671.1	58.45	779398.35	190.88	2128985.18	**451.92**	**2623666.79**
III	**Energy**	0	1900.14	908.96	181882.64	914.34	230711.92	**1976.22**	**500942.14**
IV	**Plastics**	0	0	2.505	1614.16	0.15	104.36	**0.04**	**19.48**
Grant Total (I to IV)		**1942.1**	**571759.6**	**6788.71**	**2155122**	**6129.29**	**3676926.67**	**5573.41**	**4065989.47**

NB: Shaded Figures indicate highest value during the period of three years 2004 -05 to 2006-07

Table 2.B: Annualized Trend Growth Rate and Volatility of WPI of Selected Agricultural Commodities in which Futures are traded

Sl. No.	Name of the Commodity	WPI Weights (1993-94)	Monthly Data				Weekly Data			
			WPI Trend Growth Rate (%)		WPI Volatility (%)		WPI Trend Growth Rate (%)		WPI Volatility (%)	
			Pre-Futures	Post-Futures	Pre-Futures	Post-Futures	Pre-Futures	Post-Futures	Pre-Futures	Post-Futures
1	Guar Seed	- -	- -	- -	- -	- -	- -	- -	- -	- -
2	Chana/Gram	0.223650	-9.2	20.9	10.6	11.3	-9.1	20.8	9.2	9.7
3	Soy Oil	0.178380	21.8	-1.6	14.1	6.1	21.4	-0.9	17.0	7.0
4	Pepper	0.022920	-22.5	8.9	27.4	30.9	-22.3	9.0	26.1	30.6
5	Jeera / Cumin Seed	0.102880	-5.0	8.1	12.9	16.1	-5.0	8.8	17.7	17.7
6	Urad	0.096190	-7.9	32.9	9.0	15.7	-7.7	32.7	10.9	18.4
7	Mentha Oil	- -	- -	- -	- -	- -	- -	- -	- -	- -
8	Chillis	0.188660	-16.4	42.9	15.0	17.1	-16.3	42.3	15.1	21.5
9	Soybean/ Soy Seed	0.446140	12.2	-11.3	15.1	21.5	12.1	-11.4	3.6	4.0
10	Rape Seed / Mustard Seed	0.580660	18.3	0.1	12.6	9.4	18.2	0.2	11.5	8.6
11	Wheat	1.384080	2.3	9.6	5.3	7.3	2.3	9.5	4.9	6.1
12	Potato	0.256470	28.9	11.7	49.6	47.5	29.0	11.3	44.8	41.5
13	Turmeric	0.076500	20.2	-8.2	13.7	8.5	20.2	-8.2	18.5	16.6
14	Castor Seed	0.085720	2.5	-2.2	13.5	12.7	2.4	-1.5	21.0	14.0
15	Sugar	3.618830	1.2	3.2	7.7	7.6	1.3	3.0	5.9	6.0
16	Guar Gum	- -	- -	- -	- -	- -	- -	- -	- -	- -
17	Gur	0.059790	25.4	-0.6	9.6	11.6	21.6	-0.6	17.0	12.0
18	Tur / Arhar	0.134660	2.8	5.8	9.0	7.7	2.9	5.8	9.1	10.0
19	Raw Cotton / Kapas	1.356740	-21.7	5.2	12.9	10.6	-21.4	5.2	9.5	15.9
20	Rubber	0.150800	10.5	20.1	16.0	21.1	10.4	19.9	16.5	21.0
21	Cardamom	0.024940	-20.3	4.6	11.7	19.5	-20.2	4.7	25.7	29.9
22	Maize	0.185010	-2.4	9.6	11.4	6.8	-2.3	9.7	10.4	9.2
23	Raw Jute	0.108680	-11.4	10.8	13.4	13.6	-11.3	10.7	17.5	13.9
24	Rice	2.449070	-0.4	3.0	3.6	2.5	-0.4	2.9	3.1	2.3
Total above (21 Commodities)		**11.730770**	**4.15**	**5.05**	**3.95**	**3.57**	**4.18**	**5.04**	**3.22**	**3.29**
Primary Agricultural Products (Food & Non-food articles)		**21.54**	**4.19**	**4.99**	**3.64**	**4.49**	**4.16**	**4.99**	**4.07**	**4.27**
All Agricultural Commodities including Processed		**25.397**	**3.92**	**4.74**	**3.32**	**3.91**	**3.91**	**4.73**	**3.67**	**3.83**
CPI – IW			**3.51**	**5.50**	**1.80**	**2.21**				
CPI – AL			**3.14**	**6.20**	**1.74**	**2.77**				
CPI – UNME			**3.44**	**5.70**	**1.51**	**1.69**				

Note: - - Not in WPI basket

Analysis of Price Data

4.11 Trend growth of WPI and its volatility for pre and post futures period of these 21 agricultural commodities are presented in Table No.2B. Both monthly and weekly WPI data have been used for analysis and the rates have been annualized.

Inflation

4.12 Both monthly and weekly data show that the annual trend growth rate in prices was higher in the post-futures period in 14 commodities, viz. Chana, Pepper, Jeera, Urad, Chillies, Wheat, Sugar, Tur, Raw Cotton, Rubber, Cardamom, Maize, Raw Jute and Rice; and lower in 7 commodities, viz. Soy oil, Soy bean, Rape seed / Mustard seed, Potato, Turmeric, Castor seed, and Gur. The first set of commodities account for 48.2% of futures trading volume in agriculture and have a weight of 10.1% in the WPI. Corresponding figures for the second set are 21.3% and 1.7%. The number of commodities in which inflation accelerated is double the number in which this decelerated, and their weights are also much higher in both futures trading and in the WPI. Also, significantly, all sensitive commodities (i.e. food grains and sugar) recorded some acceleration in inflation after the start of futures trading.

4.13 However, a revealing feature of this data is that of the 14 commodities in which acceleration took place in post-futures period, 10 had suffered negative inflation during the pre-futures period. It is possible in such cases that the acceleration in growth rate of WPI in these commodities is simply rebound and catch-up with the trend, which in turn could have been aided by more efficient price discovery. Similarly, of the 7 commodities in which WPI growth was lower post-futures, 6 had unusually high pre-futures inflation at over 10%. In these cases, too, it is possible that what is being observed is simply reversion to a more normal level of inflation. In both cases, there is the problem that the period during which futures markets have been in operation is much too short to discriminate adequately between the effect of opening up futures markets and what might simply be normal cyclical adjustments.

4.14 Nonetheless, some discrimination is possible if acceleration/deceleration is assessed requiring: (i) that the change in growth rate following introduction of futures was by some minimum amount (say 5 percentage points); and rule out cases of catch-up or reversion to normal inflation by also requiring: (ii) that, following the change, the

growth rate averaged over both before and after was above/below some normal inflation range (say 0 to 5%). By this criterion, no commodity shows deceleration and five, Chana, Chillies, Urad, Wheat and Rubber, show clearer evidence that inflation did accelerate following introduction of futures. These 5 commodities account for 32% of total value of futures trading in agricultural commodities but have a weight of only 1.9% in WPI. However, importantly, three of these five are food grains and include two of the four commodities that were de-listed in early 2007.

4.15 An analysis was also carried out at macro rather than specific commodity level taking August 2004 as the cut-off point to divide pre-futures and post-futures periods. This is the middle month of the second quarter (July-Sept) of 2004-05 when, taking acceleration in total futures trading volume as the barometer, such trading picked up reasonably. After taking equal observations for both pre and post futures period, trend growth rates for both periods were calculated. This was done for (i) the weighted average WPI of the 21 selected commodities that have significant futures trading, (ii) all primary agricultural goods (i.e. Food and Non-Food Articles in the WPI Primary Articles Group) and (iii) the weighted composite index of the 87 processed and unprocessed agricultural commodities. This was also done for the three retail Consumer Price Indices, i.e. CPI-IW, CPI-AL & CPI-UNME.

4.16 The observed acceleration is quite high at 3 percentage points for CPI-AL, moderate at around 2 percentage points for CPI-IW and CPI-UNME, but low at less than 1 percentage point in case of all three indices derived from WPI. Moreover, the composite WPI index of the 21 selected commodities with futures trading did not accelerate more than WPI for all agricultural commodities. Thus, although inflation clearly increased post-futures in some sensitive commodities that have higher weight in consumer prices indices, it is not possible to make any general claim that inflation accelerated more in commodities with futures trading. Similarly, although price volatility appears to have increased post-futures by these macro indices, this is less true of the composite index of these 21 traded commodities than of other indices.

Volatility

4.17 Price volatility (i.e. extent of price fluctuations around trend) is important because reduction in this, along with better price discovery, is the main benefit expected from futures trading. Indeed, NCDEX, the leading exchange for futures trade in agricultural

commodities, has presented the Committee with analysis of daily spot price volatility of commodities for which it offers futures contracts, arguing that such volatility has reduced significantly. **Table-3** gives details of daily volatility from NCDEX. This is available for 19 of the 24 traded commodities selected earlier, and it may be seen that volatility was lower in 15 commodities during the post-futures period, higher in 3 commodities and remained same in one. If 25% change either way is taken as a confidence band, daily price volatility did not increase in any commodity and declined in 13 commodities, accounting for 41.9% of volume of agri-commodity futures trading and with 3.7% weight in WPI. These weights are however somewhat less than corresponding weights (51.2% and 4.0%) for the remaining 6 commodities where changes in daily price volatility fall within the confidence band.

Table-3: Daily Volatility Analysis

(Percentage)

S. No.	Name of the Commodities	Pre-futures	Post-futures	No of obs Pre-futures	No of obs Post-futures
1.	Potatoes	245.9	68.4	441	441
2.	Turmeric	90.7	15.3	643	792
3.	Chilly	78.5	43.9	430	430
4.	Jeera	47.7	13.8	665	665
5.	Wheat	43.6	17	814	814
6.	RM seed	26.5	11.4	938	938
7.	Maize	29.6	14.6	689	689
8.	Urad	36.7	25	312	753
9.	Soybean	27.5	16	792	792
10.	Pepper	28.2	17.8	970	970
11.	Guar seed	38.5	28.9	895	895
12.	Soybean oil	18.1	9.7	939	939
13.	Gur	27.7	19.5	689	689
14.	Rubber	24	17.5	574	1062
15.	Sugar	10.8	8.2	818	818
16.	Chana	22.6	22.6	815	895
17.	Castor seed	16.9	17	796	1011
18.	Raw Jute	12.9	16	689	689
19.	Guar gum	40.3	43.4	824	824
20.	Kapas	NA	18.5	NA	84
21.	Tur	NA	23.5	NA	547
22.	Cardamom	NT	NT		
23.	Rice	NA*	NA*		
24.	Mentha Oil	NR	NR		

Source: NCDEX

Number of observations in pre- and post-futures would be different on account of non-availability of data in the pre-futures period.

NA: not available
NT: not traded on NCDEX
NA: Contracts have been changed for rice and not continuous*
NR: not reported

4.18 However, the impressive volatility decline claimed from NCDEX daily price data is not found from WPI data for the 21 selected commodities used in Table 2B. This shows weekly and monthly price volatility increasing in 10 commodities after introduction of futures trading, remaining unchanged in two, and declining in 9. Also, cases of volatility increase were more among commodities that rank high by volume of futures trading, so that volatility increased in commodities accounting for about 50% of agricultural futures trade, and declined in commodities accounting for only around 20% of such trade. This is so by both weekly and monthly WPI data although some commodities, Raw Cotton, Raw Jute, Tur and Gur show opposite directional change in monthly and weekly price volatility (see cross-tabulation in Table 4).

Table 4 – Cross Tabulation for monthly and weekly data on the basis of volatility

(No. of commodities)

		Weekly Data			
		Rise	Same	Fall	Total
Monthly Data	Rise	8	1	1	10
	Same	--	1	1	2
	Fall	2	-	7	9
	Total	10	2	9	21

4.19 Given these conflicting results from daily as against weekly and monthly data, no strong conclusion can be drawn on whether introduction of futures trade is associated with decrease or increase in spot price volatility. Daily, weekly and monthly volatility all declined in five cases (Soy Oil, Rape/Mustard Seed, Turmeric, Potato and Maize) but these account for only 17.3% of agricultural futures trading and 1.3% of WPI. With the exception of maize, these are all cases where pre-futures inflation was high and decelerated subsequently. In fact, if WPI monthly data are considered, the expected reduction of volatility following introduction of futures trading was largely limited to those commodities where inflation decelerated. A cross-tabulation (Table 5) of number of commodities by changes in inflation (trend growth rate) and monthly volatility shows that volatility declined in 5 of the 7 commodities where inflation decelerated in post-futures

period. On the other hand, monthly volatility reduced in only 4 out of the 14 commodities where inflation accelerated. In particular, volatility *increased* by both weekly and monthly WPI data, though not on basis of NCDEX daily data, in all the five cases (Chana, Chillies, Urad, Wheat and Rubber) which were identified earlier as those where inflation did accelerate significantly after introduction of futures.

Table–5: Cross Tabulation of post-future Trend Growth Rate and volatility (Monthly data)

(No. of commodities)

Volatility/ Trend Growth	Higher	Same	Lower	Total
Accelerated	8	2	4	14
No Change	--	--	--	--
Decelerated	2	--	5	7
Total	10	2	9	21

4.20 In this context of different results by daily and monthly volatility it should be noted that, since clearing takes place on a daily basis, monitoring daily volatility is not only preferable but also necessary for purposes of futures market operations and day-to-day management of credit risk. However, what concerns farmers more is volatility relating to the relatively longer periods that separate sowing, harvesting and sale. If farmers are to gain from futures trading without participating in such trading directly, a necessary condition is that such trading should reduce, through price discovery and arbitrage, the ratio between the highest and lowest (i.e. harvest) price observed during a crop year. But in several cases (i e Chana, Chillies, Urad and Wheat; see Table 6) this ratio *increased* after introduction of futures trading, returning partially towards normal levels only after inflation subsided in 2007. This pattern not only helps to explain differences between changes in monthly and daily volatilities, but is also indicative of the limited efficiency of futures markets as they currently function. Although no general or definitive association can be claimed between introduction of futures and spot price volatility, this evidence suggests that farmers who normally sell at harvest gained much less than proportionately, compared to those who trade post-harvest, even in case of crops whose prices did clearly increase more subsequent to introduction of futures trading.

Table - 6: Ratio of Highest to Lowest Monthly WPI during year

	2001	2002	2003	2004	2005	2006	2007
Wheat	1.03	1.04	1.07	1.08	1.09	1.17	1.08
Urad	1.17	1.10	1.08	1.09	1.42	1.44	1.34
Chana	1.27	1.19	1.05	1.03	1.27	1.42	1.14
Chillies	1.09	1.13	1.22	1.44	1.28	1.63	1.22
Raw Rubber	1.32	1.23	1.20	1.26	1.33	1.41	1.22

Underlying fundamentals and price behaviour: The delisting experience

4.21 Although inflation in certain sensitive commodities did accelerate after introduction of futures trading it does not necessarily follow that introduction of futures trading was the causative factor. The price discovery expected from futures trading should ideally lead to better utilization of available information regarding how supply and demand conditions are likely to evolve; and arbitrage, through speculation and hedging, should ideally affect spot prices only to the extent of bringing these in line with evolving fundamentals and the cost of holding physical stocks. Commodity Exchanges have argued before the Committee that the de-listing of certain commodities from futures trade in early 2007 was ill-informed, since futures prices of these commodities were only reflecting underlying fundamentals.

4.22 Futures trading in 'urad' and 'tur', which were quite liquid on NCDEX platform, were de-listed on 23rd January, 2007. On date of delisting 4 deliveries month contracts, February, March, April and May 2007 were running. The 'urad' futures prices as on 23rd January 2007 were in backwardation, predicting a future fall in spot prices (Table 7). In fact, spot prices did fall after de-listing from Rs. 3551 on 23rd January 2007 to Rs. 2553 on 4th August 2007. As regards 'tur', except the February 2007 contract, futures prices at time of de-listing were in contango predicting rise in spot prices. In fact, spot prices continued their upward trend even after de-listing.

4.23 In case of wheat and rice no new trades were allowed post 27-2-2007. Only offsetting contracts of existing open interest were allowed. However, although listed on National exchanges, rice was hardly traded. As regards wheat it was liquid on NCDEX

prior to 27th February 2007, when seven contracts viz., March April, May, June, July, August & September 2007 were running. Data in Table 8 shows that futures prices in all these contracts were in backwardation at the point of de-listing, with extent of backwardation lower in further contracts, indicating that spot prices were predicted to fall on arrival of new harvest in April-May and rise moderately thereafter. The post de-listing spot prices recorded by the NCDEX shows that after a brief decline in prices in post harvest period of April and May prices started firming up to above Rs.1000 per quintal in July and August even though there were no new futures trade in this commodity.

TABLE 7 : PRICES OF URAD & TUR

A. Urad **Rs .per 100 kg.**

Date	SPOT & FUTURES PRICES AT NCDEX						WPI (93-94'=100)*
	SPOT	FUTURES CLOSING PRICES FOR CONTRACT EXPIRING ON					
		20-Feb-07	20-Mar-07	20-Apr-07	18-May-07	20-Jun-07	
23-Jan-07	3550.70	3234.00	3145.00	3005.00	2939.00	2905.00	393.5 (20/1/07)
23-Feb-07	3202.70						398.9 (24/2/07)
23-Mar-07	3235.00						381.97(24/3/07)
23-Apr-07	3060.00						380.0 (21/4/07)
23-May-07	2575.00						360.4 (26/5/07)
23-Jun-07	2742.65						363.7(23/6/07)
23-Jul-07	2700.00						362.4 (21/7/07)
4-Aug-07	2553.20						

B. TUR **Rs. Per 100 Kg**

Date	SPOT & FUTURES PRICES AT NCDEX						WPI(93-4'=100)*
	SPOT	FUTURES CLOSING PRICES FOR CONTRACT EXPIRING ON					
		20-Feb-07	20-Mar-07	20-Apr-07	18-May-07	20-Jun-07	
23-Jan-07	2337.20	2281.00	2477.00	2524.00	2563.00	2624.00	188.4(20/1/07)
23-Feb-07	2244.00						193.2(24/2/07)
23-Mar-07	2302.65						190.0(24/3/07)
23-Apr-07	2362.50						195.6(21/4/07)
23-May-07	2325.00						196.6(26/5/07)
23-Jun-07	2490.00						196.2(23/6/07
23-Jul-07	2669.40						199.5(25/7/07)
4-Aug-07	2600.00						

Note: * - Data relates to the week ending the date given in parenthesis
Source: i) NCDEX, ii) Office of Economic Adviser, Ministry of Commerce & Industry, Govt.of India

TABLE 8 : PRICES OF WHEAT

Wheat **Rs. Per 100 Kg**

Date	SPOT & FUTURES PRICES OF WHEAT AT NCDEX						WPI (93-94 = 100)*
	SPOT	FUTURES CLOSING PRICES FOR CONTRACT EXPIRING ON					
		20-Mar-07	20-Apr-07	18-May-07	20-Jun-07	20-Jul-07	20-Aug-07	
27-Feb-07	1039.85	955.20	882.20	886.40	904.80	918.80	935.00	231.8 (24/2/07)
27-Mar-07	1057.85		1005.00	965.00	960.00	977.00	972.00	224.9(24/3/07)
27-Apr-07	959.20			975.00	960.00	980.00	1001.20	217.2(28/4/07)
26-May-07	917.55				940.00	960.00	1001.20	216.6(26.5.07)
27-Jun-07	975.00					985.00	1001.20	216.2 (30/6/07)
27-Jul-07	1052.45						1041.00	223.5 (26/7/07)
4-Aug-07	1023.95						1041.40	

Note: * - Data relates to the week ending the date given in parenthesis
Source: i) NCDEX, ii) Office of Economic Adviser, Ministry of Commerce & Industry, Govt.of India

4.24 Besides presenting this evidence to show that outcomes after de-listing were in line with predictions made by futures markets on eve of de-listing, the Commodity Exchanges have also argued that the price rise that occurred in these commodities before de-listing can largely be explained by supply-side factors, i.e. domestic production and foreign trade. This view contrasts with that of critics of Futures Markets who argue that speculative activity increased with introduction of such markets and that this in turn led to unusual price movements. In de-listing tur, urad, rice and wheat, the government appears to have implicitly accepted the latter view at least in case of these commodities. The Committee has therefore examined the movement of some fundamentals in the case of these commodities.

4.25 The factual position on production and prices of these commodities during 2003 to 2007, along with international trade and government stocks is as follows:

(i). As against past normal production (i.e. average 1995-96 to 2002-03) of 2.36 million tonnes, actual production of **tur** was 2.36 and 2.35 million tonnes in 2003-04 and 2004-05. This rose to a record 2.74 million tonnes in 2005-06, but fell to 2.31 million tonnes in 2006-07. Net imports moved in the narrow range of 0.23 to 0.34 million tonnes throughout the period. Since tur output from any agricultural year (July-June) is largely available for consumption only in the next calendar year (January-December), total supply from production and imports was near normal in 2004 and 2005, rose to above normal in 2006, and fell below normal in 2007. Calendar year inflation of WPI tur (i.e. year-on-year in December) was 10.2%, 9.5%, (-)4.9%, 6.6% and 15.2% in 2003, 2004, 2005, 2006 and 2007 respectively;

and the real WPI of tur (i.e. WPI tur relative to WPI all commodity, 1993-94=100) averaged 96.7, 98.5, 87.8, 87.2 and 94.1 during these years. Except possibly the price decline in 2005 (which followed higher than normal price rise in 2003 and 2004), these price movements are broadly in line with movements in supply. In particular, real prices of tur were lower during 2005 and 2006 (when futures trading was significant) than in either 2003 (before futures) or 2007 (after de-listing). *This evidence contradicts the claim that futures trading caused excessive increase in tur prices*.

