

Parameters for Performance Review of Commodity

MAIZE - FEED / INDUSTRIAL GRADE

1. Background

a. Brief about the commodity such as sample picture, lifecycle and various varieties/grade of the commodity found in India

Maize (*Zea mays* L.) belongs to the Poaceae (Gramineae) family and is known as Queen of Cereals due to its diverse uses. It is also referred to as Corn. It occupies an important place in world agriculture, being cultivated in more than 150 countries, including USA, China, Brazil, Ukraine, Argentina and India. In India, Maize is the third most important crop after rice and wheat. Maize has diversified uses and widely used as human food, poultry feed, animal feed, industrial (starch) products, beverages and seed. Maize requires moderate climate for growth, excess or deficient rains adversely affect yields as well quality. It grows well in loamy soils. Maize in India is grown in both Kharif and Rabi seasons. Proportionate share of Kharif and Rabi season maize in total maize production remains around 70% and 30%, respectively. In kharif, it is sown in June-July till mid-August and harvested from mid-September. The major producing states in India are Karnataka, Andhra Pradesh, Maharashtra, Madhya Pradesh and Uttar Pradesh. In Rabi, maize is grown mainly in Bihar, West Bengal, parts of Uttar Pradesh and coastal region of Andhra Pradesh. The arrivals of rabi sown maize starts from late March and extend up to June-July.



Crop Cycle (India)												
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maize Kharif												
Maize Rabi												
	Sowing			Harvesting								

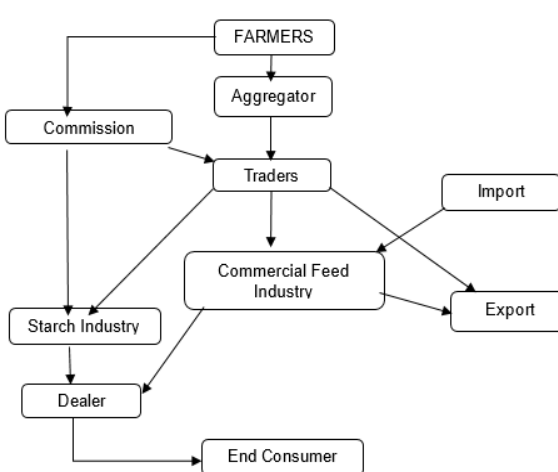
Life Cycle: Value Chain of the Commodity	Major Varieties of Maize and NCDEX Quality Specifications										
 <pre> graph TD FARMERS --> Commission FARMERS --> Aggregator Commission --> Traders Aggregator --> Traders Traders --> Commercial Feed Industry Traders --> Starch Industry Traders --> Export Import --> Traders Import --> Commercial Feed Industry Commercial Feed Industry --> Export Starch Industry --> Dealer Dealer --> End Consumer </pre>	<p>Major Varieties</p> <p>KNMH-4010141, DMRH1301, CoH (M) 10, CoH (M)8, DHM 121 (BH 41009), Pant Shankar Makka-1, DHM 119 (BH 4062), Maize Hybrid AH-58 (PEHM3)</p> <p>NCDEX: Quality Parameters</p> <table border="1"> <tr> <td>Count</td><td>Up to 400 grains per 100 grams</td></tr> <tr> <td>Moisture</td><td>14% max</td></tr> <tr> <td>Fungus</td><td>1% Max</td></tr> <tr> <td>Broken, Damaged, slightly damaged, Discolored, Immature kernels and Weeviled grains.</td><td>8% max. Out of this weeviled grains will be 0.5% max.</td></tr> <tr> <td>Foreign Matter</td><td>2% max</td></tr> </table> <p>Maize shall be free from any colouring agent, moulds, live pests and obnoxious smell</p>	Count	Up to 400 grains per 100 grams	Moisture	14% max	Fungus	1% Max	Broken, Damaged, slightly damaged, Discolored, Immature kernels and Weeviled grains.	8% max. Out of this weeviled grains will be 0.5% max.	Foreign Matter	2% max
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Table: Reference Years for Commodities

