Performance Review of Commodity

NATURAL WHITISH SESAME SEEDS

1. Background

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

Sesame (*Sesamum indicum* L.) is a short duration crop grown throughout the year which belongs to the family Pedaliaceae. It has been observed that Sesame is cultivated in India since ancient times. India ranks 3rd in production of sesame seeds in the world.

Sesame seeds are tiny, oval with a nutty taste and almost invisible crunch. Through the ages, the seeds have been a source of food and oil (40-50% oil content). Depending on the variety of the seed, they come in different colours like white, brown, black etc., Sesame seed oil is still the main source of fat used in cooking in the near and far east. As per market feedback whitish Sesamum seed account for around 75% of the Sesame oil has many medicinal values as it is good for respiratory disorders, eye-infections, and digestive ailments.

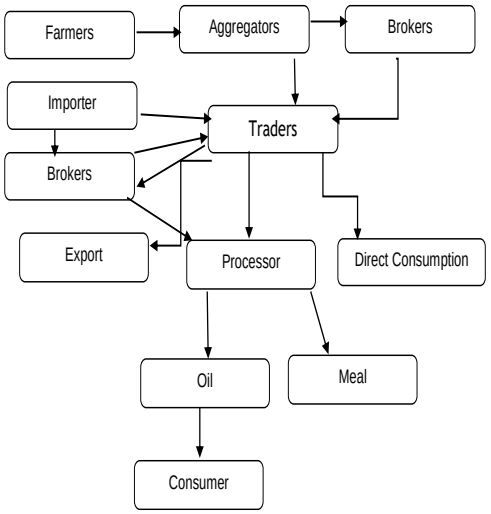
In India, the Sesamum crop can be cultivated as kharif, summer and semi-rabi crop. Around 75% of the Sesame seed is cultivated during the kharif period.

Crop cycle: The crop calendar for Sesame seed in various states across the country is as per the table below:

Season	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Kharif												
Rabi												
Summer												

Sowing Harvesting

Source: http://www.commoditiescontrol.com

Life Cycle: Value Chain of the Commodity	Major Varieties
	**White seed:** RT-46, 103, TKG-21,22, T-78, Sekhar **Brown / Black seed:** Rama, Savitri, PKDS-11,12 **NCDEX Quality Parameters** Natural Whitish Sesame Seeds 99x2x1 grade with the following specifications, Sesame to be necessarily machine cleaned: Whitish Seed: 99 % Basis Other Colored (Including 1% Max. Rain Damaged) Seeds: 2% Basis, from 2 % to 4 % Accepted at 1:1 Discount and above 4% to 5% at 1:2 Discount or part thereof, above 5% rejected Admixture: 1% Max FFA: 1.5 % Max Moisture content: 6% Max Oil content: 48% Min **Other Color Seed** includes dark seed, light seed (Small seed / Yellowish in color), Rain damaged, touched or rain affected seeds etc.

	Admixture: Anything other than sound Sesame Seeds, this will pass through a 1.0 mm round sieve hole and sorted matter on the purity workboard it includes all organic and inorganic matters like any mineral, animal or plant matter, Leaves, pods, twigs, earth, sand dust, stones, other crops seeds, detached seed coats and the likes.

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)

(Lakh Tonnes)

Global Scenario	Previous FY (2020-21)*	Current FY (2021-22)* (P)
Opening Stocks	NA	NA
Production	68.33	63.54
Imports	25.19	24.65
Total Supply	NA	NA
Exports	23.54	21.14
Domestic Consumption	NA	NA
Closing stocks	NA	NA

Source: FAO (May 2022); NA: Data is not available in the public domain; P: Provisional

Latest data for FY 2022-23 is not available.

*Data is not available as per financial year. It is provided as per Calendar Year (CY) (Jan-Dec);

(Lakh Tonnes)

Indian Scenario	Previous FY (2021-22)	Current FY (2022-23) (P)
Opening Stocks	8.73	NA
Production (Inclusive of all varieties)	7.89	7.49
Production of Whitish Sesame seeds	5.92	5.62
Import	0.21	0.24
Total Supply	16.83	NA
Export	2.42	1.94
Domestic Demand (including Direct Consumption+ Crushing)	1.25	NA
Total Demand (Exports + Domestic Demand+ seeds retained for sowings)	NA	NA
Closing Stocks	NA	NA

Source: Production: Ministry of Agriculture; P: Provisional; NA: Data is not available in the public domain;
Production data for 2022-23 is as per 2nd advance estimates of Production

Import/Export: Ministry of Commerce; HS codes used are 12074090 and 12074010; For FY 2022-23, Import and export data is available only for period of Apr 2022 to Jan 2023;

Domestic demand figure is re-produced as published by SEA of India. The same is not published by SEA of India for FY 2022-23; hence, figure for Total Demand cannot be calculated for FY 2022-23. It is not readily available in public domain with any other source.