(ii). Against average annual **rice** production of 83.39 million tonnes during 1995-96 to 2002-03, rice production in 2003-04 was 88.53 million tonnes. This dropped to 83.13 million tonnes in 2004-05, but rose subsequently to 91.79 million tonnes in 2005-06 and to a record 93.35 million tonnes in 2006-07. Rice exports were 3.4, 4.8, 4.1 and 4.7 million tonnes in 2003-04, 2004-05, 2005-06 and 2006-07 respectively; and Government Rice Stocks were 11.7, 12.8, 12.6, 12.0 and 11.5 million tonnes as on January 1 of 2004, 2005, 2006, 2007 and 2008 respectively. Taking exports and government stock change into account, total rice availability in the domestic market declined by over 5 million tonnes in 2005 but recovered well beyond the 2004 level in 2006 and increased further by more than 1.5 million tonnes in 2007. Calendar year rice WPI inflation rates in 2003, 2004, 2005, 2006 and 2007 were (-) 1.3%, 1.7%, 2.8%, 4.4% and 7.1% respectively; and real WPI of rice (1993-94=100) averaged 97.7, 90.3, 89.6, 87.4 and 88.3 in these years. Since the real WPI of rice declined throughout the period when futures trading was allowed, and increased only after de-listing, *speculation in futures markets cannot be said to have exerted any strong upward pressure on spot prices of rice*. This of course also implies that farmers derived no gain from futures trading but, in any case, futures trading in rice had not attained significant volume before de-listing. Nonetheless, it should be noted that movements in WPI rice during this period did not correlate well with movements in availability. In particular, neither the sharp decline in availability in 2005 nor the record production that became available in 2007 are reflected in corresponding WPI changes, suggesting that movements in private stocks may have played a significant role. In this context, it may also be noted that domestic and world rice prices appear to have become somewhat more correlated recently, from negligible correlation earlier. The IMF reference rice world price declined 0.4% in calendar 2005 before increasing 11.5% and 20.6% in calendar 2006 and 2007 respectively. Movements in WPI and availability can be

reconciled if private stocks reduced in response to weak world prices in 2005 and were built up again in 2007 responding to world price increase.

(iii). Against average annual **urad** production of 1.37 million tonnes during 1995-96 to 2002-03, production in 2003-04 was 1.47 million tonnes. This declined to 1.33 million tonnes in 2004-05 and further to 1.25 million tonnes in 2005-06, before recovering to 1.42 million tonnes in 2006-07. DGCIS reports imports of urad (*vigna mugno*) at 0.21, 0.08, 0.08 and 0.33 million tonnes during 2003-04, 2004-05, 2005-06 and 2006-07, somewhat lower than trade estimates of 0.17, 0.13, 0.33 and 0.29 million tonnes respectively. Calendar year WPI urad inflation was (-)10.2%, (-)4.1%, 35.8%, 41.5% and (-)28.5% in 2003, 2004, 2005, 2006 and 2007 respectively; and the real WPI of urad (1993-94=100) averaged 126.6, 116.9, 124.7, 190.8 and 169.9 during these years. Thus, *Urad inflation did flare up very unusually in the period when futures' trading was active* (August 2004 to January 2007). But this was a period of below normal production and, although higher imports cushioned supply, import unit values rose 48.7% and 37.7% in 2005-06 and 2006-07.

(iv). Against average 1995-96 to 2002-03 annual production of 69.21 million tonnes, **wheat** production in 2003-04 was 72.15 million tonnes. This fell to 68.64 million tonnes in 2004-05, recovered marginally to 69.35 million tonnes in 2005-06 and then rose sharply to 75.81 million tonnes in 2006-07. Being a Rabi crop, production from any agricultural year (July-June) is available for use only in the next financial year (April-March). As a result, the high 2006-07 output was not available till after de-listing in 2007and per capita availability from production was below normal in Financial Years (FY) 2005-06 and 2006-07. But net exports had declined from 4.1 million tonnes in 2003-04 to 2.0 million tonnes in 2004-05 and further to 0.7 million tonnes in 2005-06, turning into net imports of 5.8 million tonnes in 2006-07. Government stocks as on April 1 were 6.9, 4.1, 2.0 and 4.7 million tonnes in 2004, 2005, 2006 and 2007. Taking net exports and public stock changes into account, market availability of wheat in FY 2005-06 had declined by around 2.5 million tonnes from the near normal level of FY 2004-05 but this had recovered in FY 2006-07, before increasing further by over 4 million tonnes in FY 2007-08. However, fiscal year wheat WPI inflation (i.e. year-on-year to March) which had jumped from (-) 0.7% in 2004-05 to 11.9% in 2005-06 declined only modestly to 7.2% in 2006-07. In calendar year terms (i.e. y-on-y December), inflation rates of wheat WPI were 4.8%, 5.1%, 4.5%, 19.1% and (-)1.7% in 2003, 2004, 2005, 2006 and 2007 respectively, and annual average real WPI (1993-94=100) for wheat in

these years were 103.1, 99.9, 96.3, 103.9 and 105.8. *Wheat prices did behave unusually and annualized wheat WPI inflation at 9.8% during the 30 months when futures trading was liquid (August 2004 to February 2007) stands in sharp contrast to inflation in either the previous 30 months (1.5%) or in the year subsequent to de-listing (0.3%, y-on-y February 2008).*

4.26 Besides examination of fundamentals of these four commodities in para 4.33 above, a short analysis of few other sensitive commodities of futures trading is given in Appendix II.

5. FINDINGS OF IIMB AND OTHER STUDIES

5.1 FMC had commissioned a study by the Indian Institute of Management, Bangalore (IIMB) to study the impact of Futures Trading in some important agricultural commodities. This and some other recent academic studies have been considered in detail by the Committee in view of the evidence above that inflation did increase in some commodities after introduction of futures trading and that spot price volatility did not decline as unambiguously as claimed by the Commodity Exchanges. Going beyond "before and after futures" comparisons of changes in trend growth of spot prices and their variability, these studies attempt to examine how spot price movements are related to futures markets activity and outcomes, and also to assess the efficiency of futures markets regarding price discovery and risk management.

5.2 The summary findings of the draft Report of IIMB are in **Appendix-I**. Only those commodities in which future trading had attained reasonable volume were chosen for study. These commodities are: gram, sugar, guarseed, wheat, urad and tur. The first conclusion of this study is that all these crops, except sugar, witnessed higher price increase in the post-exchange period compared to the pre-exchange period. However, as the study notes, sugarcane prices are to a large extent controlled by government and sugar prices play little role in determining the sugarcane prices, though they affect the payment capacity of the sugar mills and the prices to be offered for the next year. In case of guar grown mainly in the arid regions of Rajasthan, a normal monsoon gives a production that would meet the demand of guar seed for two to three years. The price increase in the year 2005-06 followed low carry-over stocks and increased export demand. In case of wheat, the high increase in prices after 2005 followed low production and low stock availability

with the government. Tur showed a sharp increase in prices during 2006 following low stocks and production. Urad also showed continuous production decline 2004 onwards and a rise in the prices. Changes in fundamentals (mainly from the supply side) were thus found important in causing the higher post-futures price rise, with government policies also contributing, and the role of futures trading remains unclear.

5.3 Other recent studies come to similar conclusions. For example, Nath and Lingareddy (2008)[1] find that both average price change and spot price volatility of urad, gram and wheat were higher by statistically significant margins during October 2004 to January 2007 as compared to either the pre-futures period January 2001 to September 2004 or during February 2007 to October 2007 when futures trading in some of these commodities was suspended. They also report tests of causality that show that the volume of futures trading had positive and significant causal impact on both the average level of spot prices and their volatility in case of wheat and urad though not in case of gram. Nonetheless, since some other tests were inconclusive, they concluded that while futures trading did lead to increase in urad prices there was ambiguity in case of wheat, probably because of fall in supply.

5.4 The IIMB study also finds that spot price volatility increased after introduction of futures in case of wheat and urad. However, it does not find any major change in volatility for gram, excepting an abnormal rise in FY 2006-07, or for tur and sugar. In case of guar seed, volatility was in fact found lower after introduction of futures trade. In an interesting extension to this, the study found evidence that (i) increased spot price volatility (especially for wheat but also of gram) was associated with an increase in seasonality of prices so that farmers gained less than traders; and (ii) a tendency for retail margins to increase so that volatility increase was even more for retail prices than wholesale prices. In case of sugar also, although volatility of spot wholesale prices did not increase with introduction of futures, retail price volatility did increase.

5.5 These somewhat mixed results from the IIMB study on spot price volatility after introduction of futures trading fit better with the results reported earlier using WPI and CPI data than with claims of a general significant reduction in price volatility made by the Exchanges. In another study, covering wheat, sugar, turmeric, raw cotton, raw jute

[1] Nath, G.C. and T. Lingareddy (2008): "Commodity Derivative Market and its Impact on Spot Market", Available at SSRN: http://ssrn.com/abstract=1087904

and soybean oil, Sahi (2006)[2] found that while the nature of spot price variability may not have changed significantly with onset of futures trading[3], certain findings were consistent with destabilizing effect of futures trading on agricultural commodity markets. For example, unexpected increases in futures trading volumes were found to have a significant unidirectional causal effect increasing spot price volatility in all these commodities except raw cotton. Similarly, a causal effect was found from unexpected increase in open interest to increased spot price volatility for all these commodities except raw cotton and sugar. Although apparently contrary to the usual view that more liquidity should reduce volatility, these results are in line with the lead-lag relationship between futures trading activity and spot price volatility found recently for most major agricultural commodities in United States by Yang et.al. (2005)[4]. In the Indian context too, this obtains support from the subsequent study by Nath-Lingareddy already referred to. Such evidence relating to *unexpected* changes in futures markets growth over a rather short period of time do not constitute a case against orderly growth of futures markets. But it does suggest that excessive speculative activity in futures markets *can* destabilize spot prices and therefore warns against aggressive attempts to expand futures trading, especially if driven not by those who manage price risks in physical trade by hedging in futures markets but by speculators or others based on exaggerated claims regarding futures markets efficacy.

5.6 Given this, an important finding of the IIMB study is that many contracts traded on Indian Commodity Exchanges do not satisfy a fairly minimal condition for these to be attractive for hedging by those holding physical commodities. A generally accepted measure of whether a futures contract is attractive for hedging is its *basis risk*. Here *basis* is defined as the observed difference between spot and futures prices, and basis risk is

[2] Sahi, Gurpreet S. (2006): "Influence of Commodity Derivatives on Volatility of Underlying" (2006)". Available at SSRN:http://ssrn.com/abstract=953594

[3] In fact, earlier studies had indicated that introduction of futures trading had reduced spot price variability for two of these commodities. See Singh, Jatinder Bir (2000): "Futures Markets and Price Stabilization: Evidence from Indian Hessian Market", http://www.sasnet.lu.se/EASASpapers/8JatinderSingh.pdf; and Nitesh Ranjan (2005): "Role Of Commodity Exchanges, Futures & Options - A Case Study On Soya Oil", Occasional paper 46, Department of Economic Analysis and Research, NABARD

[4] Yang Jian, Brian Balyeat R and David J. Leatham (2005): "Futures Trading Activity and Commodity Cash Price Volatility", Journal of Business Finance Accounting, Vol 32, Nos 1 & 2, pp. 297-323

measured by variance of this basis. Hedging can reduce price risks of commodity holding if basis risk is less than price risk (i.e. variance of spot prices), and becomes more attractive the lower the basis risk. The IIMB study found that not only was basis risk high for commodities studied, this was higher than price risk for many contracts. Only in case of tur was basis risk less than price risk in all contracts studied, while in case of wheat, sugar and urad desi, basis risk was higher than price risk for majority of contracts. Similarly, Lokare (2007)[5], reports basis risk exceeding price risk in majority of contracts for gur, potato, rubber, cotton, mustard and wheat; and no commodity where all contracts had lower basis risk than price risk. This is important since with Indian Commodity Exchanges offering so many contracts that are not suited for hedging by holders of physical commodities, not only are these contracts likely to be ineffective in being able to transfer price risk between those holding commodities and others, the Exchanges themselves are prone to being dominated more by purely speculative activity.

5.7 Besides low basis risk, efficiency of futures markets requires: (i) that spot and futures prices should be co-integrated (i.e. have a long-run equilibrium relationship which ensures that they do not diverge beyond bound); and (ii) that futures prices should be unbiased predictors of future spot prices except for reasonable risk premium (i.e. futures and spot prices should tend to move proportionately, with the basis having a stable time profile). Since exchanges and the regulator are now usually successful in ensuring that futures and spot prices converge at end of every contract, co-integration is generally observed although not necessarily for all months. In this sense, as Lokare (2007) notes, "markets are marching in the right direction of achieving improved operational efficiency, albeit, at a slower pace".

5.8 However, matters are less reassuring on whether futures prices in India satisfy requirement (ii), which is the really critical issue if futures trading is to serve the goal of price discovery and risk management. For example, requirement (ii) implies that variances of spot and futures prices should be equal. But Lokare who tests for this, reports results that show that the only commodities where most contracts satisfied this were pepper and rice. For all other commodities, either the variance of spot price is much larger than that of futures (gur, potato, sugar and sacking) implying low efficiency of futures in price discovery; or variance of futures price is much higher than of spot (rubber and wheat) implying too much speculation in futures markets; or a mix of both these

[5] Lokare, S.M.: "Commodity Deriviatives and Price Risk Management: An Empirical Anecdote from India", Reserve Bank of India Occasional Papers, Monsoon 2007

extremes (castor seed, cotton and mustard). The IIMB study uses an Index of Market connection to study the integration between spot and futures prices and likelihood of price discovery, supplementing this with an analysis of volatility transmission across the two markets. Although it finds some evidence for volatility transmission, it reports very poor integration of the two markets in all the commodities studied and therefore concludes that "futures may not have served the purpose of the risk management".

5.9 Despite these rather negative results on functioning of futures markets, the IIMB study does highlight one very significant positive development following the recent growth of modern Exchanges. It notes that the growth of these Exchanges appears to have helped in integrating geographically separated markets and that this may be due to the fact that they may be playing the role of reference markets. In the case of chana, sugar, wheat and tur there is improvement in correlation between weekly price changes in different wholesale and retail markets in the Post Exchange period. In fact, apart from noting a reduction in the spot price volatility in case of guar seed, this is the only significant positive observation that the study has made of the situation after the introduction of futures markets.

6. STEPS TO MINIMIZE THE POTENTIAL RISKS OF FUTURES TRADING

6.1 The above analysis indicates that the current evidence available does not provide any conclusive evidence about whether there is any causal relationship between futures trading and rise in prices of the agricultural commodities. However, there are concerns and apprehensions about futures trading leading to price rise. This is in fact true not only in India but also in the rest of the world. Although there is a large body of literature which indicates that futures trading is associated with low volatility of spot prices-intra seasonal, inter year and long term, and help in production planning of these commodities, more recent evidence is mixed even in the US. In view of these markets having a potentially important role in efficiency of the market in free and liberalized economy, it is important to take steps to contain potential adverse impact on spot prices and also to dispel the negative perception about the market.

6.2 With the complete lifting of prohibition on futures trading in 2003, in the real sense these commodity markets have been opened up only recently. They have yet to make a significant headway. There are not many empirical studies available so far which have examined the role of these markets in the agricultural economy of the country.

6.3 The results of IIMB study on **Impact of Futures Trading in Wheat, Sugar, Pulses and Guar seed on Farmers(2008)** conducted for FMC comes to the conclusion that future markets may not have served the purpose of risk management. Some of the other studies quoted earlier point even more directly to large inefficiencies in existing futures markets and suggest that there may indeed be destabilising effects from futures trading on spot markets for agricultural commodities. There is recognition in all the above studies that futures markets are new and still in a learning phase. However, although new and not yet established in terms of either minimum critical liquidity or operational efficiency, their growth has been phenomenal. This phenomenal growth naturally attracts criticism, albeit without support of strong empirical basis, for its perceived role in fuelling inflation. These criticisms emanate because of the following reasons:

(i) If there is a good liquidity in the market, it is always presumed that the futures market is not tethered to physical cash market.
(ii) Participants in the market have different and opposite views on price expectations. Those who lose in this market tend to find fault with the operations of the market or with the market itself instead of attributing the loss to his error of judgment.
(iii) There are some sporadic short term aberrations in the functioning of the market such as non-convergence of spot and futures prices and the uncertainty about basis etc.
(iv) Sustained upward/downward movement in the prices of a commodity due to inherent demand – supply mismatch which the commodity derivative market can't remedy.
(v) Futures markets are seen as hindrance in successful procurement operations of the government in the market.
(vi) Differences exist of the extent to which domestic agricultural markets should be integrated with world commodity markets which show much greater volatility.

6.4 It should be noted that the allegation that commodity markets fuel inflation is not unique to India. It is a global phenomenon and markets get accused even in the

developed countries such as the US. The US President had accused speculation in futures market for steep price hike of oil after first Iraq-Kuwait conflict (1990) and even suggested to ban the futures. The CFTC Chairman had to testify that futures prices are not manipulated and the price hike is a result of fundamental demand - supply mismatch. More recently, again there have been criticisms regarding very wide mismatches between closing futures and corresponding spot prices in the course of the recent very large increase in world agricultural commodity prices. The CFTC called a special meeting to discuss these matters on 22nd April, 2008.

Regulatory Framework

6.5 In order to defend the market against criticism, it is essential to minimize the potential adverse impact of futures trading on prices of agricultural products. This requires properly functioning and regulated markets. There is a need for a clear and unambiguous regulatory framework. The broad parameters of the functioning of the markets have to be clearly laid down. The regulatory authority should have the capacity and the power to discipline the market. Once these pre-requisite are in place they will not only help in controlling aberrations in the market but also help the government and the regulator to explain to various stakeholders at large any abnormal behavior in the market that might occur as a result of some basic fundamental demand and supply factors.

6.6 The regulatory framework for the market is provided in the Forward Contract (Regulation) Act, 1952. The FMC set up under this Act regulates the market. Associations organizing forward trading have to seek recognition. The Rules and Bye laws of the association are approved by the Commission. The regular oversight of the market is done by approving suitable contract designs, fixing of price limits, trade margin requirements, daily mark to market margins, open interest limits and enforcement of best international practices for trading, clearing and settlement of the contracts. A continuous and daily reporting of trade details to the FMC is mandatory. Reasons for abnormal market behavior are thoroughly probed to take remedial action to protect market and financial integrity. Any violations of regulations and attempt to manipulate the market are investigated and penal actions taken against the participants found violating the rules or adopting any manipulative practices. Currently, errant participants can only be suspended or debarred from trade. But the Forward Contract (Regulation) amendment Bill 2007 makes provisions to impose monetary penalty for violations of Regulations and abuse of market practices. The autonomous status envisaged for the regulator by Amendment Bill

is designed to provide it powers and capacity to intervene in the market more effectively and with greater agility to prevent any misadventure. These changes will enable the Regulator to maintain discipline in the market to generate trust in fairness and efficiency of the market.

6.7 FMC should frame regulations on various aspects of market operations for transparent and efficient functioning of the market. The care should be taken to enable farmers and small operators to take benefit of these markets. Exchanges should be directed to design their market procedures and contracts such as to enable farmers an easy access to these market and protection against any market malpractices.

6.8 The most important enabler of the market is to upgrade the quality of regulation both by the FMC and by the Exchanges. In a period of over 3 years of their existence, commodity markets have thrown up many new ideas and challenges. The scope and breadth of the market is increasing. The initial phase of growth by extending coverage, scope and infrastructure has almost reached a plateau. Further growth of this market is possible only by intensification of efforts to generate faith and confidence in the market. The most important element to achieve this requires the Exchanges to act as self regulatory organizations and to demonstrate fair play, objectivity and customer orientation. The contract designs, delivery mechanism such as assaying, availability and accreditation of warehousing should meet the needs of the participants for hedging their price risks. The contract design should be tethered to the physical market. Before listing of new products on futures market, a rigorous examination is essential to find if they are going to be beneficial to the public and the wide spectrum of stakeholders. Broad-based consultations with various interest groups should be done, though it is recognized that some groups interested in status quo will oppose the launch of the product. It will help to address their opposition as also to handle later criticism if the product is launched with thorough research and wider consultations. It is noted that even now products are launched after research and consultation but these efforts need to be strengthened further, particularly at the level of regulatory approval of contract design. In this context, particular emphasis needs to be put in avoiding approval of such contracts where basis risk is likely to exceed spot price risk so that approved futures contracts are less subject to the valid criticism now made that some contracts favour only speculators and not those who wish to hedge their trading in physical markets. However, once the contract designs have been properly formulated, frequent changes in them or in the regulatory measures

should be avoided. Frequent changes in designs and regulations generate their own regulatory risks. All these require regulatory rules and procedures that should be framed with due care and in-depth study, keeping in view the demands of the market.

Derivatives Markets to be Anchored to Physical Spot-Markets

6.9 The derivative market has to be anchored to physical cash market. The physical spot markets have large number of infirmities. Till these infirmities are reformed, it will be difficult for the futures market to progress far ahead of them. Futures markets can act as a catalyst of change for spot markets and nothing more. Whenever futures markets try to grow faster than the under-developed physical markets of underlying commodities, any disconnect between the two gets widened, thereby opening up futures market to the criticism of being driven by speculators, even if benign and closely regulated. Information based trades, often referred to as speculation, is possible through both futures and spot markets transactions. For example, a trader expecting an increase in prices could buy the spot asset, store and sell once prices have increased. Alternatively, he could buy a futures contract today and sell an offsetting futures contract once prices have increased. The futures contract transaction will generally involve lower transaction costs. It also relieves the trader of the need to store the physical asset and finance its purchase. But all this requires that there be a fair consonance between improvements in physical trade and the pace of growth of futures markets.

6.10 Given the relationship between the two markets, it is not too meaningful to talk of one market driving the other. Information based trades can occur in either of the markets depending upon relative transaction costs. The other market then adjusts to maintain the no-arbitrage relationship. In well-functioning markets this adjustment is instantaneous so that it may be difficult to identify the sequence of market reactions. Since both markets reflect the same fundamental supply demand conditions almost simultaneously, it is difficult to distinguish whether futures markets *cause* increases (or decreases) in spot prices or it is the other way around.

6.11 Short selling is likely to be easier through futures markets rather than spot markets, given the costs of borrowing the physical asset for short selling. Hence, futures markets should make it easier to trade on information, implying lower expected prices. If,

however, it is found that there is a tendency for spot prices to rise when new futures contracts are introduced, the regulator should take due cognizance.

