

# Parameters for Performance Review of Commodity

## CHANA

### 1. Background

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

Chickpea or Chana is a very important pulse crop that grows as a seed of a plant named *Cicer arietinum* in the Leguminosae family. It contains 25% proteins, which is the maximum provided by any pulse and 60% carbohydrates. It places third in the importance list of the food legumes that are cultivated throughout the world. Chana is used as an edible seed and is also used for making flour throughout the globe. There are mainly two types of chickpea produced i.e. Desi and Kabuli. Chana is usually suited to those areas having relatively cooler climatic conditions and a low level of rainfall. It yields best when grown on sandy, loam soils having an appropriate drainage system as this crop is very sensitive to the excess water availability and a lack of such system can hamper the yield levels. Chickpea is seeded in the months of October to November (Rabi Season) in India. The maturity period of desi type chickpea is 95-105 days and of kabuli type chickpea is 100-110 days. Harvesting of the plant is done when its leaves start drying and shedding and can be done directly or with the help of a harvester. In India, it is harvested in February, March and April.



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

Life Cycle: Value Chain of the Commodity	Major Varieties /Grade														
<pre>graph TD; Farmer[Farmer] --&gt; Agents[Agents/Stockist (Mandi)]; Agents --&gt; DalMiller[Dal Miller]; Agents --&gt; WholesellerChana[Wholeseller (Chana)]; DalMiller --&gt; WholesellerDal[Wholeseller (Dal)]; WholesellerDal --&gt; Retailer[Retailer]; WholesellerDal --&gt; Consumer[Consumer]; WholesellerChana --&gt; Consumer;</pre>	<p>Major Varieties</p> <p>RSG 888, CSJD 884, RSG 974, JSC 40, JSC 42, Kripa, PKV Harita</p> <p>NCDEX: Important Quality Parameters</p> <p>Desi Unprocessed Whole Raw Chana (Not for direct human consumption) shall be sound, clean and shall be free from Mathara and live infestation</p> <table><tr><td>Foreign matter (other than varietal admixture) Chana with foreign matter not more than 1% by weight of which not more than 0.25% by weight shall be mineral matter and not more than 0.10% by weight shall be impurities of animal origin.</td><td>1% max</td></tr><tr><td>Green (Cotyledon color), Immature, Shrunken, Shriveled Seeds</td><td>4% max</td></tr><tr><td>Khesari</td><td>0.1% max</td></tr><tr><td>Broken, Splits</td><td>3% max</td></tr><tr><td>Damaged</td><td>4% max</td></tr><tr><td>Weevilled</td><td>1% max</td></tr><tr><td>White egg spot</td><td>1% max</td></tr></table>	Foreign matter (other than varietal admixture) Chana with foreign matter not more than 1% by weight of which not more than 0.25% by weight shall be mineral matter and not more than 0.10% by weight shall be impurities of animal origin.	1% max	Green (Cotyledon color), Immature, Shrunken, Shriveled Seeds	4% max	Khesari	0.1% max	Broken, Splits	3% max	Damaged	4% max	Weevilled	1% max	White egg spot	1% max
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	Moisture	11% max
	Varietal admixture	4% max

**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 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
<b>Reference Year</b>			
<b>Financial Year 2021-22 (Apr-Mar)</b>			
<b>Corresponding Years</b>			
Production Year (PY)	2021-22 (July-Sept)	2020-21(July-June)	2020-21(July-June)
Marketing Year (MY)	2021-22 (Oct-Sept)	2021-22 (Jan/Feb-Dec/Jan)	2021-22 (Mar/Apr - Feb/Mar)
Calendar Year (CY)	2021 (Jan-Dec)	2021 (Jan-Dec)	2021 (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 2021-22 = PY 2021-22 = MY 2021-22 = CY 2021	FY 2021-22 = PY 2020-21 = MY 2021-22 = CY 2021	FY 2021-22 = PY 2020-21 = MY 2021-22 = CY 2021

**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 (2019-20)*	Current FY (2020-21)*
Opening Stocks	NA	NA
Production	141.84	150.84
Imports	21.08	18.93
Total Supply	NA	NA
Exports	21.79	20.46
Domestic Consumption	NA	NA
Ending Stocks	NA	NA

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

\*Latest data for FY 2021-22 is not available.