Figure for seeds retained for sowing purpose is assumed as 0.07 lakh tonnes based on market feedback for FY 2020-21. The same is not available for FY 2021-22.

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

As per market feedback, whitish sesame seed production is around 75% of total Sesame seed production. However, for calculation of Total Supply, Beginning Stock and Ending Stocks, Production of Sesame seed, irrespective of its variety, has been considered.

(Lakh Tonnes)

Rank	Top 10 Major Producing Countries			Top 10 Major Consuming countries		
	Country	Previous FY (2020-21)*	Current FY (2021-22)* (P)	Country	Previous FY (2019-20)*	Current FY (2020-21)* (P)
1	Sudan	15.25	11.19	NA		
2	Myanmar	6.58	6.42			
3	United Republic of Tanzania	7.10	7.00			
4	India	6.58	8.17			
5	Nigeria	4.40	4.40			
6	China	4.59	4.57			
7	Burkina Faso	3.85	2.70			
8	Ethiopia	2.60	1.90			
9	Chad	2.02	1.97			
10	South Sudan	1.84	1.82			
	Others	13.53	13.40			
	Grand Total	68.33	63.54			

Source: FAO (Jan 2023); NA: Data is not available in the public domain; P: Provisional;
Latest data for FY 2022-23 is not available.
*Data is not available as per financial year. It is provided as per Calendar Year (CY) (Jan-Dec);

(Lakh Tonnes)

Rank	Top 10 Major Exporting countries			Top 10 major Importing countries		
	Country	Previous FY (2020-21)*	Current FY (2021-22)* (P)	Country	Previous FY (2020-21)*	Current FY (2021-22)* (P)
1	Sudan	4.94	2.89	China	10.60	12.18
2	India	2.76	2.60	Turkey	2.23	2.03
3	Nigeria	2.72	1.38	Japan	2.05	1.51
4	Ethiopia	2.48	1.86	India	1.49	0.25
5	United Republic of Tanzania	1.61	1.33	Republic of Korea	0.78	0.87
6	Myanmar	1.39	1.72	Israel	0.69	0.67
7	Mozambique	0.54	0.90	Saudi Arabia	0.50	0.48
8	Brazil	0.72	0.65	United Arab Emirates	0.36	0.37
9	Burkina Faso	0.61	0.61	Iran (Islamic Republic of)	0.40	0.61
10	Mali	0.58	0.47	Jordan	0.38	0.33
	Others	5.18	6.72	Others	5.70	5.36
	World Total	23.54	21.14	World Total	25.19	24.65

Source: FAO (Jan 2023); NA: Data is not available in the public domain; P: Provisional;
Latest data for FY 2022-23, is not available.
*Data is not available as per financial year. It is provided as per Calendar Year (CY) (Jan-Dec);

Top 10 Major producing states in India

The major Sesame seed producing states include West Bengal, Madhya Pradesh, Gujarat, Rajasthan, Uttar Pradesh and Tamil Nadu. The state wise production is given below.

(Lakh Tonnes)

States / UT	Previous FY (2019-20)	Current FY (2020-21)*
Madhya Pradesh	1.26	1.95
West Bengal	1.35	1.93
Rajasthan	0.92	1.26
Uttar Pradesh	0.66	0.98
Gujarat	1.08	0.82
Tamil Nadu	0.36	0.34
Karnataka	0.25	0.20
Telangana	0.13	0.15
Andhra Pradesh	0.13	0.09
Assam	0.09	0.08
Others	0.35	0.36
All India	6.57	8.17

Source: Ministry of Agriculture
*: State-wise Production data after Year 2020-21 is not available in the public domain.
Please refer to Table entitled “Reference Years for Commodities” to know type of years corresponding to financial year.

c. Major changes in the polices governing trade in the spot markets of the commodity (FY 2022-23)

No major policy change related to sesame seed was noted during FY 2022-23

d. Geo-political issues in the commodity and its impact on Indian scenario (FY 2022-23)

Date	Event	Key Details	Key Implications/Impact
-	No major geo-political issue was noted related to sesame seed during FY 2022-23	NA	NA

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

2. Trading related parameter

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

No trading volume during FY 2022-23

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

Symbol	Traded Volume (MT)	Deliverable Supply(MT)	Proportion
SESAMESEED	-	772,676	-

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

Symbol	Traded volume (MT)	Production(MT)	Proportion
SESAMESEED	-	749,000	-

d. Annual average Open interest as proportion of total production

Symbol	Average Open Interest (MT)	Production(MT)	Proportion
SESAMESEED	-	749,000	-

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

Symbol	Average Open Interest (MT)	Deliverable supply(MT)	Proportion
SESAMESEED	-	772,676	-