6.12 Futures markets efficiency is contingent on the efficiency of spot markets. Efficient spot markets reduce the cost of future- spot arbitrage. Efficient spot markets in commodities would require integration of markets across geographical regions and quality. This reduces the basis risk in the use of futures contracts. Integration of the spot markets requires development of rural communication, transport and storage infrastructure. The committee is of the view that in order to expedite this, collections from the proposed transaction tax , if and when this is imposed on futures markets, should be earmarked exclusively for development of the required physical market infrastructure and any other steps necessary to increase farmer participation.

6.13 This also requires removal of regulatory restrictions on movement and storage of commodities. Reforming markets should be given top priority. Most of the states have passed Model APMC Act. However, many of them are yet to operationalise these enactments by framing Rules and Regulations. The setting up of National Spot Electronic Exchanges by the National Commodity Exchanges is an attempt to create a national integrated market. The legal and regulatory hurdles in setting up and operations of these National Spot Exchanges should be removed. The Standing Parliamentary Committee of MCAF&PD has recommended that spot and futures markets need to be placed under the same regulatory framework. The Standing Committee has gone to the extent of recommending that in order to bring in better coordination and synergy between spot trading and futures market, spot trade need to be placed under Union or Concurrent List by amending the Constitution of India." Since Entry 33 in the Concurrent List of the Seventh Schedule of the Constitution of India provides some jurisdiction to the central government in respect of spot trades with interstate dimension, it is felt that till such time the amendment can be made in the Constitution, some steps should be taken within the present legal framework whereby the commodity market regulator gets some jurisdiction over warehouses and spot trade practices which have a bearing on the successful operations of the futures market.

Speculation an Integral part of Efficient Futures Market

6.14 As has been indicated elsewhere in the Report, the futures trading in agricultural commodities is as yet limited to only a few commodities. The volume/production ratio of some of these commodities is too high, indicating the prevalence of excessive speculation in futures trading in those commodities. The commodities with a history of high price volatility (e.g. Guar seed) are prone to excessive speculative interests which open up futures market to the charge of distorting prices having no linkage to the fundamentals of the demand and supply factors. The presence of the speculators on the futures market is often looked upon with suspicion. It must be remembered that if only the farmers and consumers were to operate on the agricultural commodity markets, there is likely to be mismatch in their respective marketing strategies and therefore, they would not be able to transact business at any given point of time since the total volume of business would be very thin. The market would, therefore, become illiquid. Hence, speculators step into to provide the transaction matching through risk transfer and consequential liquidity. In a free market with availability of technology for instantaneous flow of information speculative funds cannot bring secular price rise as supply responses (through inventory unloading, imports and production) are fast. It is opacity or non-availability of efficient markets, like futures markets that gives power to the manipulator-speculator. On the other hand, an efficient and transparent market with sufficient depth of participation will encourage responsible and informed speculation.

6.15 This kind of apprehensions exists in the developed markets also. The Agricultural producers do not seem to be directly patronizing these markets due to various characteristics of these markets. Despite many empirical and deductive explanations regarding direct or indirect benefits of these markets to its participants and the economy, the doubts about them linger on even in the developed economies like US.

6.16 The Commodity Futures Modernizing Act of 2000, which provides the framework for modernizing commodity market in the US, specifically incorporated a section (titled Special Procedures to Incorporate and Facilitate Bonafide Hedging By Agricultural Producers) S.4p), to direct the CFTC (the regulator) to issue Rules and Orders to make these markets useful for agricultural producers and to report to the Congress the steps taken to implement those directions.

Consultative Mechanism for Development of the market

6.17 A major weakness is that currently neither the exchanges nor FMC have a strong back up of domain knowledge in commodities which are traded on the exchange platforms. There is a group functioning in the Commission known as Risk Management Group (RMG) comprising academics, securities/commodity markets experts and representatives of National Exchanges to advise the Commission in devising regulatory measures. Though this is a step in the right direction, the present consultations get little or no input from those knowledgeable in fundamental economic characteristics of production, marketing and use of the commodity concerned. Rectifying this lacuna is of utmost importance for proper contract design. Once a proper contract design of a product is in place, the surveillance of the market becomes easy. There should be a consultative group comprising of persons with proven domain knowledge of the commodity sector, both in the FMC as well as in the Exchanges. These consultative groups should appoint sub-groups drawing persons with knowledge and understanding in each commodity traded in the exchanges. Representation in these Sub-Groups should also be given to persons from Commodities Development Boards/Association and the officers engaged in promotion and regulation of agriculture markets in the State Governments. An officer of the FMC should be the Convener of this Group. The Exchanges, through FMC, should submit monthly reports to the Consultative Group highlighting developments in the market. The Consultative Group should meet regularly and not less frequently than once in a quarter, to deliberate on various technical and operational issues of concern to futures trading in various commodities and provide inputs to the Forward Markets Commission in the shape of recommendations. The Group may also give advise on the need and rationale for futures trading in new commodities and on modifications in the existing contract designs.

6.18 At the apex level, there is a need to have a Committee on Commodity Market akin to the HLCC in the Capital Market. Secretaries of Departments of Agriculture, Consumer Affairs, Food and Commerce, Deputy Governor, Reserve Bank of India and Chairman, SEBI along with at least one Economist of repute and one representative each of farmers, cooperatives and trade bodies (like FICCI,CII etc) should be members on this Committee. The Committee should be chaired by Deputy Chairman of the Planning Commission or Member of the Planning Commission that he likes to nominate. The Chairman, FMC should be the Convener of this Committee. This Committee should deliberate on broad policy issues concerning the development and regulation of the commodity market.

7. FARMERS PARTICIPATION IN COMMODITY FUTURES MARKET

7.1 One of the justifications for opening up and rejuvenating commodities futures markets in India during the beginning of the current millennium has been to create infrastructure which will help farmers to access the market as well-informed players. Price discovery and price risk mitigation are the main objectives of commodity futures markets, which enables the farmers to take rational decisions about cropping and marketing of their produce to increase their farm income. This creates incentives and resources for investment in agricultural operations to improve productivity. The National Agricultural Policy 2000 (NAP), sought to "enlarge the coverage of futures markets to minimize the wide fluctuations in commodity prices as also for hedging their risk". The endeavour ought to be to extend futures trade to all agri-commodities in course of time. **The Guru Committee (2001)** emphasized the role of futures trading for price risk management and marketing of agricultural produce.

7.2 Farmers can derive benefit from futures markets as follows:

i) By participating directly/indirectly in the market to hedge their price risks.
ii) To take benefit of prices discovered on the platform of commodity exchanges by taking rational and well informed cropping /marketing decisions.

Direct Participation in futures trading.

7.3 Farmers can use agri-futures markets to transfer their price risks. The structure of markets, contract designs and other requirements of trading on these markets should be simple and easy to enable farmers to participate in these markets. There has been a significant increase in market infrastructure during the last three/four years. The network of screen-based Trader's Work Stations (TWS) of three National exchanges has spread to about 800 cities/towns of the country. Besides, there are 21 regional commodity

exchanges trading in different commodities. The number of commodities offered for futures trading has also been growing, which stood at 94 at the end of March 2007. The contract designs are tailored to meet the needs of the physical market. Despite these enabling facilities and provisions, the farmers are not yet patronizing these markets in sufficient numbers except in some commercial commodities in specific regions, e.g. spices and rubber in Kerala.

7.4 The low participation of farmers in futures trading is not unique to India alone. In fact, the direct participation of farmers in agri-futures markets is very low even in developed markets of US and Europe. A CFTC (USA) report submitted to the Committee on Agriculture of the House of Representatives in 2001 clearly states: "Available data indicate that overall direct producer use of futures and options market is relatively low, although many, mostly larger, farmers are regular user of the markets for hedging cash market positions. However, many producers benefit indirectly from active futures and options markets, either as member of co-operatives or through price discovery and price basing benefits offered by futures markets". The Indian farmer is less likely to participate directly as these markets are complex and the support infrastructure of warehousing and commodity finance is inadequate. Moreover, at the early stage of development of these markets, where liquidity in many commodities is low, they are prone to high impact costs. The awareness and knowledge of accessing these market among farmers is yet not adequate. Farmers need to track these markets continuously. FMC and exchanges are making efforts to spread awareness and knowledge of these markets among farmers and also to make these markets safe for trading by them. A large number of awareness programmes have been conducted during the past two years. But they have to go a long way to attract farmers to participate in these markets. The cutting-edge traders no doubt have the understanding and capacity to participate in these markets. But how much benefit of these markets percolates to farmers through them depends on the
level of competition among traders and the degree of awareness and capacity among farmers to extract these benefits for themselves.

7.5 Information provided by NCDEX suggest that there has been significant recent improvement in the participation of hedgers in agri-commodity contracts of NCDEX which is the major exchange for agri-commodities. The data on Hedger-ratio of select agricultural commodities contracts of NCDEX during the first 6 months of 2007 in **Table-9** below shows a good participation by hedger.

Table-9: Hedger Ratio for Select Commodities

Commodity	Hedger-OI ratio					
	Jan-07	Feb-07	March-07	April-07	May-07	June-07
Pepper	20.78	18.10	18.97	18.55	18.67	16.79
Sugar M	45.37	43.40	46.61	44.03	33.57	34.53
Soya Bean	65.82	68.45	68.58	69.56	60.34	57.02
Soya Oil	25.82	31.88	38.11	31.43	51.31	49.90

Source: NCDEX

7.6 It is, however, not clear from this table as to how many of these hedgers are farmers. Most of them are learnt to be corporates, stockists, traders and cooperatives like NAFED/HAFED. To the extent actual commercial users are using these markets - these markets are getting aligned to physical markets is a good indication for the robust growth of both futures markets and cash markets. But, as the IIMB study notes the direct participation of farmers, as found in the survey conducted for that study, is almost negligible.

7.7 Another indicator of access of these markets by agricultural producer / trader is that the clients who are using these markets are not concentrated in metro and big cities. The client base of NCDEX is spread to small towns / cities. The places other than Delhi, Mumbai, Kolkata, Chennai, Bangalore, Hyderabad, Ahmedabad and Jaipur account for 68% of total clients. Being based in small mofussil towns it can be presumed that users are closer to the farmers and therefore, the benefits of this market may be percolating to actual producers also, though indirectly.

7.8 There are some anecdotal evidences of the benefits accruing to farmers. It is reported that farmers of guar seed and menthol have been able to get a higher proportion of the final price due to incremental bargaining power brought by transparency of futures prices on exchange platforms. It is also reported that some farmers in Punjab held back their produce of wheat during harvest season in April-May 06 on the basis of signals of higher futures prices on NCDEX platform and sold at higher prices during October / November 2006. Farmers are again reported to have held back their produce in April / May 2007 to sell at higher prices later. However, it is precisely the low public

procurement that followed which led to suspension of trading in wheat. Such contradictory signals should be avoided.

Price Information for Better Decision Making.

7.9 Futures prices discovered on the platform of Exchanges can provide an important input to all decision makers, be they farmers, processors, warehouse keepers, traders or policy makers. Futures prices indicate democratically observed price expectations at future dates. These prices if efficiently determined, disseminated and accessible to all concerned - can pave the way for optimal decision making and resource allocations. If farmer gets advance information about the price of the produce that is likely to prevail at the time of harvest he can plan his crop and investment accordingly. Also, as the harvest time approaches, the prices likely to prevail much after harvest can guide him to take decision to sell or hold back his produce at the time of harvest. Thus, given his capacity and availability of other enabling infrastructure such as warehousing, finance etc. he will be able to exercise his marketing option in such a way as to maximize his income realization from his produce.

7.10 A large proportion of Indian farmers have small and marginal holdings. Their marketable surplus is small or negligible; their access to market is poor and costly; their holding capacity is weak as they need cash for their consumption and other needs immediately at harvest; and access to credit is poor. In order to ensure that benefits of price discovery on Exchange platforms reaches them, it is of prime importance to create infrastructure which enables dissemination of prices to the remotest corners of the country. The technological revolution in print and audiovisual media has made it possible to attain such a reach. The efforts made by the FMC and Commexes for dissemination of futures prices through various channels, though laudable, are small and inadequate considering the vastness and magnitude of the task. These efforts need to be strengthened further and new channels of dissemination explored. Apart from the use of print and audiovisual media, efforts should be made to use the existing extension services of state-Governments/Universities to reach the farmers and create awareness about the futures markets and the prices emanating from them. The commodity markets have been opened up only recently and it would be too ambitious to expect substantial dissemination of futures prices. Means and mechanism should be devised to use the trade
outlets of farm machinery, inputs etc. to reach farmers as these outlets are visited by them frequently. Most of these people are locals or conversant with local customs and aspiration. They enjoy the faith and trust of the farmers. Farmers have also to be

educated about the places where price information can be accessed regularly and how to use them for taking informed decisions. Mere transmission and dissemination of price information may not be enough. The target population needs to be explained its use as well as the manner how to interpret it. This is a stupendous task which requires continuous and vigorous efforts by all concerned agencies. Exchanges and FMC need to print literature in all languages and distribute it to the farmers through all possible channels.

7.11 Availability of and access to information, though necessary, is not sufficient for farmers to benefit. Farmers need to be empowered to use this information. Empowerment is much more difficult task than making information available. Farmers need to have holding capacity to sell produce at the most opportune time at the best available prices. This requires availability of warehousing and credit facilities so that the farmer can time his marketing. His bargaining strength increases when he has not pre-sold his produce to the traders/ wholesalers for meeting his needs for cash to meet his farm input and consumption needs. Banks' participation in commodity markets in the context is quite critical. Their presence is required not only to extend finance against warehouse receipts (WRs) but also to enable small and marginal farmers to access the commodity market. At present Banks and FIs are not permitted to trade on Commodity Exchanges. This should be gradually opened up with the banking regulator ensuring that participation of banks in commodity markets is broadly in line with their WR exposure. Without the availability of such support infrastructure, the full benefit of risk transfer and price (discovery) information will not accrue to farmers. Passage of Warehousing (D & R) Bill is a first significant step in the direction of empowering farmers to market their product profitably. This has a potential of transforming the marketing and be instrumental in creating an integrated national market in which spatial rigidities of information flow are reduced as supplies tend to flow from low price locations to high price locations.

Enablers for participation

7.12 Exchanges are devising mechanism and products to enable the farmers to participate in these markets. National Exchanges are pioneering a pilot scheme of Aggregators' who will collect retail produce of the farmers and trade on the Exchange platforms of exchanges on behalf of the farmers. However, it needs to be ensured that the scheme is not used to abuse the market, the interests of the farmers are fully protected

against malpractices and cost of intermediation is minimal. Farmers' Groups, Co-operative Institutions, RRBs, CCBs, NGOs, State Agricultural Marketing Boards, Warehousing Corporations, Commodity Development Boards which work in the rural areas and have close association with and the trust of farmers should be allowed and encouraged to act as aggregators. In order to expand the reach of futures market and promote the interests of the farmers in these markets, it would be essential that these institutions are roped in to act as intermediaries/channels. Further, some of these organizations have direct involvement in agricultural marketing set up. To start with, banks should be allowed to take position on commodity exchanges to the extent of the limit allowed to them by their regulator against which they should be permitted to offer OTC products to farmers in specific commodities for the purpose of hedging. These OTC products will be tendered and customized to meet the needs of small farmers. FMC and the Exchanges should explore as to how these institutions can be made an active agent to increase the access of farmers to these markets . Some of the steps that should be taken are :

i) allow higher position limits for delivery based trading ;

ii) exemption from margins for stocks deposited in the exchange warehouses etc.;

iii) linking of warehousing financing to futures position ;

iv) allow aggregators in the commodity exchanges on behalf of the farmers ;

v) extend grading, standardisation and assaying facilities to the farmers ; and

vi) educate the farmers about the benefits and risks of futures markets to help them take better informed decisions .

These measures will help in keeping the futures close to the realities of spot market and also help in convergence. In order to derive benefits to the farmers, sufficient safeguards should be incorporated for the operation of these schemes.

HAFED Experiment

7.13 Haryana Agriculture Marketing Federation (HAFED), during its three years of operation in the wheat futures market, has successfully used NCDEX wheat contract as 'short hedger' against cash (long) purchases from farmers. HAFED being a Federation of member societies has shared the profit with its member societies of the farmers. HAFED had plans to act as aggregator for farmers' societies to use NCDEX wheat contract for short hedging purposes which were dashed after directions were issued not to register any new contracts of wheat futures after 27th Feb. 2007.

7.14 The moral of these stories is that the plain vanilla futures contracts may not be very suitable to the farmers. Some other mechanisms/products linked to futures contracts will need to be devised to suit the needs of the farmers.

7.15 'Options in goods' can be another hedge instrument suitable for farmers' needs. However, complex options products may be difficult to comprehend and not suitable for farmers' needs. In case of agri-commodities, only simple 'options' may be allowed for some time till market attains maturity of operations and regulations and the farmers attains adequate understanding of the markets and of techniques to use them. This will require an amendment to the FC(R) Act. Moreover, since the premium on option may be quite high, this can be subsidized to some extent by using the collection from proposed CTT exclusively for the development of agricultural markets and to improve access of the farmers to them. In the longer run, it is also worth exploring the possibility of MSP implementation agencies such as FCI operating in the commodity market as an option writer in respect of goods it needs to procure for the operation of PDS. This could reduce the cost of operations and incentivise market operations. The operation of MSP is like a zero premium options. Options and MSP need not conflict. Whereas open-ended purchase could continue to be made at MSP as floor price, exchanges should be able to offer at a premium options for prices higher than MSP. Farmers should be encouraged to participate in these put options for which FCI can be the options writer.

8. APPREHENSIONS OF EXISTING TRADERS OF AGRICULTURAL COMMODITIES

8.1 The apprehension of existing traders both in cash market and futures markets stems from the very rationale of opening up of futures markets. These markets are touted to help reduce the long chain of intermediaries so as to reduce the mark-up between producers' price and the consumer price and to ensure a higher share of the consumer price to the producer. A similar fear arose when many other sectors were liberalized and opened up for competition. At present, this kind of doubts are being raised against the opening up of retail trade and agricultural trade. It is a fact, and the mission of the modern market architecture, including the futures trading, is to bring democratization and transparency in price formation. This is aimed at loosening the control of a few dominant groups in price determination of commodities. There are cartels of traders in different commodities (pulses in Akola and Mumbai; gur in Muzaffarnagar & Hapur, Menthol in Chandausi, U.P, guar seed in Jodhpur, Rajasthan; pepper in Kochi, jeera in Unjha,

chillies in Guntur and Nizamabad; turmeric in Nizamabad and Sangli, Soya oil in Indore etc.) who command significant control on price determination of the commodities. They thrive on benefit from the fragmentation of the spot market and information asymmetry between the producers and their well organized traders. The greatest criticism of futures trading has come from these trade interests. The kind of representations received by the Government and the FMC testifies to this fear among these interest groups. Prices which will be discovered on electronic platforms will be determined on the basis of information and views about the demand-supply situation by the participants throughout the country including information from the traders/speculators and arbitrageurs as against a few traders concentrated in a few locations determining prices now. Thus, the integration of information at the national level (even factoring in the international supply-demand information) and transparent trading on an electronic platform accessible to all prospective participants will lead to a more holistic price discovery and thereby, empower the producers and endeavors to maximize their marketing power and minimize their risk. In other words, it will take away the undue advantage enjoyed by a trading cartel in a fragmented market and democratize the trading process.

8.2 However, the traders' fear is on account of a myopic approach and is based on a static view of the market. As markets become more integrated and efficient, the volume of trade will grow, new activities relating to commodity trade will grow with the opening up of new avenues and opportunities of trade. No doubt, traditional ways of trade and activities will have to give way to new practices and activities. Of course, there will be costs of transition as those unwilling or unable to change will suffer. But those with initiative, skills and innovation will find new and limitless opportunities for growth and prosperity. Apprehension of losing control will exist anyway as the corporates and the MNCs have already been permitted to trade in cash markets. The competition from new and efficient entrepreneurs is serious in the spot markets. Futures trade will, in effect, provide opportunity to hedge their price risks and a greater strength to compete with the big corporates, which otherwise because of their size, can become price setters in the market. It is, however, to be conceded that the Govt., FMC and Exchanges have not been able to reach out to these interest group to allay their fears. There is a need for advocacy and strong regulation of the futures market so as to generate confidence among all groups of stakeholders. This can be done by upgrading the regulatory capacity and capabilities of FMC rather than undermining the very need of trading and depriving the economy of the benefits of these institutions and the instrumentality to help bring efficiency in agriculture marketing and increased benefits to all the stakeholders.

9. BOOMING FUTURES TRADE IN STAGNANT AGRI-ECONOMY ?

9.1 Trading volumes in commodity exchanges have spurted in recent years. This has raised concerns among many that while there is a virtual stagnation in Indian agriculture with low investment flowing in this sector, there is a lot of enthusiasm in the derivatives markets. This raises doubts about the source of excessive flow of funds to this market.

9.2 A closer look at the figures of trading value of the national exchanges shows that the most of the trade in commodity exchanges occurs in Bullion, Metals and Energy products. There is a very little growth in futures trading in Agriculture commodities during 2006-07. The growth in Agri-commodities was only 10% against 126% in Bullion and 2069% in metals. In 2007-08, futures trade in agricultural commodities actually declined. Moreover, only eight commodities contributed 84 % value of futures trade in agri-commodities in 2006-07. So the flow of fund to these markets is not excessive for most commodities and, since derivatives are a highly leveraged instrument, are still a small percentage of traded amount.