Sl. No.	A	B	C
Crop Season	Kharif	Kharif (Long Duration crop)	Rabi
Crops	Paddy, Maize, Bajra, Moong, Soybean, Guar seed, Kapas, Sesame Seed	Castor seed and Turmeric	Wheat, Barley, Chana, RM Seed, Coriander, Jeera
Relevant Processed commodities	Guar gum, Soybean meal, Soy oil, Cotton, Cotton seed Oil cake, Gur, CPO	Castor Oil	-
Sowing Time	July onwards	July onwards	October onwards
Harvesting Time	Oct onwards	Jan onwards	March onwards
Reference Year			
Financial Year 2022-23 (Apr-Mar)			
Corresponding Years			
Production Year (PY)	2022-23 (July-Sept)	2021-22 (July-June)	2021-22 (July-June)
Marketing Year (MY)	2022-23 (Oct-Sept)	2022-23 (Jan/Feb-Dec/Jan)	2022-23 (Mar/Apr - Feb/Mar)
Calendar Year (CY)	2022 (Jan-Dec)	2022 (Jan-Dec)	2022 (Jan-Dec)
Relationship b/w Various Years	Current Financial Year = Current Production Year = Current Marketing Year = Calendar Year	Current Financial Year = Previous Production Year = Current Marketing Year = Current Calendar Year	Current Financial Year = Previous Production Year = Current Marketing Year = Current Calendar Year
Example	FY 2022-23= PY 2022-23= MY 2022-23= CY 2022	FY 2022-23= PY 2021-22 = MY 2022-23= CY 2022	FY 2022-23= PY 2021-22 = MY 2022-23= CY 2022

Note: Coffee is a plantation crop; hence, it is not classified under either Kharif or Rabi season in the above table.

Explanatory Notes:

- India is a vast country and various crops are sown and harvested at different point of time. However, two major crop seasons, are there i.e. Kharif & Rabi. Apart from it, Zaid/Summer season is also there.
- Crop seasons are classified based upon sowing time. Normally Kharif season sowing starts from mid-June/July and new crop arrivals begin from Oct/Nov. However, early/late sowing/harvesting also takes place. Rabi season sowing usually takes place mainly from October/November and harvesting starts from March/April. Early/late sowing/harvesting also takes place. Summer crops/Zaid crops are short duration crops mainly sown during January-March and harvested during April-June.
- “Production Year” is considered as “July to June”. With the start of monsoon rains during June/July the sowing of Kharif season starts and they are harvested during Sept/Oct. From Oct onwards the sowing of Rabi season crops starts and harvesting usually takes place during March/April. Thus, a single production cycle completes between July-Sept period covering Kharif, Rabi and Zaid crops. Thus production year remains same for all season crops and the period corresponds to July-Sept.
- “Marketing Year” for each crops starts from beginning of the harvest time i.e. from start of new crop produce arrivals in the market. Thus, for Kharif crops Marketing Year is generally considered as “October to September”, while for Rabi crops Marketing Year is considered as “April to March”. However, Marketing Year may vary slightly for some of the crops depending upon early/late maturity/harvesting.
- For processed commodities, their production starts after the start of new season crop arrivals of their underlying crop.

b. Commodity fundamentals and balance sheet as per the following format (to be prepared based on publicly available information on best effort basis):

Table - Fundamentals & Balance sheet (quantity)

(In Lakh Tonnes)

Global Scenario	Previous FY (2021-22)	Current FY (2022-23)
Opening Stocks	2928	3069
Production	12170	11445
Imports	1846	1740
Total Supply	16944	16254
Exports	2057	1738
Domestic Consumption	11818	11562
Closing Stocks	3069	2953

Source: USDA, April 2023

(In Lakh Tonnes)

Indian Scenario	Previous FY (2021-22)	Current FY (2022-23)
Opening Stocks	20.95	24.79
Production	337.30	346.10
Imports	0.17	0.50
Total Supply	358.42	371.39
Exports	33.63	40.00
Domestic Consumption	300.00	306.00
Closing Stocks	24.79	25.39

Source: USDA, April -2023

Please refer to Table entitled "Reference Years for Commodities" to know type of years corresponding to financial year.