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

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

(In Lakh Tonnes)

Indian Scenario	Previous FY (2020-21)	Current FY (2021-22)
Opening Stocks	NA	NA
Production	110.80	119.11
Imports	2.95	1.99
Total Supply	NA	NA
Exports	1.59	0.94
Domestic Consumption	NA	NA
Ending Stocks	NA	NA

Source: Production: Ministry of Agriculture and Import/Export: Ministry of Commerce (Hs code 071320) For Current FY (2021-22), import/export data is for the period Apr 2021 to Feb 2022.

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 (2019-20)*	Current FY (2020-21)*	Country	Previous FY (2019-20)	Current FY (2020-21)
1	India	99.38	110.80	NA	NA	NA
2	Turkey	6.30	6.30			
3	Pakistan	4.47	4.98			
4	Myanmar	4.99	4.82			
5	Ethiopia	4.35	4.57			
6	Russia	5.06	2.91			
7	Australia	2.05	2.81			
8	Iran	1.95	2.27			
9	Canada	2.52	2.14			
10	USA	2.83	1.94			
	Others	7.94	7.30			
	World Total	141.84	150.84			

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

Latest data for current FY 2021-22 is not available in the public domain.

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

Countries are arranged in descending order based on the data in FY (2020-21).

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 Exporting Countries			Top 10 Major Importing Countries		
	Country	Previous FY (2019-20)*	Current FY (2020-21)*	Country	Previous FY (2019-20)*	Current FY (2020-21)*
1	Australia	4.06	4.24	India	3.72	3.06
2	Russia	4.70	3.10	Pakistan	3.77	2.13
3	Turkey	2.13	2.41	Bangladesh	2.41	1.98
4	India	1.23	1.74	Turkey	1.15	1.23
5	USA	1.55	1.57	UAE	1.05	0.94
6	Argentina	1.04	1.29	Iraq	0.77	0.65
7	Tanzania	1.12	1.18	Algeria	0.75	0.65
8	Canada	1.30	1.12	UK and Northern Ireland	0.55	0.65
9	Mexico	1.33	1.02	USA	0.43	0.60
10	UAE	0.62	0.55	Saudi Arabia	0.61	0.57
	Others	2.71	2.24	Others	5.87	6.49
	World Total	21.79	20.46	World Total	21.08	18.93

Source: FAO (May 2022); \*Latest data for current FY 2021-22 is not available in the public domain.

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

Countries are arranged in descending order based on the data in FY (2020-21).

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

(In Lakh Tonnes)

Top 10 Major producing states in India			
Rank	States	Previous FY (2020-21)	Current FY (2021-22)
1	Madhya Pradesh	27.29	32.14
2	Maharashtra	22.39	23.96
3	Rajasthan	26.58	22.65
4	Gujarat	6.35	12.80
5	Uttar Pradesh	8.51	7.59
6	Andhra Pradesh	5.59	5.33
7	Karnataka	6.76	4.46
8	Jharkhand	2.75	3.34
9	Chhattisgarh	0.88	2.68
10	Telangana	1.99	2.38
	Others	1.68	1.78
	India Total	110.78	119.11

Source: Ministry of Agriculture;

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 (FY 2021-22)

Date	Major Policies governing trade and related changes
09-Jun-21	For Kharif Marketing Year 2021-22 - Hike in MSP of Moong (1.1% to 7275/Qtl.) y-o-y; Tur (5% to 6300/Qtl.) y-o-y; Urad (5% to 6300/Qtl.) y-o-y