9.3 That trade interests have emerged in the agriculture sector is in fact a good sign that investment is being attracted to this sector which can make agricultural activity more remunerative to farmers. The high volume of trade represents active interest of corporate, including MNCs associated with the respective commodities, traders and investors. Also there has been participation from Cooperative institutions like NAFED, HAFED etc. Penetration of financial services in the hinterland of the country through the membership of the national exchanges has contributed significantly to the same. There are many traders from physical markets who have themselves taken membership of the commodity exchanges. The spread of trading terminals is across all the states and there has been significant trade by the clients in a number of states and is not concentrated in few metros alone. There is a need to have a strong and resilient agriculture sector attracting investment for raising production and productivity. For this it is necessary to make agriculture remunerative. The vibrant agriculture markets including futures markets are the frontline institutions to provide early signal of the prospects of the sector for attracting flow of investment. These markets deserve to be promoted for giving such signal

9.4 It is argued that futures market benefit neither producers nor ultimate consumers but only help speculators gain at the expense of these two groups. This is not a well-informed argument. Access to well functioning futures markets can help producers hedge their price risks and certainly improve the price discovery process. Occasionally it can happen that futures trading by hedgers are far less than that undertaken by speculators which can lead to excessive price volatility. However a system of progressively rising margin requirements, position limits and trading halts when prices hit specified ceilings/floors can act as adequate safeguards.

9.5 Speculators tend to take position where there is more liquidity and volatility. This is the reason for high trading in commodity with low economic size like Gaur seed, Mentha oil, Chilli, Jeera, Pepper etc. Trading interest is generated because of high speculative interest during the bullish phase in such commodities thereby resulting in high volumes.

10. CONSULTATIONS WITH STAKEHOLDERS

10.1 The Expert Committee had sought views / opinions from the public on the role of forward trading in marketing and development of agriculture. The Committee also met important persons to share their experiences and views on the functioning of the futures market. A list of the persons, who shared their experiences with the Expert Committee, is given at **Annexure – IIA** and those who sent written submissions to the Committee is given at **Annexure – IIB**.

10.2 A few memoranda submitted to the Govt. by some trade Associations/interest groups specifically suggesting the banning of futures trade in specific commodities were also forwarded to EC for examination and to give its opinion in the matter. Their contention have also been taken into consideration while formulating the general recommendation of Expert Committee, though it refrains from making any specific comments on those memoranda. The views which emerged from these consultations are summarized in the following paragraphs

10.3 It was indicated that farmers are not directly participating in the futures market. Presently farmers are not in a position to take the benefit from the higher price because they have to sell the produce at the harvest time when the prices are low. The necessary infrastructures need to be put in place for encouraging participation of the farmers and

take benefit from the futures market. Information on futures market does not reach all parts of the country. Presently there is an information asymmetry between various markets. Most of the farmers are not aware of the futures market. The awareness about the futures market needs to be increased and it should reach the remote areas of the country for the benefit of the primary producers. The major portion of benefit in terms of higher price realizations has been taken away by the intermediaries in the value chain.

10.4 It was also repeatedly pointed out that commodity futures and physical markets are not integrated. There is a need to address this missing link through establishment of electronic spot exchange in the country. It was observed that there is a need to create a mechanism that will enable the farmers to benefit from the futures markets. The Warehouse Receipt System should be designed in such a way that it will benefit small and marginal farmers. Due to erratic policies of the Government, the investment by corporates in the agriculture sector has slowed down.

10.5 There is a need to address the issues relating to supply shortage in some commodities, increase the production base/productivity of food grains and pulses. Technological improvements and profitability of investment in crop husbandry is essential to increase long term availability. That the delivery system in the National Exchanges needs to be broad based and delivery charges on the exchange platform should be brought down to promote the deliveries. The specification of basis variety should also match with the market trends.

10.6 Most of the critical views were on the functioning of the market and not on its role. It was made out that if it does not benefit the farmers it has no role to play without stating how and in what manner it harms the interests of the farmers. Various interest groups/trade associations perceived these markets as a threat to them.

10.7 There were also those who strongly supported the market. It was expressed that futures trading can't alter the demand – supply situation of a commodity, rather it only gives early signals of the expected price scenario. The futures trading has not contributed to the price rise in commodities traded in the futures market. Futures markets will help in bringing transparency in the market so that all concerned parties, including the policy makers can act well in time on the basis of early signals emanating in these markets. The strict regulatory measures like margins, position limits and daily price band would ensure the integrity in the futures market.

10.8 One of the benefits of futures market is that it discovers the prices of commodity in advance thereby helping the farmers to take planting /sowing decisions. These signals are now available to the farmers at the futures platform. Presently, some of the farmers have benefited from the vibrant futures market though they do not participate directly. Farmers would benefit directly if commodity options trading is permitted. It was stated that commodity futures market are well organized which makes available a transparent price mechanism to the market participants. Futures trading provide window of opportunities for hedging physical stocks.

10.9 One common thread of the views that emerged from the consultations was that farmers are not yet able to take benefits of these markets for various reasons. In order that these markets have meaningful role, steps need to be taken to make them beneficial to farmers. The functioning of the markets has to be improved so as to make them more efficient. The lack of awareness and advocacy is also one reason for the negative perception about these markets.

11. SUMMARY OF FINDINGS & RECOMMENDATIONS

11.1 Futures trading in commodities has a long tradition in India going back to 1875 when the Bombay Cotton Trade Association was set up. This was followed by a mushrooming of Exchanges throughout the country. (para 2.1)

11.2 The organized formal regulation of these markets started in Bombay State followed by a central legislation titled, Forward Contract (Regulation) Act, 1952 as the subject got included in the Union List of the VII Schedule of the Constitution of India. But futures markets faced near oblivion since 1960s when they were accused of fuelling inflation and were perceived not to have any role as the State intervened directly in prices and distribution of large number of essential commodities which were perennially in short supply. The market survived in the periphery as very few commodities were permitted for futures trading (Para 2.2).

11.3 Adoption of liberal economic policies since 1991 gave fillip to efforts to open up futures trading, which culminated into total withdrawal of prohibition in 2003. Futures trading has undergone a metamorphosis since 2003. New exchanges, modern

technology, best international practices have been adopted. The volume of futures trade has grown exponentially (Para 2.3).

11.4 Agricultural commodities constituted a significant proportion of total value of trade till 2005-06. This place was taken over by Bullion and other Metals in 2006-07. Further, there has been a fall in agri-commodity volumes during 2007-08 over the previous year. Negative sentiments have been created by the decision to de-list futures trade in some important agricultural commodities. (Para 3.3).

11.5 The growth in commodity futures trade has spawned an upsurge in interest in a whole lot of associated fields, like research, education and training activities in commodity markets, commodity reporting for print and visual media, collateral management, commodity finance and ware-housing. The market and the related fields which were almost non-existent four years ago now attract significant mind-share nationally and internationally. (Para 3.4)

11.6 An analysis of high inflation in both WPI and CPI during 2006-07 shows that, although not the only source, agricultural commodities contributed disproportionately to this. Empirical analysis in respect of 21 agricultural commodities (accounting for about 98 % of share in total futures trade in agricultural commodities) shows that the annual trend growth rate of prices accelerated after introduction of futures trading in the case of many more of these commodities than there were cases of deceleration. (para 4.12)

11.7 The fact that agricultural price inflation accelerated during the post futures period does not, however, necessarily mean that this was caused by futures trading. One reason for the acceleration of price increase in the post futures period was that the immediate pre-futures period had been one of relatively low agricultural prices, reflecting an international downturn in commodity prices. A part of the acceleration in the post futures period may be due to rebound/recovery of the past trend. The period during which futures trading has been in operation is too short to discriminate adequately between the effect of opening up of futures markets and what might simply be the normal cyclical adjustment. (para 4.13)

11.8 In contrast to the view that futures markets cause increases in prices, the bulk of the existing literature on the subject emphasizes that such markets help in price discovery, provide price risk management and also bring about spatial and temporal

integration of markets. Futures markets have the potential to bring about better price stability over a medium to long term although the literature on futures markets itself is rather divided on the subject of price variability. Indian data analysed in this report does not show any clear evidence of either reduced or increased volatility of spot prices due to futures trading. (para 5.4)

11.9 A study of the functioning of existing futures markets and contracts suggests that although the volume of futures trading in India has increased phenomenally in recent years, its ability to provide instruments of risk management has not grown correspondingly, and has in fact been quite poor. The reason for this is high basis risk in most contracts which keeps out potential hedgers and leads to greater dominance by speculators. This is a serious area which should be addressed both by exchanges and the Regulator. (para 5.6)

11.10 Another enabler of the market will be to upgrade the quality of regulation both by the FMC and by the Exchanges. The proposed FC(R) amendment Bill to up-grade the regulation and to improve the capabilities of the regulator need to be pursued vigorously. Exchanges should act as self regulatory organizations, capable of demonstrating fair play, objectivity and customer orientation. Attracting speculators, arbitrageurs and other investors is no doubt important but that should not be the primary criterion while designing contracts. Many misconceptions about the market will vanish if regulation is upgraded to protect markets against any manipulation or abuse. The contract designs should be such which serve the objective of risk management to farmers and other commercial users. (Para 6.8)

11.11 Efficient functioning of future markets presupposes the existence of efficient spot markets. Currently, the physical spot markets have large number of infirmities. Till these infirmities are removed, there will be difficulties in the functioning of futures markets. Futures markets can act as a catalyst of change for spot markets. But whenever futures markets try to grow faster than the under developed physical spot markets of underlying commodities, disconnect between the two gets widened thereby exposing the futures market to criticism of being driven by speculators, even if closely regulated. Efficient spot markets would require integration of spot markets which requires development of rural communication, transport and storage infrastructure. The committee is of the view that in order to expedite this, collections from the transaction tax, if and when imposed on

futures markets, should be earmarked exclusively for development of the required physical market infrastructure and farmers access to it.(Para 6.9 , 6.12)

11.12 Reforming spot markets should also be a top priority. Most states have passed model APMC Act. Many of them are yet to operationalise these enactments by issuing rules and regulations which should be expedited. The setting up of National Spot Electronic Exchanges by the National Commodity Exchanges is an attempt to create a national integrated market. The Legal and regulatory hurdles in setting up and functioning of these national spot exchanges should be removed. Further, in order to promote integrated national markets, the Central Government should take active steps to bring inter-state spot trade under the regulation of a central authority rather than leave it to highly scattered APMCs. Entry 33 in concurrent list of 7th Schedule of the Constitution seems to provide such a jurisdiction. (Para 6.13)

11.13 There should be a consultative group both in FMC as well as in the exchanges comprising persons with proven domain knowledge of commodity sector. Representation in these Sub-Groups should also be given to persons from Commodities Development Boards/Association and the officers engaged in promotion and regulation of agriculture markets in the State Governments. They should advise the FMC about the need and rationale for futures trading in new commodities and on modifications of existing contract designs (Para 6.17)

11.14 At the apex level a Committee on Commodity Market akin to the HLCC in the Capital Market should be constituted with Deputy Chairman, Planning Commission or one of the Member of the Planning Commission as his nominee as Chairman. FMC Chairman should be the Convener of the Committee. Secretary (Agriculture), Secretary (CA), Secretary (Food), Secretary (Commerce), Deputy Governor, RBI , Economist of repute and one representative each of farmers, cooperatives and trade bodies (like FICCI, CII etc) should be members of the Committee. The Committee should deliberate on policy issues concerning Development and Regulation of Commodity market and guide the FMC to take appropriate steps. (Para 6.18)

11.15 Conditions should be created so that farmers can use agri-futures markets to transfer their price risks. Despite existing facilities and provisions, the farmers are not yet

patronizing these markets in sufficient numbers except in some commercial commodities and specific regions such as spices and rubber in Kerala. The structure of markets, contract designs and other requirements of trading on these markets should be simple and easy to enable farmers to participate in these markets. The contract designs should be tailored to meet the needs of the physical market. (Para 7.3)

11.16 Farmers are unlikely to participate directly in these complex markets. They need to be tracked continuously. Moreover, at the early stage of development of these markets, where liquidity in many commodities is low, they are prone to high impact costs. For benefits to reach farmers, the support infrastructure of warehousing and commodity finance should be made adequate. This area is likely to undergo a significant improvement after the Warehousing (D&R) Act is operationalised. It is also important that all regulators operating within the commodity market space (like FMC, Warehouses, Banking, Spot or APMCs) work in cohesion and do not provide conflicting signals. Government should ensure that a closely coordinated structure is put in place to achieve this cohesion. (Para 7.4)

11.17 Futures prices indicate democratically observed price expectations at future date. These prices if efficiently determined, disseminated and accessible to all concerned - can pave the way for optimal decision making and resource allocations. If farmer gets advance information about the price of the produce that is likely to prevail at the time of harvest he can plan his crop and investment accordingly. Also, as the harvest time approaches the prices likely to prevail much after harvest can guide him to take decision to sell or hold back his produce at the time of harvest. Thus, given his capacity and availability of other enabling infrastructure such as warehousing, finance etc. he will be able to exercise his marketing option in such a way as to maximize his income realization. (Para 7.9)

11.18 In order to ensure that benefit of price discovery on Exchange platforms reach them it is of prime importance to create structure which enables dissemination of prices to the remotest corners of the country. The technological revolution in print and audiovisual media has made it possible to attain such a reach. The efforts made by the FMC and commexes for dissemination of futures prices through various channels, though laudable, are small and inadequate considering the vastness and magnitude of the task.(Para 7.10)

11.19 Availability and access to information, though necessary, is not sufficient for farmers to benefit from this. Farmers need to be empowered to use this information. Empowerment is a much more difficult task than making information available. Farmers need to have holding capacity to sell produce at the best available prices. Banks' participation in commodity markets is quite critical. Their presence is required not only to extend finance against WRs but also to enable small and marginal farmers to access the commodity market. Without the availability of such support infrastructure the full benefit of risk transfer and price information will not accrue to farmers. Banks and Financial Institutions which are at present not permitted to trade on Commodity Markets should, subject to approval by the Banking Regulator, be allowed to trade up to limits required for the purpose of devising customized OTC products suited to the needs of small and marginal farmers. (Para 7.11)

11.20 National Exchanges are launching a pilot scheme of Aggregators' who will collect retail produce of the farmers and hedge it on the platform of exchanges on behalf of the farmers. Farmers Groups, Co-operative institutions, RRBs, CCBs, NGOs, State Agricultural Marketing Boards, Warehousing Corporations, Commodity Development Boards which work in the rural areas and thus have close association and trust of farmers should be allowed and encouraged to act as aggregators. The rules and procedures of futures trade in Exchanges should clearly lay down conditions to enable these entities to access the markets on behalf of the farmers. (Para 7.12)

11.21. 'Options in goods' are hedge instrument suitable for farmers needs. However, complex options products may be difficult to comprehend and not suitable for farmers' needs. In case of Agri-commodities **only simple 'options'** may be allowed for some time till market attains maturity of operations and regulations and farmers attain adequate understanding of the markets and of technique to use them. This will require an amendment to the FC (R) Act. Also, since the premium on options may be high, farmers' costs of accessing these markets should be minimized by waiving transaction fee/taxes or even by granting subsidies out of tax collection/ transaction fees for genuine hedge purposes by the farmers. A fool proof scheme of assistance should be devised for the purpose. (Para 7.15)

11.22. An assessment should be made of the possibility of agencies implementing MSP including FCI acting as the writer of 'call' and 'put' options in agriculture commodities. This could reduce the cost of operations and incentivise market operations. The operation

of MSP is like a zero premium option and options and MSP need not conflict. Whereas open-ended purchase could continue to be made at MSP as floor price, exchanges should be able to offer market based options at strike prices higher than the MSP. Farmers should be encouraged to participate in these put options for which FCI can be the options writer (para 7.15).

11.23 There is a need to have a strong and resilient agriculture sector attracting investment for raising production and productivity. For this it is necessary to make agriculture a remunerative option. The vibrant agriculture markets including derivatives markets are the frontline institutions to provide early sign of future prospect of the sector. Vibrancy in these markets give signal about commodities which deserves flow of investment. These markets deserve to be promoted for giving such signal (Para 9.3)

The Terms of Reference of the Committee were to examine how futures trading has affected the wholesale and retail prices of agriculture commodities and how to make futures markets accessible to farmers. On the issue of the effect of futures trade on wholesale and retail prices the factual position has been set out in the report. The Committee has been unable to determine any conclusive causal relationship in view of short time period during which futures markets have functioned and the complexities that arise because a large number of variables impact spot prices. The committee has, therefore, concentrated on the steps necessary to make futures markets accessible to farmers and most of the recommendations relate to this. The Committee decided not to express any view on the delisting of commodities done in 2007 since this is not part of its terms of reference. However, the matter was considered important by some members including the Chairman. Their individual views are appended separately.

(Sidharth Sinha)
Member

(Prakash Apte)
Member

(Kewal Ram)
Member-Convener

(Sharad Joshi)
Member

(Abhijit Sen)
Chairman

SUPPLEMENTARY NOTES

Supplementary Note By Prof Abhijit Sen , Chairman , ECFT

1. The terms of reference of this Committee were to consider whether and how much futures markets impact on wholesale and retail prices and how to make futures markets benefit farmers. These did not cover the broader question of the usefulness and need for commodity futures markets or the specific matter of suspension of futures trading in four commodities that had shortly preceded the setting up of the Committee.

2. The answer to the question whether futures markets affect spot prices is obviously yes. Otherwise, futures markets would serve no role at all. Futures markets allow speculators to take positions in commodities without being involved in physical trade. The argument for this is that the greater liquidity that speculators bring permits more information to be traded compared to what would be possible with only physical trading, *without this liquidity in itself necessarily affecting spot prices*. Possible benefits from such trading are better price discovery, provision of more reliable risk management tools and, above all, reduced spot price volatility. All these benign effects assume transmission of outcomes from futures to spot market prices.

3. The issue therefore is not whether futures markets affect spot prices; but to what extent are the benign and positive linkages actually observed and, conversely, can there be less benign transmission from futures trading to spot markets? These are also relevant questions in the ongoing debate on whether futures trading in essential commodities should be banned. But since these questions go beyond its terms of reference, the Committee interpreted its remit on impact of futures trading on wholesale and retail prices of agricultural commodities as being limited to the narrow and strict question: *did such trading cause spot agricultural prices to increase?* However, it was not possible to arrive at any conclusive answer to this question, particularly on the matter of causation, since the period of operation of futures trading was too short to provide statistically meaningful results. The Committee therefore proceeded to note the weaknesses of current futures trading arrangements and, in the light of this, has made recommendations on how to make these more beneficial for farmers. In the process, the Committee ignored its rather curious terms of reference (ii), which appears to suggest that something must be done to minimise any effect that

futures markets may have on spot prices. This supplementary note is an opportunity to address this by taking up the broader issues raised in the first line of this paragraph.

4. The advantages of futures trading in agricultural commodities have generally been seen to be threefold:

1) They are perceived to discover and obtain better prices for farmers.
2) They are said to decrease price volatility of agricultural commodities.
3) They offer participants hedging and other tools for price risk management.

5. With respect to the first and most commonly argued point in favour of futures trading in agricultural commodities, it must be noted that the only way that futures trading can increase prices actually received by farmers who themselves do not trade in futures is if the causality runs from futures to spot prices. This can be through discovery of future spot prices that help farmers make better cropping decisions and by increasing spot prices at harvest: either by providing higher reference prices against which local spot trades settle or enabling traders in the physical market to build more stocks at harvest. Such transmission, by providing informational anchor or enabling access to additional liquidity for spot trading, can benignly serve both producers and consumers by reducing local monopolies and allowing better inventory management. But it also means that the same transmission mechanisms could sometimes less benignly cause speculation in futures markets to spill into spot markets. It is clearly illogical to claim that futures trading will generally tend to improve prices received by farmers and yet maintain that futures trading can never contribute to inflation of spot prices.

6. Some members of the committee felt that transmission mechanisms that can cause futures markets to lead spot markets either do not exist or are unimportant. If so, the higher inflation that was observed in most commodities after introduction of futures markets could not have originated from futures trading. But if that is so, then neither can futures markets be said to have brought benefit of higher prices to farmers, except possibly the miniscule minority who actually trade in futures on their own or through co-operatives. As with all aspects of futures trading in India, research on transmission mechanisms is scanty. However, the IIMB study does find some evidence to suggest that prices from futures markets are acting as reference, contributing more to better

integration of geographically separated spot markets than to discovery of future spot prices. Other studies quoted in Section 5 report evidence of

unidirectional causation from futures trading to spot prices. Internationally, recent FAO papers on the present situation of high and volatile world commodity prices list speculation in derivative markets among demand side factors.

7. With respect to the second point, i.e. the ability of futures markets to reduce spot price volatility, it is clear from the evidence presented in the Report that the record in India is at best mixed. Although the general presumption is that futures markets reduce spot price volatility because of the greater liquidity that this brings, the academic literature on this is divided both theoretically and empirically. Both in India and internationally, *it is not possible to make an unambiguous statement to the effect that futures markets always stabilize markets and reduce price volatility.* Indeed, evidence pointing in the opposite direction has increased more recently. For example, there is currently an intense ongoing debate in the United States on the role that the large influx from hedge and index funds into commodity futures might be playing to cause the present situation where both commodity price levels and their volatility have reached unprecedented highs.

8. At the recent Agricultural Forum held by the US Commodities Futures Trading Commission (CFTC) on 22nd April 2008 to discuss these problems, while the official position was to play down speculation and stress fundamentals, such as low physical stocks and increased demand from China and India, all farmers and trade associations blamed the problem mainly on speculative surge from long-only funds. They pointed out that the present situation of high prices which should normally have benefited farmers was actually causing concern. The accompanying high price volatility has led to convergence problems, more basis volatility and a near breakdown of risk management tools that futures markets normally provide. This has increased risk faced by farmers; put farmers, local elevators and other buyers of commodities under pressure of margin requirements and lending limits; and is causing problems in physical marketing. Although a final decision on various demands, including stricter monitoring, regulation and even a moratorium on index and other long-only funds, will only be announced later; CFTC has accepted that problems have emerged in the ability of farmers to avail risk

management tools. Therefore, to maintain status quo, it has shelved a proposal to increase speculative position limits and create new hedge exemptions for index and pension funds.

SUPPLEMENTARY NOTES *(Contd…)*

9. These recent problems of the world's richest farmers and commodity traders to avail risk management from the world's largest and most experienced futures exchanges put in perspective the third point above, i.e. ability of futures trading to offer hedging and other risk management tools. Three features underlie current US problems: (i) the entry of speculators with low commodity domain knowledge; (ii) unusually high basis risk and convergence problems associated with recent futures contracts; and (iii) the inability of farmers or even traders to get adequate credit for margin requirements. While these features that have arisen in the background of unusual fundamentals are exceptional in the US, and may turn out to be only temporary, these are all normal and endemic in India.