(In Lakh Tonnes)

Rank	Top 10 Major Producing Countries			Top 10 Major Consuming Countries		
	Country	Previous FY (2021-22)	Current FY (2022-23)	Country	Previous FY (2021-22)	Current FY (2022-23)
1	United States	3829	3488	United States	3171	3037
2	China	2726	2772	China	2910	2970
3	Brazil	1160	1250	European Union	831	781
4	European Union	714	530	Brazil	705	730
5	Argentina	495	370	Mexico	440	448
6	Ukraine	421	270	India	300	306
7	India	337	346	Canada	180	143
8	Mexico	268	276	Egypt	170	147
9	South Africa	161	167	Japan	151	150
10	Russia	152	158	Argentina	148	120
	Others	1907	1818	Others	2813	2731
	World Total	12170	11445	World Total	11818	11562

Source: USDA, April 2023

Countries are arranged in descending order based on the figure in Current FY

(In Lakh Tonnes)

Rank	Top 10 Major Exporting Countries			Top 10 Major Importing Countries		
	Country	Previous FY (2021-22)	Current FY (2022-23)	Country	Previous FY (2021-22)	Current FY (2022-23)
1	United States	628	470	China	219	180
2	Brazil	483	500	European Union	198	245

Rank	Top 10 Major Exporting Countries			Top 10 Major Importing Countries		
	Country	Previous FY (2021-22)	Current FY (2022-23)	Country	Previous FY (2021-22)	Current FY (2022-23)
3	Argentina	344	250	Mexico	176	172
4	Ukraine	270	255	Japan	150	150
5	European Union	60	22	Korea, South	115	110
6	Paraguay	48	31	Egypt	98	75
7	Russia	40	41	Vietnam	92	92
8	India	34	40	Iran	86	82
9	South Africa	32	34	Colombia	65	58
10	Burma	25	23	Canada	61	11
	Others	94	73	Others	586	565
	World Total	2057	1738	World Total	1846	1740

Source: USDA, April 2023

Countries are arranged in descending order based on the figure in Current FY

(In Lakh Tonnes)

Top 10 Major Producing States in India			
Rank	States	Previous FY (2019-20)	Current FY* (2020-21)
1	Karnataka	42.58	53.62
2	Madhya Pradesh	40.70	38.82
3	Maharashtra	19.60	35.20
4	Tamil Nadu	24.76	25.65
5	West Bengal	20.08	24.36
6	Rajasthan	12.07	22.70
7	Bihar	20.03	20.84
8	Uttar Pradesh	16.94	18.18
9	Andhra Pradesh	20.17	17.81
10	Telangana	30.00	17.57
	Others	40.74	41.73
	All India	287.66	316.47

Source: Ministry of Agriculture; *State wise production data is available only up to FY 2020-21.

States are arranged in descending order based on the data in the Current Year

Please refer to Table entitled "Reference Years for Commodities" to know type of years corresponding to financial year.

c. Major changes in the policies governing trade in the spot markets of the commodity

Date	Major Policies governing trade and related changes
19-May-22	Ministry of Agriculture released Third Advance Estimates of Production of Food grains for 2021-22 and estimated Maize Production for 2021-22 at 331.80 lakh tonnes, which is 15% higher as compare to 287.7 lakh tonnes during the last year.
31-May-22	IMD upgrades monsoon forecast Raises precipitation to 103 per cent of long period average
8-Jun-22	Govt. announced MSP for Kharif crops for marketing season 2022-23. Maize MSP has been increased by 5% y-o-y from Rs 1870/Qtl. to Rs 1962/Qtl.
8-Dec-22	India mulls curbs on maize exports as industry complains of shortage The Indian government is mulling curbs on the export of maize (corn), including a ban, with its prices ruling above ₹2,150 a quintal and demand from the poultry and starch manufacturing sector increasing. Sources in the know said the Ministry of Food Processing Industry has written to the Commerce Ministry seeking a ban after starch manufacturers took up the case of higher prices and non-availability. "The issue is under consideration," sources, who did not wish to be identified, as they are not authorized to speak.

d. Geo political issues in the commodity and its impact on Indian scenario.