24-Jun-21	The Govt. has fixed an annual quota for imports of Urad and Tur from Myanmar as well as that of Tur from Malawi for 5 financial years starting from FY 2021-22
28-Jun-21	NAFED issued a notification on June 27, 2021 for commencing of the sale of pulses in Madhya Pradesh from Jul 1, 2021
02-Jul-21	The central govt. imposed stock limits on pulses except for wholesalers, retailers, millers and importers till October 31.
19-Jul-21	As an amendment to the notification dated July 02, 2021, the central govt. exempted importers of pulses from stock limits, and also relaxed the norms for millers and wholesalers
26-Jul-21	The central govt. reduced BCD on import of Masoor from countries other than the US by 10% and halved the AIDC on Masoor imports to 10%
16-Aug-21	SEBI directive w.r.t. Chana trading on the Exchange applicable w.e.f. Aug 17, 2021 - (a) no new chana contract should be launched till further notice (b) in respect of the running contracts, no new position will be allowed to be taken. Only squaring up of the position will be allowed.
08-Sep-21	Govt. announced MSP for Rabi crops for marketing season 2022-23. Hike of 2.5% y-o-y to Rs 5230/Qtl. for Chana and 7.8% y-o-y to Rs 5500/Qtl. for Masur
13-Sep-21	The Govt. extended import window for Tur and Urad
20-Nov-21	Farm laws repealed: Govt. announced repealing of three farm laws after a year of protests.
30-Nov-21	Farm Law Repeal Act 2021 received the assent of the President of India. This is an Act to repeal the Farmers (Empowerment and Protection) Agreement on Price Assurance and Farm Services Act, 2020, the Farmers' Produce Trade and Commerce (Promotion and Facilitation) Act, 2020, the Essential Commodities (Amendment) Act, 2020 and to amend the Essential Commodities Act, 1955.
19-Dec-21	Finance Ministry recommends Suspension of Futures Trading in 7 Agri Commodities – Issues directions to SEBI
20-Dec-21	SEBI in its press release (PR No 36/2021) directs suspension of futures and options trading for one year in a host of agricultural commodities including Paddy (non-basmati), Wheat, Chana, RM seed and its derivatives, CPO, Moong, Soybean and its derivatives.
20-Dec-21	Extension in Free Import Policy of Tur, Urad and Moong till March 31, 2022
11-Feb-22	Import Policy for Moong is revised from "Free" to "Restricted" with immediate effect as per notification issued dated 11 Feb 2022
28-Feb-22	DGFT has decided to relax the foreign trade policy (FTP) provision to allow importers to ship in moong for fiscal 2021-22, subject to some conditions. The quantity eligible for import would be proportionate to the amount paid prior to February 11, 2022, as advance. If the advance payment had been made in full for the entire contracted quantity, then the eligibility would be for the entire contracted quantity. "If there is a partial payment, quantity admissible for import shall be limited to the quantity in proportion to the advance payments made," DGFT said in a trade notice issued on Feb 28, 2022. DGFT said the import contracts should have been entered into prior to February 11 with payments made. Details of such contracts have to be registered before March 15 at the jurisdictional regional offices of additional DGFT in Delhi, Mumbai, Kolkata, Chennai, Bengaluru, Hyderabad, Ahmedabad and Ludhiana.
29-Mar-22	Govt. has extended the "Free Import Policy" for Tur and Urad till 31 Mar 2023

**d. Geo political issues in the commodity and its impact on Indian scenario (FY 2021-22)**

Month	Date	Event	Key Details	Key Implications/Impact
Feb-2022	24-Feb-22	Russia's Invasion on Ukraine	Russian President Vladimir Putin on Feb 24, 2022 informed that he has launched a military operation in Ukraine.	Russia's invasion on Ukraine has raised supply concern for some of agri commodities apart from Crude oil. Further. it is feared that it may lead to a food crisis on the global scale. Russia is one of the major import source of Chana for India. For FY 2019-20 and FY 2020-21, Russia accounted for 27% and 23%, respectively, of

				the total Chana imported in India.
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## 2. Trading related parameter

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

Monthly Traded Value	
Month	Traded volume (MT)
Apr-21	17,58,180
May-21	12,31,190
Jun-21	11,80,210
Jul-21	13,05,170
Aug-21	6,99,900
Sep-21	55,520
Oct-21	9,010
Nov-21	-
Dec-21	-
Jan-22	-
Feb-22	-
Mar-22	-
<b>Yearly Traded Volume</b>	<b>62,39,180</b>

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

Symbol	Traded Volume (MT)	Deliverable Supply( MT)	Proportion
CHANA	62,39,180	1,21,08,624	51.53%

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

Symbol	Traded volume (MT)	Production( MT)	Proportion
CHANA	62,39,180	1,19,10,000	52.38%