10. It is evident that the active participation of farmers themselves in agricultural commodity futures markets in India is significantly constrained. Most farmers are not in a position to pay high margins directly or even to access sufficient institutional credit to finance margin requirements. Majority of farmers in India also lack the basic enabling capacity in terms of adequate levels of literacy and numeracy. Although the Report has made a number of suggestions on how Exchanges can reach farmers, through Farmers Groups, Aggregators and Co-operatives, the likelihood is that very few farmers will themselves be directly able to access the risk management tools developed in futures markets. Many of the problems that hamper farmers' participation also apply to local traders, so that the indirect route whereby traders avail of the risk management tools and are able to offer farmers some benefit from this is also rather limited at present. Warehouse Receipts linked to bank credit and OTC products from exchanges have therefore been recommended, but this is just starting. It is vital that the initial experience with this be positive and not beset with problems such that further development is choked off by disappointments from disconnect between promise from futures trading and the actual reality of its delivery in physical markets. A softly-softly approach that builds on the best is preferable to a headlong rush that is bound to fail.

11. This is important because, as the Report notes, a major conclusion from the IIMB study and other studies reported in Section 5 is that for most commodities, futures

contracts in India have so far not been able to serve the purpose of risk management. The levels of basis risk in a majority of contracts for too many commodities are currently so high that it is virtually impossible to hedge. Exchanges are evidently creating contracts that seek to attract speculators rather than serve the

hedging need. A large part of the problem is obviously the poor state of infrastructure in spot physical markets and associated difficulties of contract design and delivery. But it is equally true that the main reason why futures exchanges have seen such spectacular growth is because they are serving contracts to meet a demand from speculators that has far outpaced the connection with the physical markets. The exact profile of these speculators is not known and, although many are located in smaller towns, it is unlikely that most of them come with informed knowledge of the commodity domain. Indeed, the required domain knowledge is rather scarce even in the National Exchanges and with the Regulator. A likely consequence of this and replacement of pit trading by screen based trading is that easily available domain material, such as the plethora of news from international exchanges being served on the many commodity portals that have mushroomed, is filtering into prices in futures exchanges more quickly than other information relevant to formation of local spot prices.

12. The upshot of all this is that the spectacular growth of National Exchanges has not been accompanied so far by significant delivery on any of the benign contributions expected from futures markets: price discovery, provision of more reliable risk management tools or reduced spot price volatility. It is necessary therefore to ask whether there are any less benign transmissions that require steps to control growth of these exchanges, or is it just all harmless froth? After all, a liberal attitude would suggest that there be no undue restrictions on the ability of responsible adults to gamble, as long as this does not hurt anyone else. And more seriously, as the Report notes, it is the case that these Exchanges, the trading community and the Regulator are all in a learning phase. Experience is required before there is adequate knowledge about the stable nature of the underlying basis before these markets start delivering positive results. Having found no conclusive evidence that futures' trading always caused inflation, the Report has followed the approach of giving such trading the benefit of doubt on the matter of less benign transmissions and to chart out some requirements that would strengthen positive aspects.

13. However, while this may be the approach that should generally be taken for a range of agricultural commodities, those who have argued for a ban on futures trading in essential commodities have made the case that items of necessary consumption cannot be treated in this manner. Their argument essentially is that in these cases the benefit of doubt should be accorded not to the Exchanges but to those who rely on the

existing system of Buffer Stocks, Minimum Price Support and Public Distribution involving the active role of government in physical trade. An important point to note in this context is that when commodity futures trading was opened up in 2003, it was extended to a much wider range of commodities than was justified by reports of previous Committees that had looked into the matter. These had all emphasised that not all commodities are suitable for futures trading. In particular, the Kabra Committee was unanimous against futures trading in wheat, non-basmati rice, pulses, tea coffee, sugar, maize and vanaspati. And both the UNCTAD-World Bank joint Mission and the Guru Committee had noted that commodities such as rice, wheat and sugar, for which there has been substantial government intervention, may not be suitable for futures trading. As it turns out, except for gram and urad and to a lesser extent wheat and sugar, none of these commodities has actually seen any significant futures trading so that a ban would simply legalise market perceptions.

14. Among essential commodities that have seen significant futures trading, critics have focused most on outcomes in wheat, and linked this not only with speculative gains at the cost of both producers and consumers but also with failures in public grain management in the face of uncertainties in both domestic production and world trade. It is therefore useful to examine specifically the recent experience with respect to wheat trade.

- Futures trading in wheat became liquid in August 2004 only after public stocks had declined sharply from earlier highs during 1999-2004. But wheat prices, both domestic and international, were still relatively low. These prices remained flat till August 2005, except for the usual seasonal dip in April/June.
- Although futures markets were liquid, the low 2004-05 wheat production was not reflected in harvest prices, either spot or futures. The real WPI of wheat in 2005 marketing season was the lowest since 1996. Also, despite low production and prices, 2005 procurement was 14.8 million tonnes.

- Subsequently, wheat prices rose sharply by 13.3% between September 2005 and March 2006. While some increase in wheat prices in this period is obviously explained by the output decline in 2004-05, the magnitude of subsequent price increase was much larger than in comparable recent periods following even larger output declines (e.g. 2000-01 and 2002-03).
- This suggests that other factors may also have played some role. One possible influence was that of world wheat prices. The IMF reference price for wheat rose 22.9% between June 2005 and March 2006, and by a further 21.6% till

SUPPLEMENTARY NOTES *(Contd…)*

October 2006 when it peaked. Interestingly, domestic wheat futures followed world prices fairly closely throughout the period from September 2005 to February 2007, except for a brief period during the 2006 harvest and its immediate aftermath (i.e. April-July).

- In fact, the sharp post-harvest price rise in 2005-06 was followed in April 2006 by the sharpest seasonal decline in Wheat WPI since 1999. The year-on-year change in wheat WPI in April 2006 was almost exactly the same as the percentage increase in wheat MSP, so that *farmers did not gain much from the preceding inflationary episode*. This was despite the fact that there were nine wheat futures contracts being traded during April 2006, which together indicated an over 20% wheat price increase by the end of the year. There were also reports of large private players entering the market to buy above MSP. However, while actual harvest prices remained near MSP, procurement in 2006 was only 9.2 million tonnes, i.e. 5.6 million tonnes less than in the previous year, even though there was a slightly larger harvest.
- Despite the resulting much larger availability in the private market and despite the government announcing very large imports as early as June, wheat WPI increased 17.8% between April 2006 and January 2007, taking the real WPI of wheat to its highest level since 2000. This magnitude of post-harvest increase, mainly after July, is difficult to explain in terms of the prevailing supply-demand balance in the private market. *Rising world prices were clearly influencing expectations as reflected in domestic wheat futures, and government stocks were too low to douse inflationary expectations.*
- The rise in world wheat prices was temporarily reversed between October 2006 and May 2007 and this was reflected with a lag in domestic prices: wheat futures began declining in November 2006 and wheat WPI peaked in January 2007.

Nonetheless, in view of the high wheat price inflation in the preceding year, government de-listed wheat from futures trading in February 2007 and there have been no new contracts thereafter, although trades offsetting open interest in existing contracts continued till their expiry, i.e. till August 2007.

- But de-listing of wheat futures made little difference to the procurement outcome which, if anything, was even more disappointing in 2007 than in 2006. Although procurement did increase by 2 million tonnes over the previous year, this was from an output 6.5 million tonnes higher and fell well short of target. This was despite an MSP (including bonus) increase of 21.4%, which was more than the increase in wheat WPI over the two marketing

SUPPLEMENTARY NOTES *(Contd…)*

seasons. One reason for this was the low ratio of market arrivals to production, suggesting that private trade could undercut public agencies and pay somewhat higher prices to farmers by saving on taxes and market fees.

- Even so, the overall wheat price situation did turn out to be very different from the two previous years. Wheat WPI increased just 5.9% between April 2007 and February 2008, and year-on-year wheat inflation in February 2008 was negative. Of course, the much higher 2006-07 output was the main reason for this. But, in view of the very different experience in the two preceding years, what is remarkable is that domestic wheat inflation was controlled despite world wheat prices shooting up from June 2007 to February 2008 to a level more than double that in February 2007. Moreover, from current indications, wheat procurement will exceed the target in 2008, mainly because 2007-08 harvest is record and MSP was again increased substantially more than increase in wheat WPI but much less than increase in world prices. Although no clear causality can be established, it is evident that *the transmission of international price pressures on domestic wheat prices was much lower after wheat futures were de-listed.*

This recent experience with respect to wheat trade does provide some evidence, albeit inconclusive, in support of critics who argue that futures trading may be associated with factors that can impede the operation of the public system of grain procurement, storage and distribution.

15. This issue must also be seen in the context of recent global price movements in agricultural commodities. World agricultural prices rose sharply from 1993 to 1996 and then declined even more sharply between 1996 and 2003. With non-tariff barriers coming

down after WTO, global price movements now do affect domestic prices much more, and so a close relationship between domestic and global prices has been observed for some agriculture commodities. For example, between July 2004 and January 2007 (which can be taken as the period when futures trading in these commodities really picked up in Indian bourses and continued unhindered) the trend growth rates of domestic prices of maize, soya oil, soya bean and wheat were same as for international prices. Of course, it may only be incidental that futures trading started in India when global prices had just started hardening after a prolonged downturn. As noted in the Report, for many commodities the acceleration of domestic prices post-futures was from a depressed base, and so it cannot be attributed directly or solely to futures trading. However, it is possible that the screen based trading in the

SUPPLEMENTARY NOTES *(Contd…)*

National Exchanges does capture international price movements more quickly and that this also gets reflected in domestic prices because of the "reference price" role that futures prices can play.

16. Although not certain, and the Committee having discussed it chose not to pursue the matter further, this raises a prudential issue. In the case of many sensitive commodities, the monthly co-efficient of variation of world prices, both spot and futures averaged more than 3 to 4 times the corresponding co-efficient of variation in the domestic WPI even before the recent unusual rise in world prices. The recent behaviour of food grains prices does not appear to be explained completely by supply fundamentals (production, changes in inventory and international trade). In particular, the contribution of international price movements to domestic price outcomes appears to have increased substantially, except notably the most recent behaviour of rice and wheat prices after delisting. Claims that futures trading have been a cause of the inflation in sensitive commodities needs to be viewed in this context. While strong futures market are argued to reduce price uncertainties in the domestic market, could transmission of world prices through futures markets actually lead to increased volatility of domestic prices?

17. This query is relevant in the present context where international prices of almost all sensitive commodities have suddenly become much higher than domestic prices, which is the reverse of the situation just three years ago. This is posing difficult policy choices for Government. If current world prices are likely to persist, the correct move would be to allow Indian prices also to move in the upward direction. However, quite

apart from political considerations that may require adjustments to be fine-tuned to acceptable levels of inflation, it is not entirely clear that world prices will remain at these high levels. There remains the possibility, as has been usually observed in the past, that world agricultural prices may in the near future drop equally sharply. In fact, given the very exaggerated role being attributed to China and India in current world discussion of fundamentals, how India manages its food situation may well be a determining factor.

18. Currently, the policy stance is to attempt insulation of domestic prices from the high world prices by combining a number of different measures including high subsidies, lower tariffs and export restrictions, some of which have been implemented suddenly in almost knee-jerk manner. Moreover, since inflationary outcomes depend

SUPPLEMENTARY NOTES *(Contd…)*

quite critically on the way that inflationary expectations build up, there is considerable, although sometimes exaggerated, concern with steps designed to show that the Government is acting to curb such expectations. Since futures markets can be a source of formation of domestic price expectations, these are not immune to similar treatment. In view of the inconclusive findings of this Report on whether futures' trading has fuelled increase or volatility in the prices of agricultural commodities, it is not possible to rule this out entirely. In order to avoid disruptive 'go-stop' responses that neither serve the public purpose nor the growth of markets, it is necessary to take a clear position regarding essential commodities, particularly food grains, where government currently has a large and all embracing involvement in physical trade. Both the literature on futures trading and empirical facts analysed in this report suggest that there are inherent difficulties if futures markets are introduced for commodities where government actively attempts to influence prices and is also a large player in physical trade. Although in the longer run there are possible benefits from combining futures based options with MSP operations as suggested in the Report, it is clearly necessary in the immediate inflationary situation that there be a clear statement of the government's intent to maintain and expand the current system of public procurement and PDS in order to ensure remunerative prices to farmers and affordable prices to consumers.

19. In this context, combining prudence with benefit of doubt, *the best course of action would be to identify those commodities where there is possibility of futures trading affecting expectations that may influence inflation in essential commodities and insulate these from futures.* Therefore, the suspension of futures trading in the four sensitive

commodities should continue and, in the case of sugar and edible oils, discussions with processors held on how much hedging benefits they currently derive from futures markets, and a decision taken accordingly.

20. In the case of other commodities, it may be necessary to reassure the Exchanges of a long term commitment to fostering growth of these markets, subject to necessary corrections of the many weaknesses that have been identified in the Report with respect to contract design and excessive speculation. Even with continued suspension on futures trading in sensitive commodities, the scope for enlarging futures trading is still huge since, despite its recent rapid growth, the existing volume of futures trading for most agricultural commodities is still relatively low compared to international norms on the ratio of volume of futures trading to production. In

SUPPLEMENTARY NOTES *(Contd…)*

addition, measures that will allow farmers to have genuine access to futures markets and benefit from them, most importantly the provision of adequate rural infrastructure and other enabling conditions, must be implemented. Therefore, while foodgrains production is increased in Mission mode as per existing policy, the focus, as far as futures trading is concerned, should be on creating conditions for orderly growth and diversification in other segments of the market for agricultural commodities in a manner that will provide benefits to farmers and ensure more stability in crop prices.

(Abhijit Sen)

SUPPLEMENTARY NOTES (Contd.)

Supplementary Note By Shri Sharad Joshi, Member, ECFT

The committee, under the terms of its reference, was required

i) to study the extent of impact, if any of futures trading on wholesale and retail prices of agricultural commodities;

ii) depending on i) to suggest ways to minimise such an impact;

iii) to make such other recommendations as the committee may consider appropriate regarding increase in the association of farmers in the futures market/trading so that the farmers are able to get the benefit of price discovery through commodity exchanges.

The terms of reference of the committee are rather ambiguous. The first item implied that the committee examine the impact of the working of the futures markets on the wholesale and retail prices on the basis of evidence available.

The wording of term ii) gave an impression that the government had presumed that the finding on term i) would be unfavourable to the futures markets and, therefore, the committee would have to suggest ways of mitigating the impact of the futures markets on prices. In case where the committee came to the conclusion that the impact was not negative, the committee did not have to make any recommendations.

On the contrary, the wording of term iii) gave an impression that the government presumed that the committee would give the futures markets a clean bill of health that would clear the way for lifting the ban imposed since 2007 on wheat, paddy, Tur and Arhad. Any other interpretation would not be consistent with suggestions to improve the participation of the farmers in order to benefit from the price discovery.

While the media and the people at large were expecting the committee to come out with clear recommendation on the desirability or otherwise of resumption/continuation of the futures markets, a majority of the members of the committee did not agree that it failed

within the ambit of the committee to do so. Most members thought that the committee should put full statistical and other evidence

SUPPLEMENTARY NOTES *(Contd…)*

before the government and leave the decision about the futures markets, which would have a certain political character in any case, to the government.

The members of the committee were aware of the fact that, at least since independence, India has lived under an environment of scarcity and high prices of food grains. It is well known that for long decades, the government sought to achieve a low-cost economy which on ground translated itself into a regime of compulsory Levy of food grains, Levy quota on the sugar, minimum support prices, market restrictions, restrictions on storage, transport, processing and export, dumping of commodities from abroad into Indian markets like wheat, milk, sugar, cotton in a manner that would depress domestic agricultural prices. This had resulted in a net tax on the entire agricultural community or, in other words a negative subsidy of as much as 83%. This had resulted in the heavy indebtedness of the farmers and, eventually, in the mass suicides. A system based on procurement and public distribution system had become second nature to the government and that a shift to a marketing system as freely as the futures markets would not be to the liking of political parties with populist agenda.

The committee was also aware of the fact that a large number of political parties who had very little understanding of the functioning and the character of the futures markets were brought up, conditioned to believe that the futures markets was a den of speculators and gamblers interested in making profits at any cost. The 14 months the committee did work under an overhanging cloud that holding an expression of the position even slightly favourable to the futures markets will be interpreted as being pro-capitalist and anti-common man

The committee carried out its work assiduously as regards the study of the impact of the futures markets on agricultural prices as also a volatility prices and came to the conclusion:

> ".. it is not possible to make any general claim that inflation accelerated more in commodities with future trading. (4.16)

".. delisting did not have any major direct contribution to the decline in trading observed during 2007 -08 (3.5)

SUPPLEMENTARY NOTES *(Contd…)*

".. It is not possible to conclude that factors particular to these commodities were the only or the one major reason behind the spurt in inflation". (4.6)

".. no strong conclusion can be drawn on whether introduction of futures trade is associated with decrease or increase in the spot price volatility " (4.19)

Since the committee came to the conclusion that there was no evidence linking the functioning of the futures market per se with inflation, it did not need to study methods of mitigating the inflationary effects.

Strictly going by the terms of reference all that the committee had the mandate to do was to make recommendations to the increased association of farmers in the futures market. This has been dealt with in chapter 6.

Agriculture in India has been practised over long long time in the environment of self-sufficient villages. Later on the model shifted to that of marketing through APMC/FCI. The change from self-sufficient village to APMC/FCI-based agriculture was marked by a substantial modification of the basic structures in agriculture. That is not surprising since marketing determines the basic structure of any industry.

Since 1991, although the Economic Reforms have barely touched agriculture, and a number of new experiments are being tried in the form of marketing. Contract farming, direct purchase by processors and farm gate purchasing by organised retail trade are only some of them. The government itself has been attempting to reform the APMCs by formulating model rules.

A shift to the futures market will necessarily imply far more radical restructuring than has ever been experienced by the village-based fragmented agriculture.

In the transitional period, while a large number of small farms persist, the design of the futures market contract will have to be modified to permit smaller units in the

standardised contract. This might also mean introduction of smaller sized vehicles rather than the standard ten-tonner truck.

The digital divide between "India" and "Bharat" continues in spite of the substantial lead the Information Technology has taken in India. Overcoming the deficiencies in

the last-mile connectivity, farmers will need to be provided with appropriate terminals that will permit them to operate on the futures markets.

The long chain of intermediaries has plagued the Indian farmer for centuries. Even the futures market will require identification of an appropriate aggregator who will be able to pull together the produce of the smaller farmers and take positions, options or hedge on the futures markets. Quite contrary to the position taken by most of the exchanges and the non-governmental organisations they are not well placed to enjoy the confidence of the farmers. The cooperative bodies that are highly dominated by the government, bureaucracy and the politicians have also been losing the farmers' confidence.

Under these circumstances, it is time to make a quantum jump in agricultural organisation and facilitate and promote formation of joint stock companies by converting the lands of the members into equity that holds great promise. This form will also provide the advantage of diversification of ownership by converting immovable landed property into movable equity. The increased participation of the women in the agriculture and the land ownership by itself will mean a radical reform in the Indian agriculture as we have known it for centuries.

I feel strongly that this transformation in the basic characteristics of Indian agriculture will precede large-scale participation by farmers in the futures market.

Forward Markets Commission as also various farmers' organisations are actively carrying out training programmes for informing the farmers about the mode of operations as also the advantages of the futures markets.

Futures markets offer the farmers at the time of sowing itself the prices that would be prevailing at the time of the harvest and for quite some time even after the crops are

ready. This helps the farmer take a decision about what crop to take in the light of the profitability matrix.

Further, the farmer is enabled to look onto a price that suits him and can be sure of getting the same.

SUPPLEMENTARY NOTES *(Contd…)*

The most significant advantage that the farmers get out of the futures market is the universal character of the market in which no seller or buyer is forbidden. The farmers know at the time of the harvest that the prices prevailing for their produce at places graphically separated are much higher. However, they are not able to take advantage thereof for want of financial capacity to incur the expenditure of transport. Similarly, the farmers know at the time of the harvest that the prices will increase as the harvest recedes. However, he is not able to take advantage thereof because he lacks the capacity to meet the expenditure. Futures markets permit the farmer to have the advantage of time and space utility without having to incur the expense thereof.

The increased participation of the farmers can be ensured through promoting awareness programmes, bridging the urban-rural Informatics divide, modification of the minimum size of the standardised contract as also of the option fees and margins. The committee ought to have also given attention to the question of finding an appropriate aggregate to consolidate the dealings of small farmers. Identifying an appropriate aggregator who could validly represent fragmented farms. This kind of an interlocutor would have been useful not only for the futures markets but also for the contract farming. This would have been a good opportunity for the committee to suggest ways and means of bringing about at least operational consolidation of fragmented landholdings. Futures marketing cannot be superimposed on and archaic agriculture methods of marketing necessary to show a radical reform of the structures of agriculture. It was suggested to the committee that this could be achieved by encouraging the formation of farmers joint stock companies by converting land and labour into equity. The committee does not deal with it in its report. Formation of the joint stock companies would have also radically transformed Indian agriculture by directing ownership of land into the hands of womenfolk. Installation to this effect is also involved in the report of the committee. It was also suggested that the instauration of the futures market could provide an opportunity for the abolition of the

CACP, the FCI as also of the PDS. This would have also brought about a total transformation of the Indian agriculture.

Some members of the committee prefer, in this situation, the isolation of the Indian agriculture from the global market through use of subsidies, restrictions on exports , liberalisation of imports, resurrection of the Essential Commodities Act for restricting transport, storage, processing, exports and trade in agricultural commodities.

SUPPLEMENTARY NOTES *(Contd…)*

These members, under the pretence of providing a good launching pad for the futures markets are, in fact, trying to scuttle the idea of immediate resumption and unrestricted functioning of the futures markets.

The fact that the global prices are at a all-time high cannot be an argument for our not removing the restrictions on the futures markets. If the government had succeeded in keeping the hike in wheat prices limited to just five per cent when the world prices went up by hundred per cent , it will be remembered that this was done at the great sacrifice on the part of the farmers who continued to face the global prices for all their inputs.