Russia's invasion on Ukraine has raised supply concern for wheat, corn and edible oil supply in the Global market. Ukraine is one of the major exporters of Maize. So far as India I concerned, its imports are insignificant.

2. Trading related parameter

a. Monthly and Annual traded volume (quantity in appropriate units)

Month	Year	Symbol	Traded volume (MT)
Apr	2022	MAIZE	130
May	2022	MAIZE	400
June	2022	MAIZE	320
July	2022	MAIZE	30
August	2022	MAIZE	-
September	2022	MAIZE	-
October	2022	MAIZE	-
November	2022	MAIZE	1,110
December	2022	MAIZE	-
January	2023	MAIZE	-
February	2023	MAIZE	-
March	2023	MAIZE	-
Annual Traded Volume (MT) (April'22 to March'23)			1,990

b. Annual traded volume as proportion of total deliverable supply (quantity in appropriate units)

Symbol	Traded Volume (MT)	Deliverable Supply(MT)	Proportion
MAIZE	1,990.00	37,139,000	0.00

c. Annual traded volume as proportion of total annual production (quantity in appropriate units)

Symbol	Traded volume (MT)	Production(MT)	Proportion
MAIZE	1,990	34,610,000	0.00

d. Annual average Open interest as proportion of total production

Symbol	Average Open Interest (MT)	Production(MT)	Proportion
MAIZE	106	34,610,000	0.00

e. Annual average Open interest as proportion of total deliverable supply

Symbol	Average Open Interest (MT)	Deliverable supply(MT)	Proportion
MAIZE	106	37,139,000	0.00

f. Monthly and Annual value of trade (in Rs. Crores)

Month	Year	Symbol	Traded value (in Rs. Crores)
Apr	2022	MAIZE	0.28
May	2022	MAIZE	0.89
June	2022	MAIZE	0.71
July	2022	MAIZE	0.07
August	2022	MAIZE	-
September	2022	MAIZE	-
October	2022	MAIZE	-
November	2022	MAIZE	2.52
December	2022	MAIZE	-
January	2023	MAIZE	-
February	2023	MAIZE	-
March	2023	MAIZE	-
Annual Traded Volume (in Rs Crores) (April'22 to March'23)			4.48

g. Monthly and Annual quantity of delivery (in appropriate units)

Expiry Month	Year	Symbol	Total Delivery (in MT)
April	2022	MAIZE	40
May	2022	MAIZE	190
June	2022	MAIZE	-
July	2022	MAIZE	-
August	2022	MAIZE	-
September	2022	MAIZE	-
October	2022	MAIZE	-
November	2022	MAIZE	-
December	2022	MAIZE	1,070
January	2023	MAIZE	-
February	2023	MAIZE	-
March	2023	MAIZE	-
Annual value of delivery (in MT) (April'22 to March'23) (April'22 to March'23)			1,300

h. Monthly and Annual value of delivery (in Rs. Crores)

Expiry Month	Year	Symbol	Total Delivery Value (in Cr)
April	2022	MAIZE	0.10
May	2022	MAIZE	0.44
June	2022	MAIZE	-
July	2022	MAIZE	-
August	2022	MAIZE	-
September	2022	MAIZE	-
October	2022	MAIZE	-
November	2022	MAIZE	-
December	2022	MAIZE	2.38
January	2023	MAIZE	-

February	2023	MAIZE	-
March	2023	MAIZE	-
Annual value of delivery (in Crores) (April'22 to March'23)			2.91

i. Monthly and Annual Average Open Interest (OI) (in appropriate units)

