

# SEASONAL COMMODITY INSIGHT

01<sup>st</sup> February 2018

## Castor Seed

### Introduction

Castor *Ricinus communis* is cultivated around the world because of the commercial importance of its oil. The castor plant appears to have originated in eastern Africa, especially around Ethiopia. It is now grown throughout the warm-temperate and tropical regions and flourishes under a variety of climatic conditions. The Indian variety of castor has 48 per cent oil content of which 42 per cent can be extracted, while the cake retains the rest. Castor is a versatile, renewable resource having vast and varied applications such as lubricating grease, surfactants, surface coatings, telecom, engineering plastics, pharma, rubber chemicals, nylons, soaps, hydraulic brake fluids, paints and polymers and perfumery products. Castor meal has uses in agriculture as organic manure. The chemical structure of castor oil is of great interest because of the wide range of reactions it affords to the oleo-chemicals industry and the unique chemicals that can be derived from it. These derivatives are on par with petrochemical products for use in several industrial applications. In fact, they are considerably superior since they are from renewable sources, bio-degradable and eco-friendly. Castor oil and its derivatives find uses in agriculture, cosmetics, electronics & tele-communications, food, lubricants, paints, inks and adhesives, paper, perfumeries, pharmaceuticals, plastics and rubber and textile chemicals.



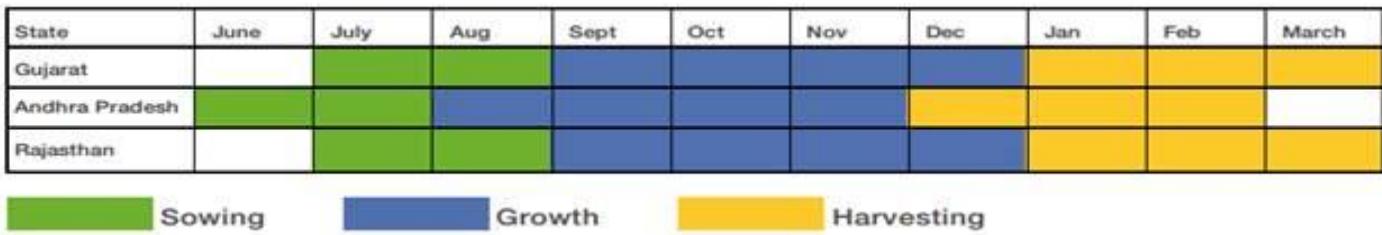
### Processing of Castor Seed

Castor seed harvested from field is dried till the pods open. Seeds are hulled by using de-hullers or by hand to remove the seed from the pod. Seed contains about 50 per cent of oil by weight. Extraction of oil from castor seed is done in a manner similar to that for most other oil seeds. The ripe seeds are allowed to dry, when they split open and discharge the seeds. These seeds are cleaned, cooked and dried prior to extraction. Cooking is done to coagulate protein (necessary to permit efficient extraction) and to free the oil for efficient pressing. The first stage of oil extraction is pre-pressing, using a high pressure continuous screw press – called the expeller. Extracted oil is filtered, and the material removed from the oil is fed back into the stream along with fresh material. Material finally discharged from the press, called cake, contains 8 to 10 per cent oil. It is crushed into a coarse meal, and subjected to solvent extraction with hexane or heptane.

### Crop Characteristics & Cropping Season

Castor is a perennial crop but is grown as an annual crop for economic purpose. It is cultivated in the arid and semi-arid regions in the world. It thrives in wide range of soils and requires well distributed rainfall of 500-600 mm throughout the crop period. The crop duration is 7-8 months. In India, it is sown in July-August and harvesting commences around January-March. The seeds are then dried, de-podded, bagged and brought to the market yard for trading. The arrivals in the market start from January onwards.

## Cropping Season



## Domestic Scenario

Castor has an importance in internal combustion engines, castor oil is renowned for its ability to lubricate under extreme conditions and temperatures, such as in air-cooled engines. The lubricants company Castrol takes its name from castor oil. Castor seed meal is offered in bulk & in plastic bags.

India's castor production fluctuates at 10 to 15 lakh MT a year. Castor is sown in July-August and harvested in December-March every year. From the total Castor seed production in India, Gujarat accounts for over 73.02 per cent of the total production, followed by Rajasthan (15.60 per cent), Andhra Pradesh (5.18 per cent), Telangana (3.85 per cent) and Odisha (0.66 per cent).