Since the global prices of inputs are also gone up it would be unfair and unjust to deny the farmers the advantage of the global prices of the commodities. Isolation of the Indian market is a new form of protectionism which goes against the grain of the global trading system of the World Trade Organisation (WTO).

On the basis of our analysis of the available Indian data both in terms of the behaviour of agricultural commodity prices pre- and post- futures trading and the direction of causality between futures and spot prices there is no indication of any unambiguous direction of impact. For some commodities post futures price inflation appears to have accelerated while for some it has slowed down. Similarly, the direction of causality also does not emerge in its clear unambiguous manner. It must also be kept in mind that this behaviour in the spot market is also subject to significant influence of supply factors.

As the committee was arriving to this conclusion, a sudden inflationary development intervened. The weekly rate of inflation, point-to-point, climbed as high as 7.41%. The prices of agricultural commodities the world over had been skyrocketing for some time.

The government of India had managed to keep the domestic wheat prices within reasonable limits by insulating the domestic market from the global one, through deployment of the well oiled armoury of imports, ban on exports, police raids as also restriction on the entry of the private trade in the procurement market of wheat.

But suddenly the atmosphere was vitiated by the slogans and the jargons that was so common in the socialistic decades of 1950s and 1960s.

SUPPLEMENTARY NOTES *(Contd…)*

The spokesman of some political parties, particularly the left allies of the UPA, launched a vitriolic attack on the futures markets as being tenants of turquoise and gamblers and demanded ban on the future marketing of all agricultural essential commodities.

Several political leaders as also economists started voicing the argument that the futures market, though innocent by itself, might unwittingly provide a conduit to of the global inflation.

The tirade against the futures markets started taking socialistic overtones and supporting the demand that would mark the return to the days of low-cost economy and imposition of negative subsidy on farmers. Those who were by mindset all against free-market started advocating a dual policy of globalisation. Full-scale globalisation for non-agricultural sectors, particularly industry and services and installation for agricultural commodity markets.

Within weeks of the government of India declaring a loan waivers scheme for the farmers, attempts calculated to depress agricultural prices once again surfaced without any compunction.

If the WTO rules did not permit such a partial insulation, so much the worse for them! It did not bother the opponents of the futures markets that domestic agricultural commodity markets could not be insulated from the global markets if the supply of inputs and technology remained governed by global factors.

Some members of the committee might, in their separate notes, put forward this point of view. It must be remembered that they represented their personal sentiments and do not

flow out of either the terms of reference of the committee of the statistical facts that were so thoroughly examine by the committee.

(Sharad Joshi)

SUPPLEMENTARY NOTES (Contd.)

Supplementary Note Prof. P G Apte, Member, ECFT

The committee was expected to examine the impact of futures trading on spot market prices of agricultural commodities both at the wholesale and retail level. There is no argument against the view that spot and futures prices of any commodity are related through cash-and-carry and reverse cash-and-carry arbitrage. However, there is no theoretical argument to presume that futures market leads or drives the spot market.

A thorough analysis of the available Indian data both in terms of behaviour of agricultural commodity prices pre and post futures trading and the direction of causality between futures and spot prices does not reveal any unambiguous direction of impact. For some commodities, post futures price inflation appears to have accelerated while for some it has slowed down. Similarly, the direction of causality also does not emerge in a clear unambiguous manner. It must also be kept in mind that price behaviour in the spot markets is also subject to significant influence of supply factors. Further, with progressive opening up of the economy including trade in agricultural commodities, Indian markets cannot be insulated from global factors. It is illogical to argue that futures markets are a channel for global factors to influence the domestic spot markets. In an open economy, global supply-demand related factors will impact on the domestic markets whether futures trading is permitted or not.

As to the question of whether futures trading increases the price volatility in the spot market, available theory argues otherwise and empirical analysis of Indian data does not lead to an unambiguous conclusion. Here too factors such as supply constraints and global trends and their effect on market participants' sentiments has to be kept in mind.

It is true that functioning of futures markets is more efficient and helpful when spot markets are also efficient. Further, we have to agree that there are a number of weaknesses and infirmities in the way spot markets in agricultural commodities are functioning in India. However, to argue that futures trading should not be permitted till these infirmities are removed would simply indefinitely postpone the initiation of measures to improve the functioning of the spot market.

It is also argued that most farmers are unable to access futures markets for a variety of reasons and hence are unable to derive any benefit from the availability of futures

contracts. While this may be true to some extent, the action plan should focus on improving farmers' access through the banking system, farmers' co-operatives, RRBs and other organizational devices. With advances in IT it should not be too difficult to enable even the smallest farmers in rural areas of all states to be able to access futures markets. Also, banks can be encouraged/required to provide financing against warehouse receipts so that they are not forced to sell their output in the spot market at low prices even though the futures markets are indicating strong up-trends in agricultural commodity prices. Commodity exchanges should undertake farmer education programs and collaborate with institutions such as co-operatives and RRBs to enhance the accessibility of futures markets.

It is argued that futures trading may interfere with government procurement of foodgrains and functioning of the Public Distribution System (PDS). It is time we initiate steps for Government to gradually distance itself from the direct contact between suppliers and consumers in agricultural commodities. Availability of adequate essential commodities to low income groups can be handled in other ways such as food coupons. Universal subsidization in any case does not enhance overall economic welfare.

Futures exchanges along with FMC should certainly keep a close watch on the functioning of the futures markets to ensure that the contract designs are optimal, settlement and delivery mechanisms are feasible and the markets are not being manipulated by speculative traders. However, there is no denying the fact that without the participation of speculative traders no futures market will function efficiently. If farmers and other hedgers want to pass on their price risk to some one else, speculators must be present on the other side to take on the risk.

To summarize it is my view that banning futures trading in agricultural commodities including basic food grains is not a desirable policy action. Policies to improve spot market functioning, enhance farmers' knowledge of and access to futures markets, augment availability of adequate storage and financing against warehouse receipts and ensure transparent functioning of futures markets are certainly warranted but initiating such policies does not require banning of futures trading even in essential commodities.

(P G Apte)

Supplementary Note by Prof. Sidharth Sinha, Member, ECFT

There exists a broad consensus among market participants, academics and regulators that well regulated futures markets do not have any adverse systematic impact on wholesale and retail prices. The brief experience of futures markets in India, as discussed in this committee's main report, does not provide any evidence to reject this hypothesis.

Therefore, futures trading having an adverse impact on wholesale and retail prices cannot be used as a basis for continuing the delisting of futures contract on certain commodities.

There is no denying that futures markets in India have a long way to go before they can realize their potential to provide reliable future price information which can be used by producers, consumers and the government, for efficient planning and risk management

An efficient futures market requires government and markets working together in a synergistic manner. Both the government and markets have to recognize the important role played by the other. Governments can provide the legal, regulatory and infrastructure support to enable markets to function without manipulation and 'excessive speculation'. On the other hand markets need to provide the government with efficient mechanisms to achieve its objective of 'inclusive growth'.

In the process markets will fail sometime. But so do governments.

(Sidharth Sinha)

STATEMENT X

Period of Initial Liquidity in Selected Commodities

Sl. No 1	Commodity 2	Date of Notification 3	Date of Permission 4	Date of Trade Commencement 5	Period of initial liquidity 6
1	Cardamom	01.04.2003	10.02.2004 (NMCE)	11.02.2004 (NMCE)	Nov-04 (NMCE)
2	Castor seed	16.04.1985			Nov-03 (NMCE)
3	Chillies	01.04.2003	30.08.2004 (MCX)	28.08.2004 (MCX)	Mar-05 (NCDEX)
4	Chana / Gram	01.04.2003	08.04.2004 (NCDEX)	12.04.2004 (NCDEX)	May -04 (NCDEX)
5	Guar seed	01.04.2003	22.05.2003 (NMCE)	28.05.2003 (NMCE)	May-04 (NCDEX)
6	Guar gum	01.04.2003	22.5.2003 (NMCE)	28.5.2003 (NMCE)	July-04 (NCDEX)
7	Gur	10.08.1970			Jan-05 (NCDEX)
8	Jeera	**Free**			Feb-05 (NCDEX)
9	Kapas	08.07.1964			Nov-05 (NCDEX)
10	Maize	01.04.2003	30.08.2004 (MCX)	28.09.2004 (MCX)	Jan-05 (NCDEX)
11	Mentha oil	**Free**		26.04.2005 (MCX)	May-05 (MCX)
12	Pepper	11.01.1957			Dec-03 (NMCE)
13	Potato	15.05.1985			Mar-05 (MCX)
14	Rapeseed / Mustard seed	12.04.1999	29.11.1999 (NBOT)	19.08.2000 (NBOT)	Mar-04 (NMCE)
15	Raw Jute	01.04.2003	24.05.2004 (NMCE)	04.06.2004 (NMCE)	Jun-04 (NMCE)
16	Rice	01.04.2003	30.09.2003 (NMCE)	13.12.2003 (NMCE)	Mar-05 (NCDEX)
17	Rubber	24.03.2005	20.02.2003 (NMCE)	15.03.2003 (NMCE)	Aug-03 (NMCE)
18	Soy Oil	01.03.2001	28.01.2003 (NMCE)	06.02.2003 (NMCE)	Mar-04 (NCDEX)
19	Soy bean	01.03.2001	28.01.2003 (NMCE)	06.02.2003 (NMCE)	Sept-04 (NCDEX)
20	Sugar-M	14.05.2001	28.01.2003 (NMCE)	06.02.2003 (NMCE)	Aug-04 (NCDEX)
21	Tur (Arhar)	01.04.2003	05.02.2004 (NMCE)	11.02.2004 (NMCE)	Apr-05 (NCDEX)
22	Turmeric	11.04.1956			Sept-04 (NCDEX)
23	Urad	01.04.2003	05.02.2004 (NMCE)	11.02.2004 (NMCE)	Aug-04 (NCDEX)
24	Wheat	01.04.2003	30.09.2003 (NMCE)	13.12.2003 (NMCE)	Aug-04 (NCDEX)

NB: 1. Names in parenthesis are those of the Exchanges.

2. Blank spaces indicate that these were permitted commodities even before the large scale liberalisation in 2003, but liquidity in them came only w.e.f. the month (and in the Exchange) as indicated in Col.6.

APPENDIX I

Study on Impact of Futures Trading in Wheat, Sugar, Pulses (such as Urad, Tur and Chana) and Guar seeds on farmers.

(Summary)

IIM, Bangalore

IIMB STUDY (SUMMARY)

In this study we have analyzed the performance of futures markets and their impact on farmers of wheat, chana, sugar, guar-seed, urad and tur. We have used secondary data to examine whether the National Exchanges organized futures markets are efficient and therefore perform adequately the intended functions. Primary data is used to find out how futures trading is helping major stakeholders in the value chain of these commodities.

Except for sugar in all other crops we have witnessed price increase in the post-Exchange period compared to the pre-Exchange period. While the changes in the fundamentals (mainly the supply) seem to be the main reason for this change, the role of futures trading on the extent of this change is unclear. For example in case of chana, the prices have shown an increase due to low production of 48 lakh tons in the year 2005-06 while in the case of sugarcane the prices of sugar have reduced in 2006-07 due to bumper production and large carryover stock. Government policies also have contributed to changes in prices. Sugarcane prices are, to a large extent, controlled by the government, and the sugar prices often play little role in determining the sugarcane prices, though they affect the payment capacity of the sugar mills and the prices to be offered for the next year. In case of guar grown mainly in the arid regions of Rajasthan, a normal monsoon gives a production that would meet the demand of guar seed for two to three years. The price increase in the year 2005-06 was on account of low carry over stock and increased export demand. In case of wheat, the low production and low stock availability with the government showed increase in prices since 2005. Tur showed a sharp increase in prices during 2006 due to low stocks and production. Urad also showed continuous production decline 2004 onwards and a rise in the prices. Therefore market fundamentals seem to be the major factors behind changes in the prices of these commodities. However, the interesting question with respect to impact of futures is whether the changes in the market conditions adequately reflect changes in prices or whether the price discovery mechanism has been efficient. We tried to analyze this in the study. Rigorous analysis of data has been a constrained by the limited data availability. The analysis done based on the available data is presented below.

The date of commencement of futures trading for various commodities at the national level exchange NCDEX is given in table 1. These commodities have been traded on the exchange for 2-3 years. It is important to note that it takes at least one or two annual cycles for markets to function properly as the exchanges and the participants are on the learning curve. Many operational arrangements such as electronic trading, daily

settlement, remote trading, physical delivery, etc being new, participants need time to reflect on the experiences in order to effectively trade in the futures market. However, due to limited data available, the data used in this study includes the contracts of the initial period also.

Table 1: Date of commencement of futures for different commodities at NCDEX

Commodity	Date of Commencement of futures
Wheat	6th July, 2004
Chana	12th April, 2004
Tur	8th April, 2005
Urad	26th July, 2004
Sugar	27th July, 2004
Guar	10th April, 2004

A summary of the results obtained from detailed analyses is as follows.

1. Traded volumes and value of chana, wheat have shown an increase while sugar, tur, urad and guar seed have shown a decline over the two year time period used in the analysis.

2a. Maturity spot and futures price often do not converge in most of the commodities and do not have any predictable pattern indicating arbitrage between cash and futures market is not likely to be strong. However, there was no abnormal increase in the volatilities of prices towards the end of the contract.

2b Imposition of compulsory delivery seems to have increased delivery and convergence for chana and sugar. However, this impact is not seen in the case of guar, wheat, urad and tur.

3. Basis Risk Vs Price Risk

A summary of analysis on the basis risk in comparison to spot price risk is shown in table 2.

Table 2 : Summary of Basis Risk vs Price risk

Commodity	Basis risk > Price risk
Wheat	14 out of 26 cases
Chana	5 out of 26 cases
Tur	0 out of 12 cases
Tur Desi	0 out of 4 cases
Urad	4 out of 17 cases
Urad Desi	4 out of 4 cases
Sugar	13 out of 26 cases
Guar	1 out of 26 cases

Basis risk, a measure of hedging attractiveness, is high in many commodities. It was higher than the spot price risk especially for wheat and sugar for nearly 50 per cent of the contracts. In the case of Guarseed and tur the basis risks are small indicating attractiveness of futures trading for price risk management.

4. Market cointegration analysis showed that long run equilibrium between spot and futures exists in all the commodities. We have also seen that spot prices adjust to futures prices in the short run in all cases except wheat where futures prices also respond to spot price changes. If the futures market is able to incorporate information about supply and demand faster than the spot prices, then this is a desirable trend. But if the futures prices are dominated by speculation this may create unnecessary volatility in the spot market. The result also indicated that except in the case of wheat and sugar in all other commodities the extent of risk reduction is reasonable and likely to improve over time. However, strong linkage between futures and spot, required for efficient market functioning is yet to develop. This is likely due to lack of hedging, which may be the result of high basis risk and non-convergence of prices.

5. Volatility in spot market: There is no major change observed in the volatilities in spot prices for chana, tur and sugar while in case of guar the volatility has reduced after the introduction of futures exchange trade. In case of wheat, and urad there is

an increase in the spot volatilities after introduction of futures.

6. In case of chana and wheat the difference between peak season and lean season prices have increased considerably after introduction of futures trading.

7. Except in the case of wheat and sugar, in all other commodities studied there is no substantial change in the difference between primary whole prices and retail prices. The difference between lean and peak season prices also has not changed. In the case of wheat we could see the difference between the mandi prices and the retail prices going up during the post-exchange era indicating that the effect of price increase en-cashed mostly by the intermediaries and not the farmers. In the case of sugar the wholesale retail price spread has come down during the post exchange period.

8. An important outcome seem to be that, in all cases we have seen that after introduction of futures trading there is stronger spatial integration between physical markets. The futures prices seem to have served as reference market for physical markets.

Our analysis shows a mixed result. The major changes in the prices of various commodities are attributable to changes in demand and supply conditions. However, the futures markets have not yet fully served purpose of risk management. While there is long run equilibrium between the prices of physical and futures market, the short run cash-futures linkage needs to be strengthened. A significant outcome is the futures markets did help in integrating geographically separated physical markets likely due to the fact that they serve as reference markets. In the case of chana, sugar, wheat and tur, there is improvement in correlation between weekly price changes in wholesale and retail markets in Post Exchange period. In the absence of an efficient spot market, the futures market so far may have helped in integrating spot markets, while their use in the risk management functions is yet to develop in a significant way. In some commodities such as guarseed and pulses the extent of price risk reduction has been encouraging. As futures trading concepts are internalized in the decision making process of various players in the value chain and as they start using the market for risk management purpose, the extent of spot and futures market integration is likely be strengthened and that will inturn encourage further use of futures market.

Primary survey of farmers, traders, processors were done to find out extent of awareness of futures trading, use of spot price information, sources of price information, participation in the futures trading and perception on futures market. The findings are summarized in tables 3-8.

Table 3: Summary Findings of Survey: Farmers

Crop	Total farmer sample	Average land holding in acres (percent irrigated)	Percent illiterate and modal education level	Number of farmers aware of futures trading	Percent of farmers seek spot price information	Percent farmers able to defer sales among those obtaining information (Mean no. of days deferred)	Average change in price obtained from 2005 to 2006	Percent of sample who retained and increased area under the crop
Wheat	781	7.34 (86%)	14, Class 1-6	11	48	40, (20)	+15%	72, 12
Chana	424	8.31 (47%)	7, Class 1-6	5	68	48, (25)	+15%	76, 17
Tur	384	17.31 (35%)	12, Class 1-6	6	62	51, (32)	+20%	72, 14
Urad	384	6.3 (47%)	18, Class 6-10	5	60	52, (32)	+23%	75, 21
Sugarcane	466	13.08 (88%)	15, Class 6-10	10	NA	NA	+10%	75, 19
Guar	275	7.71 (0%)	19, Class 6-10	0	25	45, (20)	+11%	79, 15

Table 4: Summary Findings of the Survey: Farmers (cont)

Crop	States	Popular information sources on prices	Popular information sources on farming techniques	Popular Marketing channels
Wheat	UP	Market and fellow farmers	Input Dealers and AEO	Village traders and APMC
	Gujarat	Fellow farmers	AEO	Pvt traders and APMC
	Haryana	Radio and market	Input Dealers and AEO	Village traders and company
	MP	Market and fellow farmers	Input Dealers and AAO	APMC and Village traders
	Mah	Market and fellow farmers	AEO and Progressive farmers	APMC and Village traders
	Punjab	Newspaper (MSP)	Input Dealers and Progressive farmers	APMC and Village traders
	Rajasthan	Fellow farmers	Input Dealers and AEO	Village traders and Traders
Chana	UP	Fellow farmers and market	Radio and AAO	Village broker and APMC
	Maharashtra	Fellow farmers and market	Progressive farmers and AEO	APMC
	MP	Fellow farmers and market	Input Dealers and AAO	Traders
	Rajasthan	Fellow farmers and market	Input Dealers and Progressive farmers	APMC and Village broker
Tur	Madhya Pradesh	Market and Newspapers	Input Dealers and Progressive farmers	APMC and Village broker
	Maharastra	Newspapers and Radio	Progressive farmers and AAO	APMC and directly to company
	Rajasthan	Market and fellow farmers	AEO and KVK	APMC and Village broker
	Uttar pradesh	Market and fellow farmers	Input Dealers and Progressive farmers	APMC and Village broker
Urad	Andhra pradesh	Market and fellow farmers	Progressive farmers and AEO	Village broker
	Madhya Pradesh	Fellow farmers and Market	Input Dealers and AAO	Village broker and APMC
	Maharastra	Market and fellow farmers	Progressive farmers and AAO	APMC and Village broker
	Rajasthan	Market	AEO and Input Dealers	Traders and village brokers
	Uttar pradesh	Fellow farmers and Market r	Input Dealers and Progressive farmers	APMC and Village broker
Sugar	UP	Sugar factory	AEO and Input Dealers	Sugar factory
	Maharashtra	Sugar factory	AEO and AAO	Sugar factory
	AP	Sugar factory	Input Dealers and progressive farmers	Sugar factory
	Punjab	Sugar factory	Input Dealers and AEO	Sugar factory
	Haryana		Input Dealers and progressive farmers	
	Tamilnadu		Radio and Input Dealers	
Guar	Gujarat	-	AEO	Private traders
	Haryana	Newspaper and market	Input Dealers and AEO	APMC and Village broker
	Punjab	-	Input Dealers and Progressive farmers	APMC and Village broker
	Rajasthan	Newspaper and market	AEO and Input Dealers	APMC and Village broker

Table 5: Summary Findings of the Survey: Traders

Crop	Total trader sample	Average storage in months	Change in turnover in 2006 compared to 2005	% awareness on online trading (% awareness on national exchanges)	Most popular means of awareness	Percent of aware sample participating and type of majority participation	Exchange preferred for participation	Major commodities traded	Basis for positions taken	Percent of participants in online trading who say that they benefited
Wheat	30	2	30% increase	100 (100)	Internet, News paper	57, Speculator	NCDEX	Cereals	Broker advice, Gut feel	0
Chana	57	2	11% increase	100 (87)	Newspaper	23, Speculator	NCDEX	Pulses	Broker advice, Gut feel	22
Tur	47	2	54% increase	57 (34)	Newspaper	9, Speculator	NCDEX	Pulses	Broker advice, Gut feel	50
Urad	45	1	40% increase	80 (100)	Fellow trader and Newspaper	33, Speculator	NCDEX	Pulses	Broker advice, Gut feel	22
Sugar	30	3	9% increase	100(100)	Newspaper and fellow trader	27, speculator and hedger	NCDEX, Regional exchange, Hapur	Sugar and cereals	Broker advice, Gut feel	17
Guar	30	2	14% increase	100(100)	Internet	100, speculator	NCDEX,	All agri products	Broker advice, Gut feel	97

Table 6: Summary Findings of the Survey: Traders (cont)