Month	Year	Symbol	Average Open Interest (MT)
Apr	2022	MAIZE	37
May	2022	MAIZE	114
June	2022	MAIZE	61
July	2022	MAIZE	9
August	2022	MAIZE	-
September	2022	MAIZE	-
October	2022	MAIZE	-
November	2022	MAIZE	511
December	2022	MAIZE	510
January	2023	MAIZE	-
February	2023	MAIZE	-
March	2023	MAIZE	-
Annual Average OI (MT) (April'22 to March'23)			106

j. Annual average volume to open interest ratio

7.49%

k. Total number of unique members and clients who have traded during the financial year

Symbol	Member Count	Client Count
MAIZE	10	19

l. Ratio of open interest by FPOs/farmers/Hedge/VCP positions to total open interest (Annual average as well as maximum daily value)

Annual Average	2.29%
Maximum Daily Value	0.00%

m. Number of unique FPOs / farmers and VCPs/hedgers who traded in the financial year

Commodity	Count
MAIZE	2

Commodity wise client categorization is as per category details as provided by the members.

n. Algorithmic trading as percentage of total trading

Commodity	%
MAIZE	0.00%

o. Delivery defaults

Number of instances	0
Quantity involved	0
Value involved	0

3. Price Movements
a. Comparison, correlation and ratio of standard deviation of Exchange futures price vis-à-vis international futures price* (wherever relevant comparable are available).

Correlation			
	<i>Futures</i>	<i>Spot</i>	<i>Int'l Price</i>
<i>Futures</i>	1		
<i>Spot</i>	0.652029	1	
<i>Int'l Price</i>	-0.05256	0.03555	1

Standard Deviation			
	<i>Futures</i>	<i>Spot</i>	<i>Int'l Price</i>
<i>Futures</i>	1	0.924212	1.274507
<i>Spot</i>	1.082002	1	1.37902
<i>Int'l Price</i>	0.784617	0.725153	1

***CME Corn futures is considered for International futures price**

b. Comparison, correlation and ratio of standard deviation of Exchange futures price vis-à-vis international spot price (wherever relevant comparable are available) and domestic spot price (exchange polled price).

NA

c. Correlation between exchange futures & domestic spot prices along with ratio of standard deviation.

Correlation			
	<i>Futures</i>	<i>Spot</i>	<i>Int'l Price</i>
<i>Futures</i>	1		
<i>Spot</i>	0.652029	1	
<i>Int'l Price</i>	-0.05256	-0.03555	1

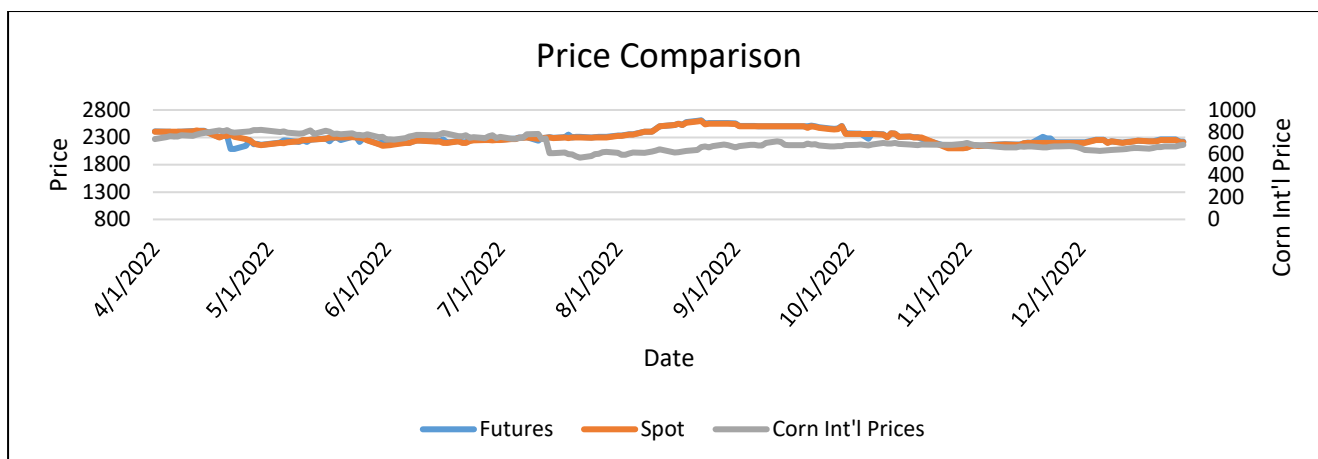
Standard Deviation			
	<i>Futures</i>	<i>Spot</i>	<i>Int'l Price</i>
<i>Futures</i>	1	0.924212	1.274507
<i>Spot</i>	1.082002	1	1.37902
<i>Int'l Price</i>	0.784617	0.725153	1