### d. Annual average Open interest as proportion of total production

Symbol	Average Open Interest (MT)	Production( MT)	Proportion
CHANA	1,23,206	1,19,10,000	1.03%

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

Symbol	Average Open Interest (MT)	Deliverable supply( MT)	Proportion
CHANA	1,23,206	1,21,08,624	1.02%

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

Monthly Traded Value	
Month	Traded Value(in Cr.)
Apr-21	9,615
May-21	6,573

<b>Monthly Traded Value</b>	
Month	Traded Value(in Cr.)
Jun-21	6,081
Jul-21	6,463
Aug-21	3,532
Sep-21	285
Oct-21	45
Nov-21	-
Dec-21	-
Jan-22	-
Feb-22	-
Mar-22	-
<b>Yearly Value of Trade</b>	<b>32,595</b>

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

<b>Monthly Traded Value</b>	
Month	Traded Value(in MT)
Apr-21	14,540
May-21	8,260
Jun-21	11,650
Jul-21	22,980
Aug-21	14,800
Sep-21	9,620
Oct-21	1,690
Nov-21	-
Dec-21	-
Jan-22	-
Feb-22	-
Mar-22	-
<b>Yearly Value of Trade</b>	<b>83,540</b>

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

<b>Monthly Delivery Value</b>	
Month	Value in Rs Cr
Apr-21	81.19
May-21	44.45
Jun-21	58.76
Jul-21	107.91
Aug-21	72.63
Sep-21	51.09
Oct-21	8.53
Nov-21	0
Dec-21	0
Jan-22	0
Feb-22	0
Mar-22	0
<b>Yearly Delivery Quantity</b>	<b>424.56</b>

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

Monthly Traded Value	
Month	OI ( in MT)
Apr-21	1,62,804
May-21	1,70,810
Jun-21	1,68,724
Jul-21	1,58,315
Aug-21	1,24,590
Sep-21	33,158
Oct-21	5,034
Nov-21	-
Dec-21	-
Jan-22	-
Feb-22	-
Mar-22	-
<b>Yearly Average OI</b>	<b>1,23,206</b>

**j. Annual average volume to open interest ratio**

Symbol	Average of traded volume(MT)	Average of Open Interest (MT)	Traded to Open interest
CHANA	42,801	1,23,206	34.74%

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

Symbol	Member Count	Client Count
CHANA	152	4,084

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

	VCPs/ Hedger
Annual Average	13.1%
Maximum Daily value*	15.3%

\*It is calculated on the day when commodity has highest open interest during the year.

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

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

Commodity	Count
CHANA	68

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

**n. Algorithmic trading as percentage of total trading**

Commodity	%
CHANA	13.8%

**o. Delivery defaults**

Number of instances	0
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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.**

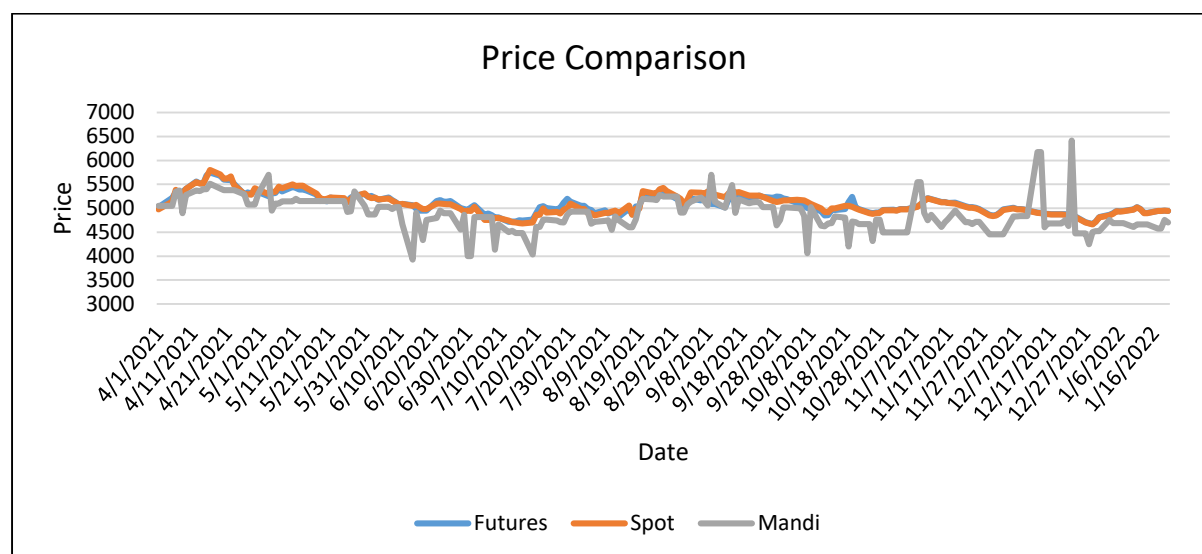
Correlation			
	Futures	Spot	Mandi
Futures	1	NA	N
Spot	0.840194	1	NA
Mandi	0.083356	0.121002	1