Crop	Main merit of futures trading	Main de-merit of futures trading	Percent reported increased spot volatility post exchanges	Reasons for increased volatility (if any)	Percent of total sample taking decisions based on futures prices	Types of decision taken
Wheat	Maintain stability in market	Increased Speculation	61	Futures trading and illegal hoarding	47	Product portfolio, stocking and selling
Chana	Efficient Price discovery	Distortion by large players	88	Increased imbalances in D&S, Futures trade	9	Stocking and selling
Tur	Support trade by giving direction	Increased price fluctuation	75	Entry of corporates and illegal hoarding	11	Product portfolio, stocking
Urad	Support trade by giving direction	Wrong signals to market	71	Futures trading and illegal hoarding	11	Product portfolio, stocking
Sugar		Increased price fluctuation	100	Futures trading and illegal hoarding	7	Stocking and selling
Guar	Maintain stability in market	Increased price speculation	10		87	Product portfolio and selling

Table 7: Summary Findings of the Survey: Processors

Crop	Total processors	Popular channel of procurement of raw material	Price forecasting tools	Change in turnover in 2006 compared to 2005	% awareness on online trading (% awareness on national exchanges)	Most popular source of awareness	Percent of aware sample participating and type of majority participation	Exchange preferred for participation	Major commodities traded
Chana	14	Brokers and Mandi traders	Futures and spot price	87% increase	77 (100)	Fellow processors	22, speculation	NCDEX	Pulses
Tur	14	Brokers and Mandi traders	Spot price and news	37% increase	46 (14)	Newspaper and Radio	0	NA	NA
Urad	12	Brokers	Spot price and news	14 % increase	42 (100)	Newspaper	40, speculation and hedging	NCDEX	Pulses
Sugar	13	Farmers	Spot price and sugarcane acerage	43 % decrease	70 (100)	Newspaper	-	-	-
Guar	10	Brokers	-	12 % increase	100(100)	Exchange representative	100, speculation and hedging	NCDEX	Guar gum

Table 8: Summary Findings of the Survey: Processors (cont)

Crop	Percent of participants in online trading who say that they benefited	Main merit of futures trading	Main de-merit of futures trading	Percent reported increased spot volatility post exchanges	Reasons for increased volatility if any
Chana	50	Source of price forecast	Distortion by large players	100	Increased imbalances in D&S, Futures trade
Tur	NA	Support procurement by giving price direction	Distortion by large players	46	Increased imbalances in D&S
Urad	20	Platform for hedging	Increased speculation	80	Increased imbalances in D&S and monopoly of traders
Sugar	-	-	-	38	Increased imbalances in D&S
Guar	33	Platform for hedging	Distortion by large players	100	Increased imbalances in D&S

Summary of the observations from Primary Survey Data

The findings from the primary survey are as follows:

- Only a handful of farmers were aware of the term futures and had very preliminary understanding of the concept.
- More than half of the farmers do not even consider that knowledge of prevailing prices of the crops they grow is important when they are selling the crops as they have to sell the produce at whatever price is offered.
- Less than half of the farmers are able to defer sales by a maximum of 20-30 days of harvesting in expectation of better price.
- Most of the sampled farmers said that there is an increase in prices received by them for all the target commodities during 2006 compared to 2005 season. The increase is as high as 23% in case of urad.
- Due to increased prices, the area under the crops have been retained and in some cases area under the crop increased.
- Fellow farmers and traders are popular sources of price information.
- Technical information on crops is mainly obtained through input dealers, progressive farmers and Government officials such as AAOs and AEOs. The same agents could be utilized to create awareness about futures trading.
- The recent effort to disseminate futures price information through APMCs, commercial banks, post offices and RRBs is a welcome move in creating awareness about futures trading. However, a large proportion of commodities is sold at the village level itself through brokers and village level traders, and therefore, even if futures prices information is available at APMCs, it may not reach all the farmers.
- Majority of the traders and processors have registered increase in traded volumes as a result of increasing prices of commodities.
- There is fairly good knowledge about futures trading and national level exchanges among traders and processors.
- However, their participation level is low and also the confidence level on the exchanges.
- There is hardly any hedge participation by the processors or traders. The participation is mainly for speculative purpose. Moreover, the basis of taking

position is purely gut feel or technical advise given by brokers. Traders' do not have a clear idea about the basis for futures prices.

- Traders and processors feel that their knowledge of the commodity might be helpful in taking positions in the futures market.
- Volatility increases in prices of agri commodities after they were listed for futures trade, surprised many stakeholders. (It also tempted many traders to participate in futures to earn 'big money', which they could not achieve in the physical market). The main frustration of traders and processors is why price of commodity in future market does not go the way fundamentally it should be? At some point of time these stakeholders realize that their years of experience in this trade is worth nothing when they appeared as losers.
- Traders and processors have indicated both fundamental reasons (imbalances in demand and supply) as well as speculation through futures trading for the increase in volatility in the spot markets during post exchange period.
- Very few traders take important decisions regarding their product portfolio and timing of buy and sell based on futures prices.

The survey revealed that awareness about the future trading among the farmers is negligible. With the existing marketing infrastructure and the farmers merely accepting the offered price, information on futures prices could become a potent tool for bargaining. However, for this to happen the average farmers has to be made aware of, organized and most importantly create warehousing and financing arrangements to meet his immediate needs. Infrastructure development such as storages would be a key requirement in improving performance of markets.

The quality specifications, delivery norms, margin and lot sizes of most of the commodities traded at the bourses, make it difficult for the average farmers (and even traders and processors) to directly participate in exchange trading as hedgers. So, there is a need to properly introduce 'aggregators' where hedging in the exchanges is done by them and can unbundle the contract to farmers. NCDEX is trying to reach out farmers through cooperatives, banks and NGOs who could act as aggregators. The Government could think of enabling cooperatives to bridge this important link.

The futures markets so far have had positive impact on price discovery. The integration between various spatially separated markets have improved as the futures market and associated spot price dissemination are likely playing the role of reference market. The

long run relationship between spot and futures prices is also strong. However, in the short run there are aberrations particulary in commodities like wheat where the physical and futures market relationship needs strengthening.

The use futures market for risk management purpose so far has been very limited except in the case of guarseed where there is a reasonable amount of hedging taking place. Strengthening short run cash futures price relationship by encouraging hedgers to use futures market for hedging purpose, needs immediate attention.

Commodity futures trading being a reasonably complex process requires time to fine tune them to individual commodity situation. The exchanges are at the beginning of the learning curve. There is need for a large scale campaign to build awareness among various actors in the value chain. Infrastructure facilities such as storages have to be adequately provided. Institutional arrangements such as aggregators have to be brought in. Exchanges have to take up confidence building measures (through strict measures to control excessive volatility).

The exchanges should play a greater role in awareness and confidence-building programs and demonstrate the use of futures market to various potential hedgers in the value chain. Each exchange should focus on a few commodities at a time to involve potential hedgers in the value chain by creating awareness, building confidence to hedge in the futures and fine tune their systems and processes to facilitate user requirements. There is a strong perception in the minds of potential hedgers that large players could be manipulating markets. It is important for the exchanges to allay these fears by reducing daily price limits, reducing the role of market makers and strengthening self-regulation. Government could facilitate infrastructure such as warehousing, grade standards and credit facilities through involvements of institutions such as banks, etc. Use of futures trading by various government agencies dealing with buying and or selling of commodities could be encouraged to hedge their risk in the commodity futures. As these agencies generally deal in large volumes, their participation will increase hedging substantially, which in turn will help in strengthening physical and futures markets and build confidence among the other players in the market to use the futures market. Additionally, as many government agencies will look for physical delivery, it would help to streamline the delivery mechanism in terms of processes and grade standards. This will help other players to understand the futures mechanism well and also help in strengthening physical and futures market integration.

APPENDIX-II

FUTURES TRADE IN SELECTED AGRICULTURAL COMMODITIES

(Brief Write-Ups)

After liberalization of futures trade in 2003, about 100 commodities have been permitted for trade on the platforms of National as well as Regional Exchanges. Trade could gain liquidity only in a few of dozen commodities. In case of agriculture the record is still less impressive. Here an attempt is being made in the shape of brief write-up on agricultural commodities which are either of sensitive nature or have shown very high trade interest viz-a-viz the size of their physical market. These write-ups highlights the characteristics which made futures trade click in these commodities. In some sensitive commodities futures trade has thrown up some challenges. A brief analysis in respect of four commodotis (viz Tur, Urad, Wheat and Rice) has been given. Brief write-up below gives a snap shot picture in respect of 6 other commodities :

1. SUGAR

India is the second largest producer of sugar in the world after Brazil. India is also the largest consumer of Sugar in the world. Sugar and its byproducts play a pivotal role in India's industrial economy and contribute around two percent of GDP. Sugarcane, which is the main input, is also used for producing other sweeteners like jaggery (gur) and khandsari.

In India, a small portion of sugarcane is also used for by-product industry like industrial and potable alcohol, paper and for the generation of electricity. 65 to 70% of the sugarcane is utilized for sugar production and balance for khandsari and Gur. The main sugarcane producing centers in India are Uttar Pradesh, Maharashtra, Karnataka, Tamil Nadu together accounting for 75% of the total production.

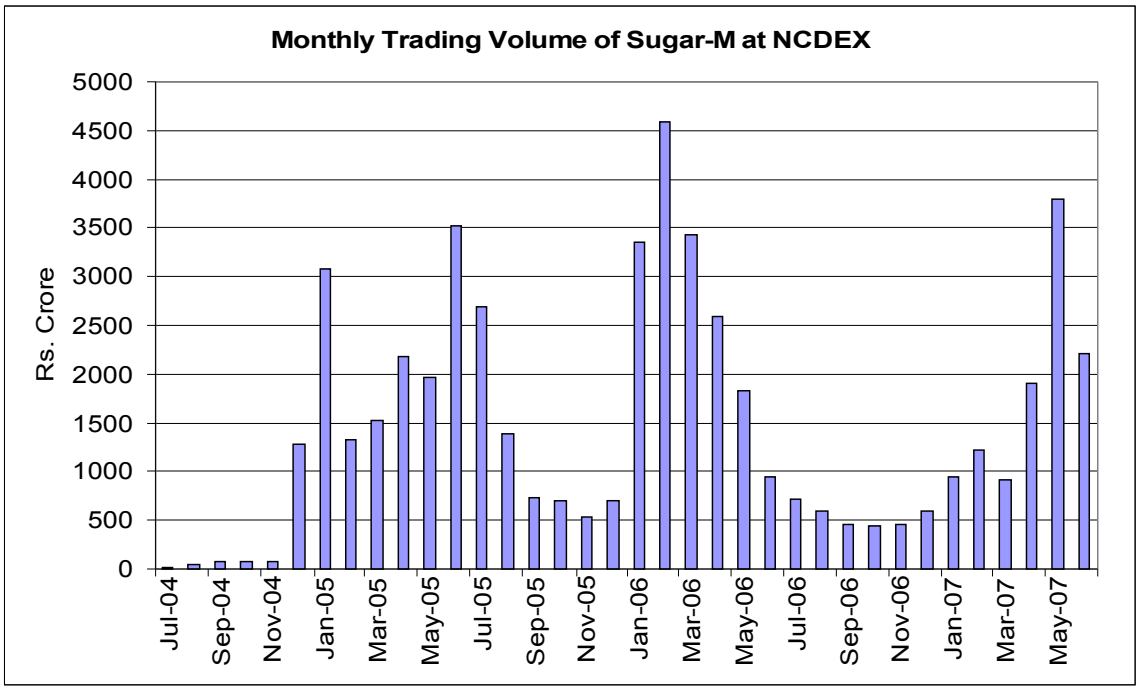
The excess production in India and Brazil has caused glut in world market and has resulted in fall in sugar prices. India total sugar production in 2006-07 will be nearly 307

lakh tones while Brazil will produce 325 lakh tones, resulting in excess supply. This is very well reflected in declining trend of sugar prices from June 2006.

Futures Trading in Sugar

FMC gave initial permission to launch Futures trade in Sugar on 28th January 2003 to NMCE Ahmedabad. Subsequently, trading in Sugar futures was introduced at NCDEX and MCX on 27th July 2004 and 18th August 2004, respectively. Sugar Futures contract gained significant liquidity in NCDEX. There has been widespread participation from sugar mills with the ratio of hedge limits utilized to open interest on NCDEX being around 45%.

Trend in Volume of Sugar on NCDEX



As can be observed from the above, peak volume in sugar was prevalent during January 2006 to March 2006. Increased activity in the contract suggests that there was a hightened speculative interests in the commodity by the Futures Market participants due to anticipation of demand supply situation.

In order to address high speculative interest in the market, FMC undertook rationalisation of position limits and the same were reduced from 1,00,000 MT to 30,000 MT for members and from 25,000 MT to 10,000 MT for clients. Restrictive near month limits were also placed at 1/10 of the aggregate limits.

The stringent regulatory measures had there impact on volume of futures trading. The average daily volume of trade in Sugar contract, which was Rs.507.69 crores on 10th February 2006 declined to Rs.27.80 crores on 21st July 2007.

2. GUAR SEED & GUM

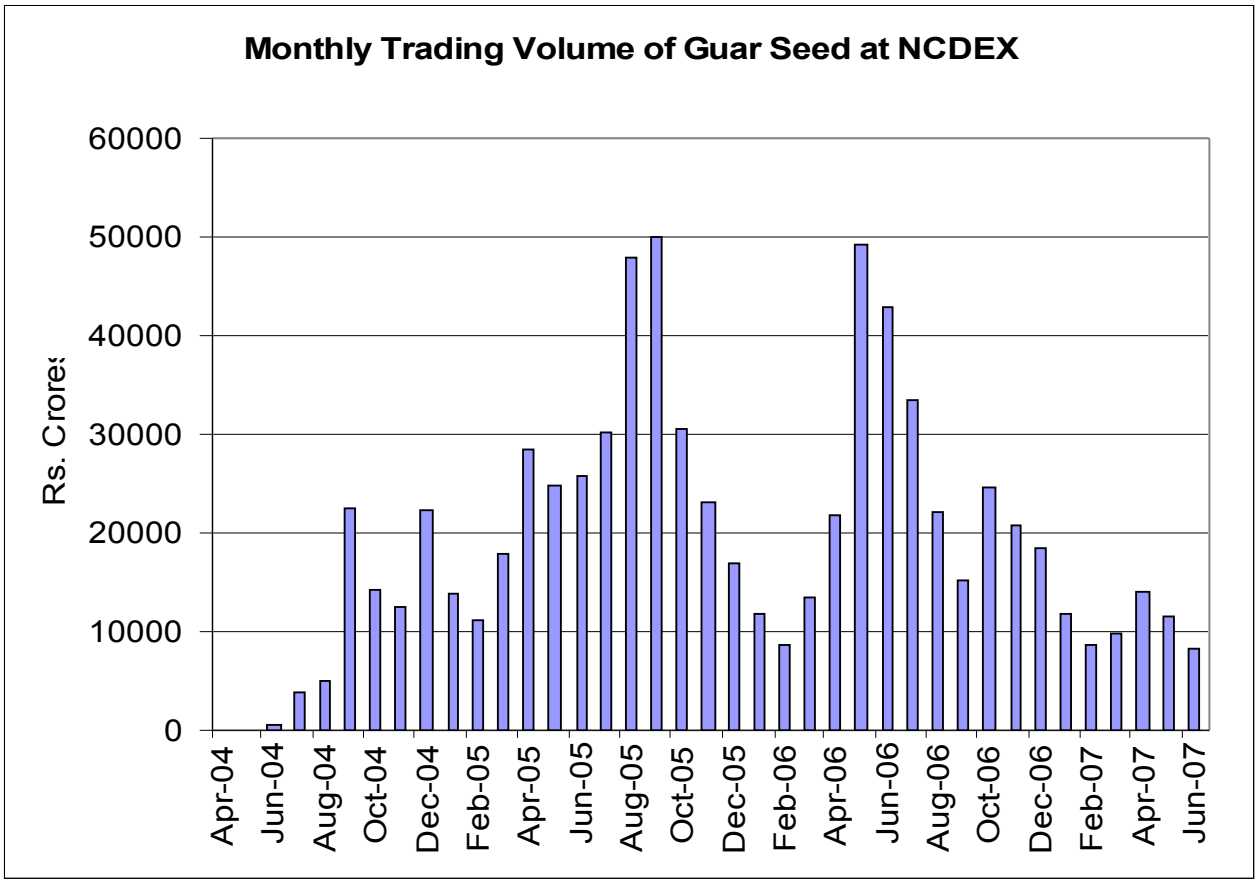
Among the agricultural commodities Guar seed is the commodity which has been most actively traded in the National Exchanges. Because of high trading volumes coupled with high volatility in prices, Guar seed contracts have attracted lot of attention from various stakeholders, as also have been subjected to stiff regulatory measures.

Guar has a share of 0.27% share in India's agricultural GDP. It is mainly produced in the State of Rajasthan and Haryana. Guar seed is used to make guar gum that constitutes 0.23% of India's total exports under the agriculture & allied products. Guar gum is used in the process of manufacturing, mining, oil exploration, cementing & in several other processes and rapid developments in these fields has enhanced the demand for guar gum domestically as well as internationally.

Futures Trading in Guar Seed & Gaur Gum

The Futures contract in Gaur seed has attracted substantial liquidity in the NCDEX platform, though it has also shown some interest in NMCE and MCX. Guar seed & Gum were launched on NCDEX platform on 12th April 2004 & 23rd July, 2004 repectively. However, volumes picked up on NCDEX platform only since July-Aug 2004.

Trading volume in NCDEX



As is evident from the charts above, the highest volumes seen in guar seed & gum is during its crop cycle ie during the months of July-September. As it is mostly grown in unirrigated areas of Rajasthan and Haryana , the crop is highly dependent on monsoons. Hence, we can see the major amount of trading interest been shown in the months of July-September in both guar seed as well as its derivative guar gum.

With a bumper production of 15 lakh tonnes, prices dipped in the kharif season of FY04. The production in kharif FY05 was lower which led to rise in prices. In 2005-06, while production did improve, it was still lower than that achieved in FY04 by over 30%. Even before the commodity was launched on NCDEX for futures trading there were very active informal (illegal) markets in Guar seed in Rajasthan. The huge activity on NCDEX futures, to a large extent, is a shift from informal platforms to a formal platform.

The Guar seed prices traditionally demonstrate huge price volatility. In the month of December 2006, due to heightened speculaticve activity and increased volatitlty, the Commission after analyzing the market trend introduced stringent regulatory measures. Minimum of 20% margin on all long and short positions was imposed. Daily price limit was reduced from 6% to 4% and delivery was made mandatory in Gur gum and Guar seed from April 2006 contracts. Further position limits have also been reduced from 25000 MT to 9000 MT for members and from 5000 MT to 3000 MT for clients in respect of Guar seed. In addition to the above aggregate limits, near month limits were also reduced substantially. These measures have contained price fluctuations as also reduced volume of trade in the commodity.

3. CHANA

India is the world's largest producer of pulses, which are an important component of the Indian diet. India is also the largest consumer of pulses in the world, accounting for about 27% of consumption.

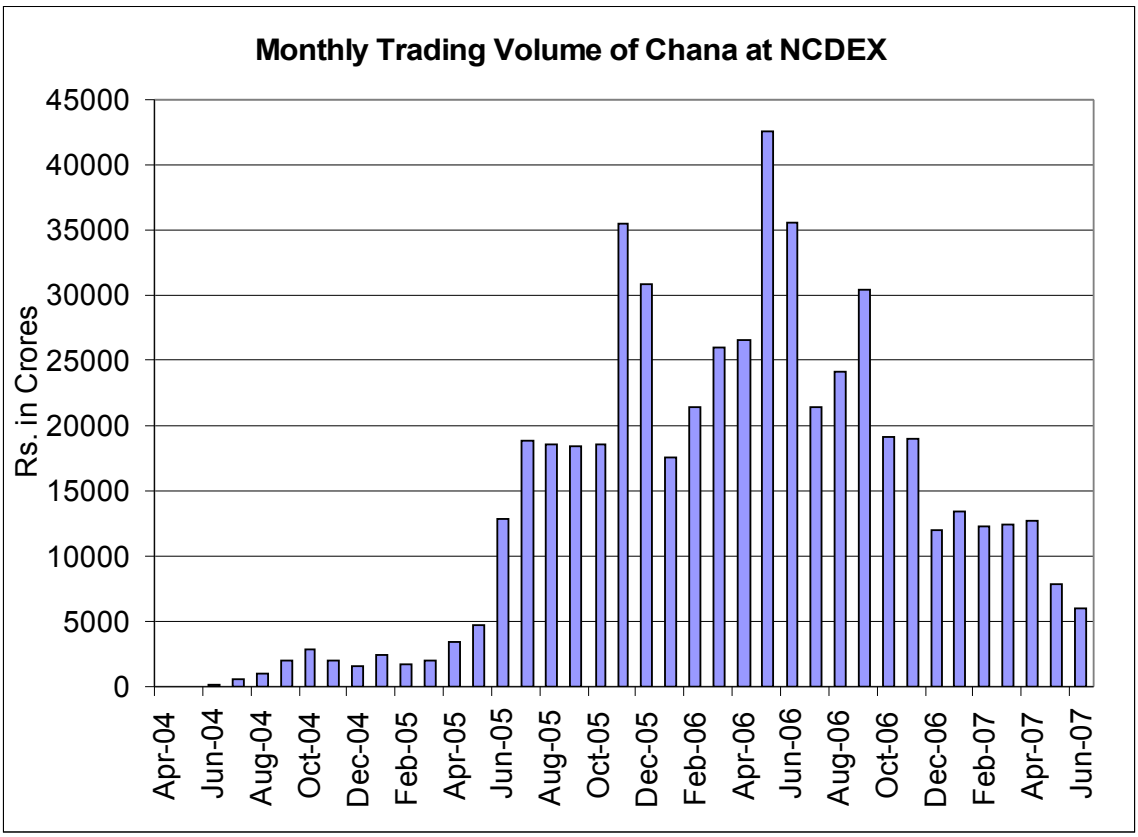
Among the different varieties of pulses grown in the country, Chana (chick pea) is the chief pulse and accounts for a dominant share of around 40 percent of total pulses production.Chana is a rabi crop which is sown in the months of November and December and harvested during February and March.