d. Correlation between international futures & international spot prices along with ratio of standard deviation (wherever relevant comparable are available).

NA

e. Comparison of Exchange polled price and mandi price (in case of agricultural commodities) /other relevant price (in case non-agricultural commodities) at basis centre.

NA



Source: Spot and Future Prices: NCDEX, Mandi Prices: Agmarknet

- f. Maximum & Minimum value of daily futures price volatility and spot price volatility along with disclosure of methodology adopted for computing the volatility. (Volatility calculated by Squareroot of Standard Deviation of daily returns for the period from 1 April 2022 to 31 March 2023)**

Value of daily futures price volatility (April 2022- March 2023)

Volatility	Month	Value
Max	Apr	0.024
Min	Feb	0.00478

Value of daily Spot price volatility (April 2022- March 2023)

Volatility	Month	Value
Max	Mar	0.027
Min	Feb	0.0048

- g. Number of times the futures contract was in backwardation/ contango by more than 4% for the near month contract in the period under review**

Contango	2
Backwardation	31

4. Others parameters

- a. Qualitative and quantitative measure for Hedge effectiveness ratio and basis Risk (Volatility of Basis) along with disclosure of methodology adopted for such calculations

	MAIZE
Basis Volatility	12.36
Hedge efficiency	0.71

The methodology for hedge efficiency ratio calculation is appended as Annexure 1

- b. Details about major physical markets of the commodity vis-à-vis market reach in terms of availability of delivery centers (information to be provided state-wise and UT-wise).

State	Major Physical Markets	Availability of NCDEX Delivery center
Telangana	Nizamabad	ADC
	Warangal	
	Karimnagar	
	Mahboobnagar	
	Khammam	
Andhra Pradesh	Kurnool	
	Vizianagram	
Bihar	Naugachhia	
	Gulabgh	Basis/ ADC
	Khagaria	
	Purnea	
Karnataka	Koppal	
	Davangere	
	Ranebennur	
	Bagalkot	
	Gadag	
	Hubli	
	Shimoga	
Maharashtra	Sangli	ADC
	Jalgaon	
	Aurangabad	
Madhya Pradesh	Chhindwara	Basis / ADC
Punjab	Khanna	
	Ludhiana	
Tamil Nadu	Namakkal	
Delhi	Delhi	
Gujarat	Ahmedabad	
West Bengal	Kolkatta	

- c. Details about major physical markets of the commodity and average Open Interest for each month generated from those regions.

Note – The OI for each month is classified based on the Member level. The Average OI is on gross level (Long OI + Short OI)

State	Rajasthan MT	Bihar (Gulab Bagh)	Delhi (MT)	Maharashtra
April-22	8	6	-	53
May-22	-	3	8	206
June-22	-	10	13	99
July-22	-	11	6	-
August-22	-	-	-	-
September-22	-	-	-	-
October-22	-	-	-	-
November-22	-	-	-	1022
December-22	-	-	-	1021
January-23	-	-	-	-
February-23	-	-	-	-
March-23	-	-	-	-

Note - The OI for Custodian Participation is not mapped to any State/ location and hence not considered in the above data.

d. Details, such as number and target audience, of stakeholders' awareness programs carried out by the exchange.