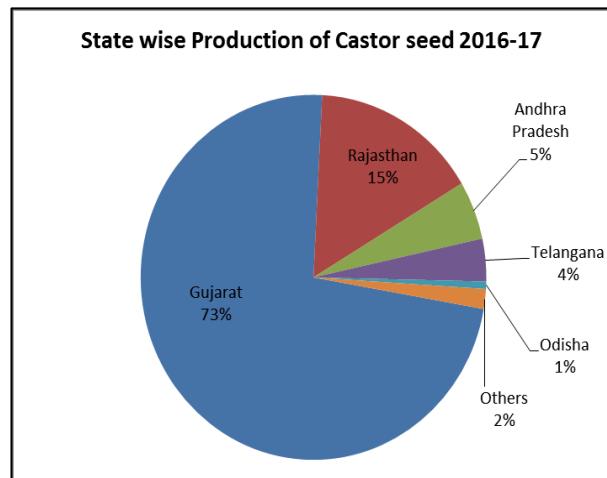
## State wise Production of castor Seed in India

(‘000 MT)

| States                | 2010-11       | 2011-12       | 2012-13       | 2013-14       | 2014-15       | 2015-16       | 2016-17       | 2017-18*       |
|-----------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| <b>Gujarat</b>        | 986.0         | 1803.0        | 1493.0        | 1287.9        | 1456.0        | 1413.0        | 1037.61       | 1080.39        |
| <b>Rajasthan</b>      | 210.7         | 410.1         | 341.1         | 286.1         | 335.1         | 269.9         | 221.70        | 228.62         |
| <b>Andhra Pradesh</b> | 70.0          | 16.7          | 52.5          | 38.6          | 27.0          | 29.0          | 73.66         | 35.86          |
| <b>Telangana</b>      | 51.0          | 35.3          | 52.5          | 85.6          | 30.0          | 17.0          | 53.67         | 27.84          |
| <b>Odisha</b>         | 8.9           | 8.2           | 8.1           | 8.1           | 7.0           | 6.6           | 9.39          | 6.35           |
| <b>Others</b>         | 23.7          | 21.7          | 16.3          | 20.3          | 14.9          | 16.4          | 24.97         | 15.55          |
| <b>All India</b>      | <b>1350.3</b> | <b>2294.9</b> | <b>1963.5</b> | <b>1726.6</b> | <b>1870.0</b> | <b>1751.8</b> | <b>1421.0</b> | <b>1394.61</b> |

Source: Directorate of Economics and Statistics, Department of Agriculture and Cooperation & Solvent Extractors' Association of India

From the above table, it can be concluded that the production of Castor seed in major states has been increasing gradually in two major producing states namely Gujarat, and Rajasthan, while in the other states it has been on the gradual decline. In the last six years the national production has seen increasing but a decline was seen in 2016-17 due to shifting to Groundnut and Cotton crops which were more remunerative last year and it is expected that the downturn will continue in 2017-18. Globally India is the top amongst the producer of castor seed, the main reason behind this significant jump is the persistence demand of castor meal from the Middle East, and Europe.



### International Scenario

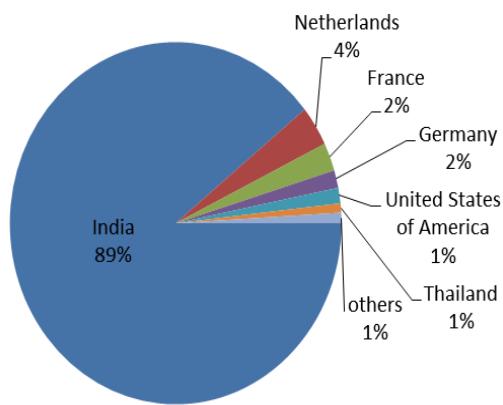
India is largest producer of castor seed in the world and it alone constitutes about 85.50 per cent of the total global production. According to 2015-16 statistics other major producers are Mozambique (4.26 per cent), China (2.20 per cent) and Brazil (1.35 per cent). However, in the global castor seed market, India plays key role as largest supplier of castor seed oil and cake. Global supplies are influenced by Indian production.

| Global production of Castor Oilseed (Lakh MT) |              |              |              |              |              |              |
|---|--------------|--------------|--------------|--------------|--------------|--------------|
| Country                                       | 2010-11      | 2011-12      | 2012-13      | 2013-14      | 2014-15      | 2015-16      |
| India   | 22.95        | 19.64        | 17.27        | 18.70        | 17.52        | 15.54        |
| Mozambique                                    | 0.67         | 0.68         | 0.68         | 0.69         | 0.75         | 0.77         |
| China, mainland                               | 1.80         | 1.10         | 0.50         | 0.40         | 0.40         | 0.40         |
| China   | 1.80         | 1.10         | 0.50         | 0.40         | 0.40         | 0.40         |
| Brazil  | 1.20         | 0.26         | 0.13         | 0.38         | 0.47         | 0.25         |
| Myanmar                                       | 0.13         | 0.13         | 0.12         | 0.11         | 0.12         | 0.12         |
| Ethiopia                                      | 0.08         | 0.11         | 0.13         | 0.11         | 0.11         | 0.10         |
| Mexico  | 0.00         | 0.00         | 0.00         | 0.00         | 0.02         | 0.09         |
| Paraguay                                      | 0.06         | 0.10         | 0.11         | 0.09         | 0.08         | 0.09         |
| Viet Nam                                      | 0.06         | 0.06         | 0.06         | 0.07         | 0.07         | 0.07         |
| Others  | 0.47         | 0.38         | 0.36         | 0.34         | 0.33         | 0.35         |
| World   | <b>29.22</b> | <b>23.56</b> | <b>19.85</b> | <b>21.28</b> | <b>20.28</b> | <b>18.18</b> |