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

No trading volume during FY 2022-23

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

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

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

Expiry Month	Year	Symbol	Total Delivery Value (in Cr)
April	2022	SESAMESEED	-
May	2022	SESAMESEED	-
June	2022	SESAMESEED	-
July	2022	SESAMESEED	-
August	2022	SESAMESEED	-
September	2022	SESAMESEED	-
October	2022	SESAMESEED	-
November	2022	SESAMESEED	-
December	2022	SESAMESEED	-
January	2023	SESAMESEED	-
February	2023	SESAMESEED	-
March	2023	SESAMESEED	-

Annual value of delivery (in Crores) (April'22 to March'23)	-

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

Month	Year	Symbol	Average Open Interest (MT)
Apr	2022	SESAMESEED	-
May	2022	SESAMESEED	-
June	2022	SESAMESEED	-
July	2022	SESAMESEED	-
August	2022	SESAMESEED	-
September	2022	SESAMESEED	-
October	2022	SESAMESEED	-
November	2022	SESAMESEED	-
December	2022	SESAMESEED	-
January	2023	SESAMESEED	-
February	2023	SESAMESEED	-
March	2023	SESAMESEED	-
Annual Average OI (MT) (April'22 to March'23)			-

j. Annual average volume to open interest ratio

0.00%

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

Symbol	Member Count	Client Count
SESAMESEED	-	-

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	N/A
Maximum Daily Value	N/A

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

Commodity	Count
SESAMESEED	0

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

n. Algorithmic trading as percentage of total trading

Commodity	%
SESAMESEED	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).

NA

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			
	Futures	*Spot*	*Mandi*
Futures	1		
Spot	0.656105	1	
Mandi	-0.00432	0.117341	1

Standard Deviation			
	Futures	*Spot*	*Mandi*
Futures	1	1.083959	4.62752
Spot	0.922544	1	4.269092
Mandi	0.216098	0.234242	1

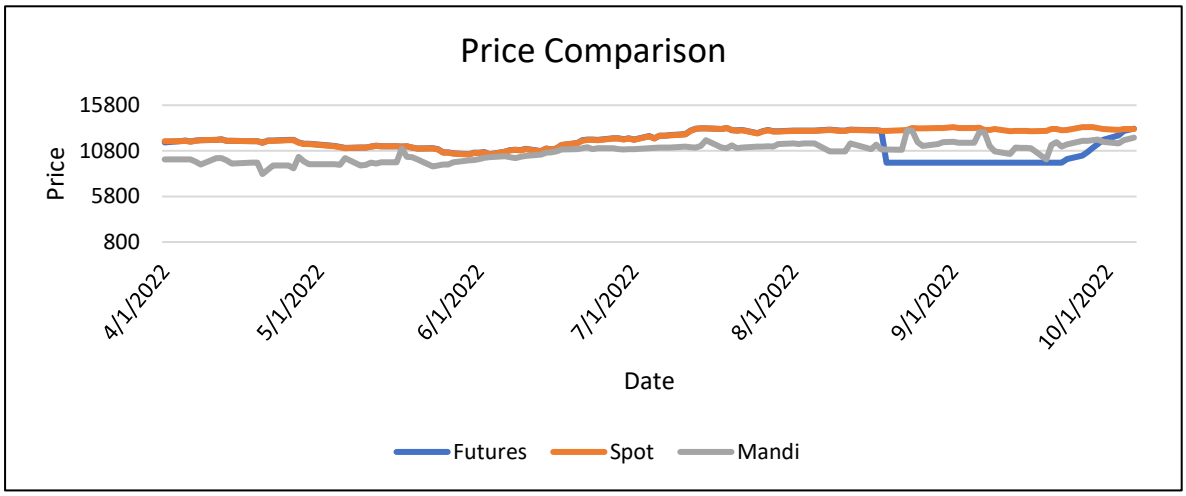
d. Correlation between international futures & international spot prices along with ratio of standard deviation (wherever relevant comparable are available).

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.

Correlation			
	Futures	*Spot*	*Mandi*
Futures	1		
Spot	0.656105	1	
Mandi	-0.00432	0.117341	1

Standard Deviation			
	Futures	*Spot*	*Mandi*
Futures	1	1.083959	4.62752
Spot	0.922544	1	4.269092
Mandi	0.216098	0.234242	1



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

f. Maximum & Minimum value of daily futures price volatility and spot price volatility along withdisclosure 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	Dec	0.025
Min	Aug	0.004

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

Volatility	Month	Value
Max	Nov	0.041
Min	Aug	0.005

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	0
Backwardation	33

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. (Volatility calculated by Square root of Standard Deviation of daily returns for the period from 1 April 2022 to 31 March 2023)