Following list of Awareness programme, Stakeholder engagement programme has conducted for FY2022-23

Sr. Number	Programme	Location	Number of Participants
1	Awareness Programme	Kamareddy	72
2	Awareness Programme	Mandsaur, Madhya Pradesh	65
3	Awareness Programme	Nizamabad	77
4	Awareness Programme	Vita Block, Sangli (Maharashtra)	45
5	Awareness Programme	Neemuch, Madhya Pradesh	40
6	Awareness Programme	Jath -Khanapur Block, Sangli	45
7	Awareness Programme	Khanapur, Telagana	85
8	Awareness Programme	Rayaparthi, Telagana	70
9	Awareness Programme	Godda, Jharkhand	50
10	Awareness Programme	Karandighi, Uttar Dinajpur	40
11	Awareness Programme	Malda, West Bengal	42
12	Awareness Programme	Nabarangpur, Odisha	75
13	Awareness Programme	Koraput, Odisha	47
14	Awareness Programme	Kandhamal, Odisha	53
15	Awareness Programme	Beervalli	80
16	Awareness Programme	Koratikal, Telangana	70
17	Awareness Programme	Solapur, Maharashtra	67
18	Awareness Programme	Khandwa, Madhya Pradesh	80

19	Awareness Programme	Bhubaneswar	90
20	Awareness Programme	Satara, Maharashtra	87
21	Awareness Programme	Pune, Maharashtra	120
22	Awareness Programme	Prathipadu, Andhra Pradesh	60
23	Awareness Programme	Seoni, Madhya Pradesh	50
24	Awareness Programme	Chhindwara, Madhya Pradesh	60
25	Awareness Programme	Duggondi, Telangana	50
26	Awareness Programme	Petsangam, Telangana	60
27	Awareness Programme	Narasaraopet, Andhra Pradesh	60
28	Awareness Programme	Parvatagiri, Telangana	60
29	Awareness Programme	Kammarpally, Telangana	30
30	Awareness Programme	Pembi	60
31	Awareness Programme	Sangli, Maharashtra	54
32	Awareness Programme	Gandhari	45
33	Awareness Programme	Rudrur	100
34	Awareness Programme	Kolhapur, Maharashtra	71
35	Awareness Programme	Solapur	187
36	Awareness Programme	Martur	60
37	Awareness Programme	Buldhana	70
38	Awareness Programme	Raisen	51
39	Awareness Programme	Old Bagalkot	50
40	Awareness Programme	Beed	92
41	Awareness Programme	Nallbelli	60
42	Awareness Programme	Banahatti	50
43	Awareness Programme	Betul	35
44	Awareness Programme	Gondia, Maharashtra	49
45	Awareness Programme	Kolkata	35
46	Awareness Programme	Surat	18
47	Awareness Programme	Guna, Madhya Pradesh	30
48	Awareness Programme	Anjar, Lutch, Gujarat	38
49	Awareness Programme	Raipur, Chhattisgarh	112
50	Awareness Programme	Patan, Gujarat	104
51	Awareness Programme	Nashik	200
52	Awareness Programme	Udaipur	150
53	Awareness Programme	Rajkot	100
54	Awareness Programme	Hissar	100
55	Awareness Programme	Nagpur, Maharashtra	120
56	Awareness Programme	Raipur	100
57	Awareness Programme	Gwalior, Madhya Pradesh	78
58	Awareness Programme	Bhopal , MP	54
59	Awareness Programme	Indore, Madhya Pradesh	47
60	Awareness Programme	Siliguri, West Bengal	39
61	Awareness Programme	Alipurduar, West Bengal	31
62	Awareness Programme	Meerut, Uttar Pradesh	30
63	Awareness Programme	Bhopal, Madhya Pradesh	44
64	Awareness Programme	Indore, Madhya Pradesh	80
65	Awareness Programme	Chennai, Tamil Nadu	24
66	Awareness Programme	Kanpur, Uttar Pradesh	60
67	Awareness Programme	Chindwara, MP	50
68	Awareness Programme	Seoni , MP	40