Standard Deviation			
	Futures	Spot	Mandi
Futures	1	1.081653	9.808133
Spot	0.924511	1	9.067724
Mandi	0.101956	0.110281	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.**



**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 Standard Deviation of daily returns for the period from 1 April 2021 to 31 March 2022)**

Value of daily futures price volatility (April 2021- March 2022)

Volatility	Month	Value
Max	Aug	0.019534
Min	Jan	0.007505

Value of daily Spot price volatility (April 2021- March 2022)

Volatility	Month	Value
Max	Aug	0.022651
Min	Jan	0.007527

**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**

No single instance futures contract was in contango by more than 4% for the near month contract in the period for April 2021- March 2022. Also no single instances where the futures contract was in backwardation by more than 4% for the near month contract in the period under preview.

**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 Standard Deviation of daily returns for the period from 1 April 2021 to 31 March 2022)

<b>Basis Volatility</b>	5.3277
<b>Hedge Efficiency</b>	

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 Trading Centers	Availability of exchange delivery centers
Madhya Pradesh	Vidisha	Indore as ADC
	Raisen	
	Ujjain	
	Guna	
	Sagar	
	Ashoknagar	
	Katni	
	Hoshangabad	
	Damoh	
	Narsinghpur	
	Dewas	
	Harda	
	Jabalpur	
	Indore	

State	Major Trading Centers	Availability of exchange delivery centers
Maharashtra	Latur	Akola as ADC
	Amarawati	
	Nagpur	
	Buldhana	
	Vashim	
	Wardha	
	Akola	
	Yavatmal	
	Nanded	
	Sholapur	
	Jalgaon	

State	Major Trading Centers	Availability of exchange delivery centers
Rajasthan	Tonk	
	Bikaner	Basis Centre
	Ganganagar	N.A.

	Ajmer	
	Baran	
	Pali	
	Hanumangarh	
	Dausa	
	Jaipur	ADC
	Jodhpur	
	Nagaur	
	Kota	

**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)**

Month	MADHYA PRADESH (Avg Qty (MT))	MAHARASHTRA (Avg Qty (MT))	RAJASTHAN (Avg Qty(MT))
Apr-21	12,287	68,232	23,816
May-21	11,492	80,504	23,585
Jun-21	11,803	80,368	21,192
Jul-21	12,479	71,917	21,125
Aug-21	10,195	65,471	23,905
Sep-21	2,687	26,776	10,976
Oct-21	214	3005	10,976
Nov-21	0	0	0
Dec-21	0	0	0
Jan-22	0	0	0
Feb-22	0	0	0
Mar-22	0	0	0

**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 FY 2021-22

Sr. Number	Programme	Location	Number of Participants
1	Awareness Programme	Webex	17
2	Awareness Programme	Webex	17
3	Awareness Programme	Webex	17
4	Awareness Programme	Webex	11
5	Awareness Programme	Webex	8

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

- Creating an awareness about the Hedge policy to bona fide hedger
- Awareness Programme in Major trading centres as well as remote location
- Attend the National as well as international conferences, Trade meets, seminars etc.
- One to one meeting with market participants and hedgers

## **Annexure 1**

### **Hedging Efficiency Methodology**

Regression analysis is carried out between near month futures returns and NCDEX polled spot prices returns of the FY2021-22

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.