	SESAMESEED
Basis Volatility	9.114
Hedge efficiency	0.477

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
Gujarat	Unjha	Unjha (Basis)
	Rajkot	Rajkot (ADC)
	Amreli	NA
	Halvad	NA
	Junagadh	NA
Rajasthan	Dausa	NA
	Swai Madhopur	NA
	Churu	NA
	Bikaner	NA
Uttar Pradesh	Hamirpur	NA
	Mahoba	NA

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

NA

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

NA

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	Kolkata	35
2	Awareness Programme	Surat	18
3	Awareness Programme	Guna, Madhya Pradesh	30

4	Awareness Programme	Anjar, Lutch, Gujarat	38
5	Awareness Programme	Raipur, Chhattisgarh	112
6	Awareness Programme	Patan, Gujarat	104
7	Awareness Programme	Nashik	200
8	Awareness Programme	Udaipur	150
9	Awareness Programme	Rajkot	100
10	Awareness Programme	Hissar	100
11	Awareness Programme	Nagpur, Maharashtra	120
12	Awareness Programme	Raipur	100
13	Awareness Programme	Gwalior, Madhya Pradesh	78
14	Awareness Programme	Bhopal , MP	54
15	Awareness Programme	Indore, Madhya Pradesh	47
16	Awareness Programme	Siliguri, West Bengal	39
17	Awareness Programme	Alipurduar, West Bengal	31
18	Awareness Programme	Meerut, Uttar Pradesh	30
19	Awareness Programme	Bhopal, Madhya Pradesh	44
20	Awareness Programme	Indore, Madhya Pradesh	80
21	Awareness Programme	Chennai, Tamil Nadu	24
22	Awareness Programme	Kanpur, Uttar Pradesh	60
23	Awareness Programme	Chindwara, MP	50
24	Awareness Programme	Seoni , MP	40
25	Awareness Programme	Kolkata	25
26	Awareness Programme	Raipur, Chattisgarh	136
27	Awareness Programme	Lucknow	177
28	Awareness Programme	Rourkela	65
29	Awareness Programme	Muzaffarnagar	70
30	Awareness Programme	Kochi	86
31	Awareness Programme	Bhilai	70
32	Awareness Programme	Thalamadla	80
33	Awareness Programme	Kolkata	45
34	Awareness Programme	Online	30
35	Awareness Programme	Online	18
36	Awareness Programme	Online	23
37	Awareness Programme	Odisha	9
38	Awareness Programme	Odisha	15
39	Awareness Programme	Karnataka	5
40	Awareness Programme	Bihar	18
41	Awareness Programme	West Bengal	6
42	Awareness Programme	Andhra Pradesh	29
43	Awareness Programme	Online	11
44	Awareness Programme	Online	7
45	Awareness Programme	Online	21
46	Awareness Programme	Online	6
47	Awareness Programme	Online	9
48	Awareness Programme	Online	14
49	Awareness Programme	Online	82
50	Awareness Programme	Online	28
51	Awareness Programme	Online	25
52	Awareness Programme	Online	50
53	Awareness Programme	Online	30
54	Awareness Programme	Online	25
55	Awareness Programme	Online	5
56	Awareness Programme	Online	10
57	Awareness Programme	Online	7

58	Awareness Programme	Online	13
59	Awareness Programme	Online	16
60	Awareness Programme	Online	23
61	Awareness Programme	Online	53
62	Awareness Programme	Online	17
63	Awareness Programme	Online	30
64	Awareness Programme	Online	15
65	Awareness Programme	Online	25
66	Awareness Programme	Online	35
67	Awareness Programme	Online	10
68	Awareness Programme	Online	30
69	Awareness Programme	Online	12
70	Awareness Programme	Online	6
71	Awareness Programme	Online	7
72	Awareness Programme	Online	20
73	Awareness Programme	Online	50
74	Awareness Programme	Online	30
75	Awareness Programme	Online	13
76	Awareness Programme	Online	10
77	Awareness Programme	Online	6
78	Awareness Programme	Online	6
79	Awareness Programme	Online	8
80	Awareness Programme	Online	13
81	Awareness Programme	Online	6
82	Awareness Programme	Online	25
83	Awareness Programme	Online	8
84	Awareness Programme	Online	14
85	Awareness Programme	Online	11
86	Awareness Programme	Online	10
87	Awareness Programme	Online	6
88	Awareness Programme	Online	9
89	Awareness Programme	Online	14
90	Awareness Programme	Online	16
91	Awareness Programme	Online	11
92	Awareness Programme	Online	8
93	Awareness Programme	Online	8
94	Awareness Programme	Online	13
95	Awareness Programme	Online	15
96	Awareness Programme	Online	25
97	Awareness Programme	Online	25
98	Awareness Programme	Online	26
99	Awareness Programme	Online	18
100	Awareness Programme	Online	52
101	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.

- One to one meeting with the market participants create awareness about the new developments /new initiatives at exchange level.

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 pricesreturns 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.