69	Awareness Programme	Kolkata	25
70	Awareness Programme	Raipur, Chattisgarh	136
71	Awareness Programme	Lucknow	177
72	Awareness Programme	Rourkela	65
73	Awareness Programme	Muzaffarnagar	70
74	Awareness Programme	Kochi	86
75	Awareness Programme	Bhilai	70
76	Awareness Programme	Thalamadla	80
77	Awareness Programme	Kolkata	45
78	Awareness Programme	Online	30
79	Awareness Programme	Online	18
80	Awareness Programme	Online	23
81	Awareness Programme	Odisha	9
82	Awareness Programme	Odisha	15
83	Awareness Programme	Karnataka	5
84	Awareness Programme	Bihar	18
85	Awareness Programme	West Bengal	6
86	Awareness Programme	Andhra Pradesh	29
87	Awareness Programme	Online	11
88	Awareness Programme	Online	7
89	Awareness Programme	Online	21
90	Awareness Programme	Online	6
91	Awareness Programme	Online	9
92	Awareness Programme	Online	14
93	Awareness Programme	Online	82
94	Awareness Programme	Online	28
95	Awareness Programme	Online	25
96	Awareness Programme	Online	50
97	Awareness Programme	Online	30
98	Awareness Programme	Online	25
99	Awareness Programme	Online	5
100	Awareness Programme	Online	10
101	Awareness Programme	Online	7
102	Awareness Programme	Online	13
103	Awareness Programme	Online	16
104	Awareness Programme	Online	23
105	Awareness Programme	Online	53
106	Awareness Programme	Online	17
107	Awareness Programme	Online	30
108	Awareness Programme	Online	15
109	Awareness Programme	Online	25
110	Awareness Programme	Online	35
111	Awareness Programme	Online	10
112	Awareness Programme	Online	30
113	Awareness Programme	Online	12
114	Awareness Programme	Online	6
115	Awareness Programme	Online	7
116	Awareness Programme	Online	20
117	Awareness Programme	Online	50
118	Awareness Programme	Online	30
119	Awareness Programme	Online	13
120	Awareness Programme	Online	10
121	Awareness Programme	Online	6
122	Awareness Programme	Online	6
123	Awareness Programme	Online	8
124	Awareness Programme	Online	13
125	Awareness Programme	Online	6
126	Awareness Programme	Online	25

127	Awareness Programme	Online	8
128	Awareness Programme	Online	14
129	Awareness Programme	Online	11
130	Awareness Programme	Online	10
131	Awareness Programme	Online	6
132	Awareness Programme	Online	9
133	Awareness Programme	Online	14
134	Awareness Programme	Online	16
135	Awareness Programme	Online	11
136	Awareness Programme	Online	8
137	Awareness Programme	Online	8
138	Awareness Programme	Online	13
139	Awareness Programme	Online	15
140	Awareness Programme	Online	25
141	Awareness Programme	Online	25
142	Awareness Programme	Online	26
143	Awareness Programme	Online	18
144	Awareness Programme	Online	52
145	Awareness Programme	Online	16

e. Steps taken / to be undertaken to improve hedging effectiveness of the contracts as well as to improve the performance of illiquid contracts.

- Creating awareness about hedging and targeting the major feed, Cattel feed and starch processors/ Traders/ Stockiest
- Awareness Programme in major trading centres as well as remote location
- One to one meeting with market participants and hedgers

5. Any other information to be disclosed as deemed important by the exchange or as suggested by the PAC

N.A

ANNEXURE I

Qualitative and quantitative measure for Hedge effectiveness ratio

Methodology

Regression analysis is carried out between near month futures returns and NCDEX polled spot prices/returns of the FY2022-23.

The R-Square value of the Regression analysis represents the “**Hedging**

Efficiency”. Note: -

Date for which spot prices were not available is not used for analysis.

Weekly returns are used for performing Regression Analysis.

The method used to calculate Hedging Efficiency does not consider liquidity risk because of this reason illiquid commodities can have high hedging efficiency.

References:

Ghosh, Ph.D, Nilanjan & Dey, Debojyoti & Moulvi, Nazir & Jain, Niteen & Sinha, Neha & Rachuri, Sarika. (2013). Hedging Efficiency—Measures and Empirical Study.