Futures Trading in Chana

FMC, on 8th April 2004, granted permission to NCDEX for organizing futures trading in Chana. Though the permission was also given to MCX and NMCE, however significant liquidity could not be attained in those exchanges.

The Chana futures market has witnessed spectacular growth. Volumes in the first year of operation FY 05 amounted to 10.6 million tonnes which grew by more than 10% in the in FY 06. This momentum has not been sustained since then and in fact there has been a declining trend observed in futures volumes.

NCDEX Trading Volume in Chana



The commodity had a period of speculative surges during the period October 2005 to July 2006. It is to be noted that the volume / production ratio has gone up during 2006. This indicates that the volume growth has been closely associated with crop prospects and traders expectation of stock situation in the country.

The Commission had received complaints from various Associations about the excessive speculation in Chana futures and suggested ban on future trading on pulses including Chana. The Commission kept the Chana contract under close observation and levied

margins from time to time. During October 2006 due to high volatitlity in prices additional / special margins to the extent of 25 % on long and 15 % on shorts were imposed. The outstanding position limits were reduced from 80,000 MT to 30,000 MT for members and from 20,000 MT to 10,000 MT for clients. Restrictive near month limits were also kept in placed along with limit on daily price fluctuation. The strigent regulatory measures resulted in reducing the leverage of the traders and reduced their ability to hold large positions. As a result of strict regulatory measures the daily volume of trade in the Chana contract which was about Rs.1287.96 crores on 1.7.2006 contracted and stood at Rs 258.15 crores on 21.7.2007.

4. JEERA

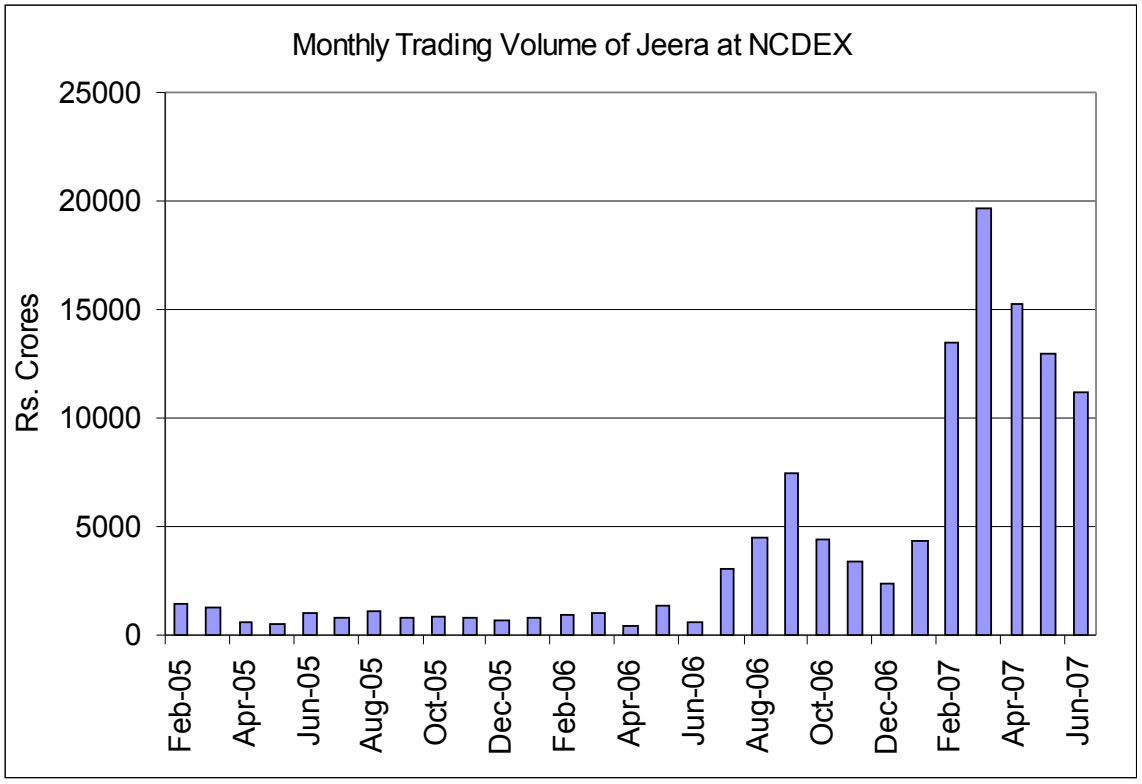
India occupies first position in production and consumption of Jeera in the world. It contributes about 80% in the total world production. Exports as a percentage of production is also high, close to 10%. Around six states are producing Jeera with major growing centres in Unjha, Sabor Khati, Patan, Kutchh, Sourasthra and Rajasthan. Its share in total acreage is 1.2% and its share in agriculture GDP is 0.18%.

The domestic and global factors affecting supplies of Jeera in the market have affected the price in the last few months. Jeera prices have gone up sharply in first half of 2007 compared with last two years.

Futures Trading In Jeera :

The FMC permission was granted to MCX for futures trading in Jeera on 26th September 2005. Futures trading was introduced by NCDEX in March 2005 and volumes picked up from the initial days itself. However there was a limited liquidity in MCX and NMCE

The following table depicts the trend in Volume of Jeera on NCDEX platform:



There was heightened speculative activity in Jeera in the National Exchanges, especially in NCDEX where the Jeera contract attracts maximum liquidity. The daily turnover in this contract has reached to about Rs 1367.36 crores during March 2007. In order to address this issue Commission has imposed margins of 25% on the long side and 20% on short side w.e.f. from 16.4.2007. In addition to the above, it was also felt that there is significant shortfall in the production of Jeera affecting the deliverable supply of the commodity in the market. Therefore, Commission also imposed lower near month limits on the clients and members. However, considering the decline in the prices in the subsequent months, the Commission reduced the margins to 18.5% on long and 12.5% on short. The Commission also increased the near month position limits in the month of July 2007.

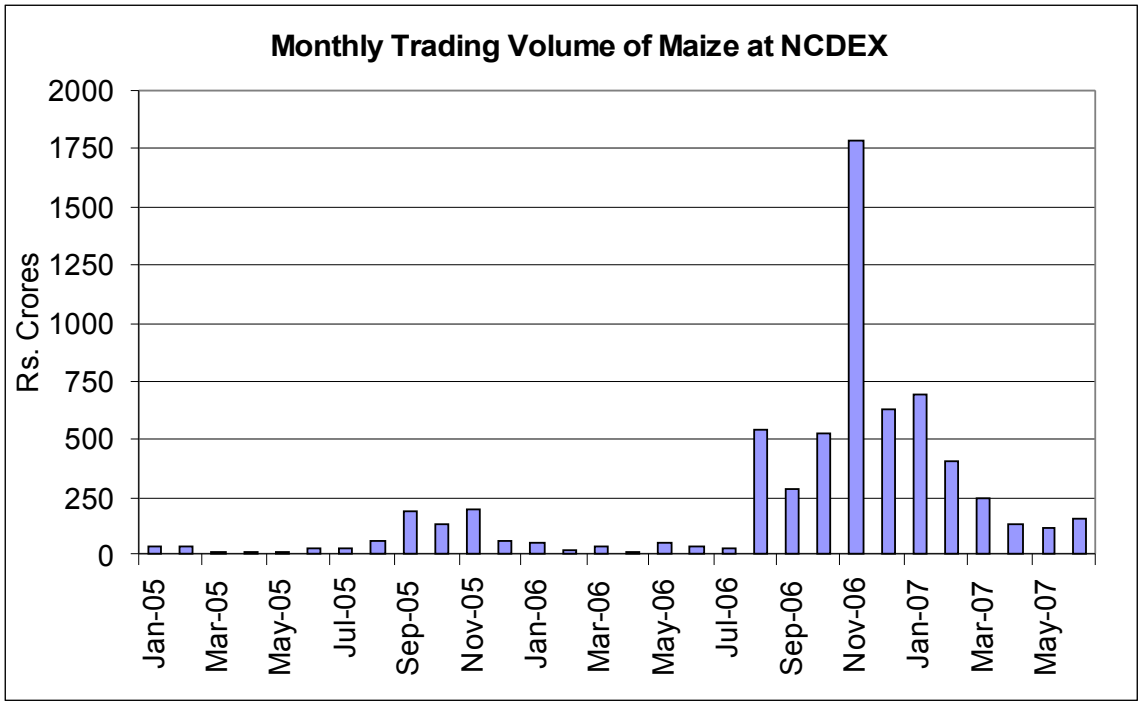
5. MAIZE

India is the 7th largest producer of maize in the world. Approximately 80-85% of the maize crop is grown in Kharif (June-October) mainly in the states of Rajasthan, Madhya Pradesh, Andhra Pradesh, Uttar Pradesh and Karnataka.

Futures Trading in Maize

FMC has given permission to two National Exchanges viz., NCDEX and MCX for futures trade in Maize. Liquidity has only been observed in NCDEX platform. The trading volumes in maize picked up only since July 2006. The interest however was short lived and after April 2007, the monthly volume has been less than Rs.250 crores.

The volume of trade in Maize futures contract traded at NCDEX is given in the following graph:



Output of the crop came down to 13.9 million tonnes in FY07 from 14.7 million tonnes in FY06. This was compounded by the global scenario and a strong correlation between the CBOT futures and Indian spot prices which was as high as 83%. Due to large quantity

of maize diversion in US (the largest producer & exporter of maize) for ethanol production, despite increasing maize acreage, has led to great uncertainty in the importing markets leading to internationally high maize prices. Because of inherent shortage in the stock levels, there was a bullish interest in the commodity. This also generated lot of speculative activity in maize futures contracts.

The Commission after analyzing the market trends had imposed margin of 20% payable by buyers and also reduced the outstanding position limits from 2,00,000 MT to 45,000 MT for members and from 50,000 MT to 15,000 MT for clients in the month of August 2006. These limits were further reduced to 30,000 MT for members and 10,000 MT for clients in the month of November 2006.

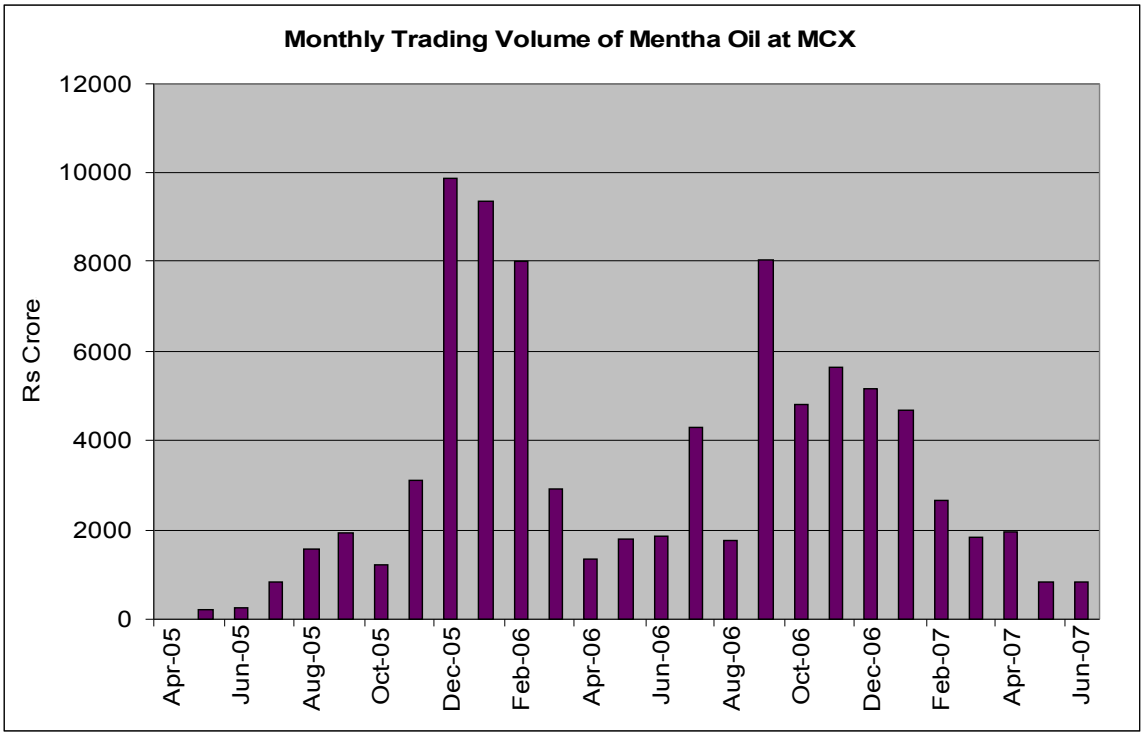
The tightening of regulatory measures reduced the volume of futures trading in Maize. The volume of trade which was Rs.205.75 crores on 9th November, 2006 came down to Rs.3.81 crores on 21st July 2007.

6. MENTHA OIL

India is the largest producer of Mentha Oil and mint allied products in the world. The world's production of Mentha Oil is 20,000 MT. India annually produces 12000 -15000 MT of Mentha Oil and exports amount 10000 MT. Indian consumption of mentha oil is about 4000 – 5000 MT in pharmaceuticals, perfume industry and for other products and remaining is exported. The crop is sown in the month of January – February, harvested during June and July. Nearly 80% of the total crop is cultivated in the western area of the state of Uttar Pradesh and remaining 20% in the states of Punjab and Haryana. The main markets of Mentha oil are located at Chandausi, Barabanki, Rampur, Sambhal, Bareli and Badaun.

Futures trading in Mentha Oil

The futures trading in Mentha Oil was commenced for the first time on 26th April 2005 at MCX. In addition NCDEX was also permitted futures trading in Mentha Oil, which commenced operations on 28 September 2005. The contract has attained good liquidity in the MCX platform.



High outstanding positions were noticed in the months of December 05 and January 06. During the month of November 2005 the prices of near month contracts of Mentha Oil were within the range of Rs.445-550 per Kg., which witnessed a notable rise in the month of December when near month contract price exceeded Rs.800/-. The price of December 05 contract registered a rise of 83% on 28.12.2005 as compared to the price on 1.11.2005. At the direction of the Commission, the Exchanges had imposed additional margin of 4% on long positions from 23.12.2005 and again imposed 5% additional margin on long positions on 31.12.2005.

Commission also made deliveries mandatory in the Mentha Oil contract from January 2006 contract. The Commission also prescribed near month limits for the contract and the outstanding position limits were also reduced from 540 MT to 200 MT for clients.

The volume of trade which was Rs. 821.97 crores on 24th January 2006 declined to Rs.44.70 crores on 21st July 2007.

Annexure – I

No. F 21/12/2007-IT
Government of India
Ministry of Consumer Affairs, Food & Public Distribution
Department of Consumer Affairs

Shastri Bhavan, New Delhi
Dated 2nd March, 2007

OFFICE MEMORANDUM

There has been considerable discussion regarding whether and to what extent futures trading has contributed to the price-rise in agricultural commodities in recent times. The Government has, therefore, decided to set up an expert Committee to go into this question in detail. The composition of the Committee is given below:

1. Professor Abhijit Sen, ---Chairman
   Member, Planning Commission
2. Shri Sharad Joshi, MP, ---Member
3. Prof. Siddharth Sinha,
   IIM, Ahmedabad ---- Member
4. Prof. Prakash Apte, ---- Member
   Director, IIM, Bangalore
5. Dr. Kewal Ram,
   Member,
   Forward Markets Commission,
   Mumbai -Member- Convenor

3. The Terms of Reference of the Committee are as under:

   i) To study the extent of impact, if any, of futures trading on wholesale and retail prices of agricultural commodities;

   ii) Depending on (i) to suggest ways to minimize such an impact;

   iii) Make such other recommendations as the Committee may consider appropriate regarding increased association of farmers in the futures market/trading so that farmers are able to get the benefit of price discovery through Commodity Exchanges.

4. The Committee will be serviced by the office of the Forward Markets Commission.

5. The Committee may co-opt other Experts in the relevant fields as may be necessary.

6. Payment of TA/DA to non-official Members shall be borne by FMC.

7. The Committee may submit its report in two months.

This issues with the approval of Minister of Consumer Affairs, Food and Public Distribution.

(Paul Joseph)
Senior Economic Adviser
Tel. No. : 23384840

To:

1. Professor Abhijit Sen
   Member, Planning Commission,
   Yojana Bhawan,
   New Delhi.
2. Shri Sharad Joshi,
   Member, Rajya Sabha,
   12 A, Meena Bhawan,
   New Delhi.
3. Prof. Siddharth Sinha,
   Indian Institute of Management,
   Ahmedabad .
4. Prof. Prakash Apte,
   Director,
   Indian Institute of Management,
   Bangalore
5. Dr. Kewal Ram,
   Member,
   Forward Markets Commission,
   Mumbai.

Copy for information to : PS to Minister, CAF & PD
Sr. PPS to Secretary (CA)

ANNEXURE – IIA

PERSONS WHO MET THE EXPERT COMMITTEE

1. Shri Jairam Ramesh, Minister of State of Commerce & Industry, Government of India
2. Shri D.P. Yadav, M.P. & Chairman, Parliamentary Committee of MCAF&PD (a written presentation).
3. Shri S S Surjewala, Member of Parliament, Lok Sabha.
4. Shri Deepinder Singh Hooda, Member of Parliament , Lok sabha.
5. Shri Yahwant S. Bhave, Secretary, Deptt. of Consumer Affairs.
6. Shri T. Nandakumar, Secretary, Deptt. of Food & PD.
7. Shri S.M. Jharwal, Principal Secretary, Minisry of Agriculture
8. Shri U. K. S. Chauhan, Joint Secretary (Mktg), Deptt. of Agriculture.
9. Shri S. Sundareshan, Chairman, Forward Markets Commission.
10. Shri Alok Sinha, Chairman, Food Corporation of India.
11. Dr. T. Haque, Chairman, Commission for Agricultural Costs and Prices (CACP), New Delhi.

12. Representatives of HAFED/NAFED
    - i) Shri Sudhir Rajpal, Managing Director, HAFED
    - ii) Shri S. P. Gupta, Chief General Manager, HAFED
    - iii) Shri K. C. Sardana, Deputy General Manager, HAFED.
    - iv) Shri Kailash Jyani, Additional Managing Director, NAFED

13. Representatives of Corporates.

    - i) Shri Sivkumar, Chief Executive, ITC- Agri Business, Secundarabad
    - ii) Shri B. K. Anand, Business Manager, Cargil India Pvt. Ltd.,
    - iii) Shri Santosh Kumar, Business Manager – Oilseeds & Proteins, Cargil India Pvt. Ltd., Gurgaon
    - iv) Shri Viraj Tarkunde, Trading Manager, Cargil India Pvt. Ltd.,
    - v) Shri Pravin Dongre, CEO, Glencore Grain India Pvt., Ltd., Mumbai

14. Representatives of Exchanges.

i) Shri P. H. Ravikumar, Managing Director & CEO, NCDEX Ltd., Mumbai.

ii) Shri Narendra Gupta, Chief, Strategy, NCDEX Ltd., Mumbai.

iii) Shri Bashyam Seshan, Chief ,Compliance Officer, NCDEX Ltd., Mumbai.

iv) Shri Madan Sabnavis, Chief Economist, NCDEX, Mumbai.

v) Shri Sanjay Kaul, Director, NCDEX Institute of Commodities Research (NCIR), Mumbai

vi) Shri Hariprasad, MD & CEO, National Collateral Management Services Ltd., (NCMSL), Mumbai

vii) Shri Raghunathan, Vice President – Business Development, NCDEX

viii) Shri Achinty Karat, Head, – Government & Institutional Relationship, NCDEX, New Delhi.

ix) Shri Joseph Massey, Deputy Managing Director, MCX, Mumbai.

x) Shri Anjani Sinha, Director, MCX, Mumbai.

xi) Shri Suresh Chandra Sampadak, Chairman, CoC, Hapur.

ANNEXURE-IIB

PERSONS/ORGANIZATIONS WHO SENT WRITTEN SUBMISSIONS TO THE EXPERT COMMITTEE

1. Shri Shankerlal Guru, Chairman, The States Ex MLA Council of India, Ahmedabad
2. Shri Chetan Desai, Kotak Commodities
3. Shri Jitendra Kr. Gupta, Executive-Agri, Agra
4. Shri Bholabhai Patel, Chairman, Rashtriya Kisan Dal, Gujarat Unit
5. Shri Shrikant Bihani, Research Analyst, Mumbai.
6. Shri Fardeen Siddiquee,
7. Shri Girish Chandwani, Manager, Pursons Commodities Pvt Ltd.
8. Shri Suresh Mantri
9. Shri Sandip Agarwal, Free Lance Economist
10. Shri. Firoz Haider Naqvi, Chief Editorial Coordinator, Oil & Food Journal, Advance Info Media & Events, Mumbai
11. Shri Sanjay Shah, President, Bombay Commodity Exchange, Mumbai
12. Shri Anjani Sinha, Managing Director & CEO, National Spot Exchange Ltd., Mumbai
13. Shri David Jain, Chairman, The Central Organisation for Oil Industry & Trade, New Delhi
14. Shri Pankaj Khemka, Managing Partner, Om Commodity Brokers
15. Shri Shankerlal Prajapati, Editor, Kissan Bole Che
16. Mr. Alok Ranjan, IAS, Managing Director, National Agricultural Co-operative Marketing Federation of India Ltd. (NAFED), New Delhi.
17. Shri K. V. Raju, Zonal Chairman, Vizag, National Egg Co-ordination Committee (NECC),
18. Shri M. Srinivasa Rao, Executive Committee Member, National Egg Co-ordination Committee.
19. Shri G. K. Rama Raju, Regional President, Andhra Pradesh Poultry Federation, Uttar Andhra Region
20. Shri R. Nallathambi, President, Tamil Nadu poultry Farmers, Association, Namakkal.
21. Shri Kanhaiyalal Gidwani, Former Member, Maharashtra Legislative Council
22. Shri N. Kanniah, State President, Tamil Nadu Consumer Protection Centre, Chennai.
23. Shri Gireesh Kumar Sanghi, Member of Parliament –Rajya Sabha
24. Smt. Anuradha J.Desai, Chairperson, National Egg Coordination Committee, Pune.