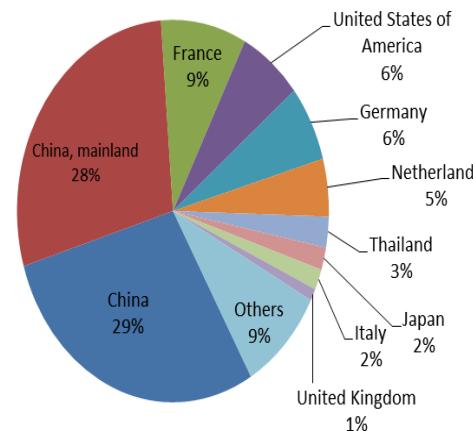
Source: FAO Statistic

The top six importing nations accounts for 83.80 per cent of the total global imports of which a whopping 29 per cent is done only by China followed by China, mainland of (28 per cent). The next most important destination is France contributing to 9 per cent of the total imports. The other countries worth mentioning are USA, Germany, Netherland and Thailand. Thus, going by the share of the quantum of the imports done in the last year, one should be focused enough to track the prices and the sentiments of Castor oilseed trade in China and France.

Major Exporters of Castor seed oil in World 2012-13



Major Importers of Castor seed oil in World 2012-13



The major countries involved in the export of Castor seed oil are explained by the following chart. As per the details India exports 89 per cent of the total global exports of castor seed. The other exporting country competing with India in exporting castor seed in the world is Netherland with the global share of 4 per cent. The other exporting nations worth mentioning are France, Germany, USA, and Thailand.

### India's Export of Castor Oil

(Lakh MT)

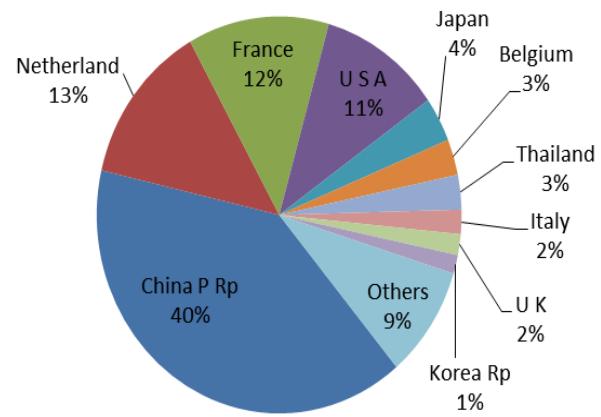
| Country      | 2013-14     | 2014-15     | 2015-16     | 2016-17     | 2017-18*    |
|--------------|-------------|-------------|-------------|-------------|-------------|
| China        | 2.15        | 1.57        | 2.38        | 2.39        | 1.92        |
| Netherland   | 0.87        | 0.90        | 0.80        | 0.80        | 0.70        |
| France       | 0.68        | 0.69        | 0.66        | 0.75        | 0.48        |
| USA          | 0.55        | 0.65        | 0.57        | 0.65        | 0.50        |
| Japan        | 0.19        | 0.22        | 0.23        | 0.22        | 0.17        |
| Belgium      | 0.07        | 0.08        | 0.11        | 0.18        | 0.06        |
| Thailand     | 0.23        | 0.21        | 0.19        | 0.17        | 0.21        |
| Italy        | 0.04        | 0.05        | 0.09        | 0.12        | 0.08        |
| UK           | 0.10        | 0.09        | 0.09        | 0.10        | 0.06        |
| Korea        | 0.08        | 0.08        | 0.08        | 0.09        | 0.07        |
| Others       | 0.49        | 0.94        | 0.66        | 0.55        | 0.41        |
| <b>World</b> | <b>5.45</b> | <b>5.47</b> | <b>5.87</b> | <b>6.01</b> | <b>4.66</b> |

Source: DGCIS

\*(April- November)

The major importers of castor oil from India are China, Netherland, France, USA, Japan, Belgium, Thailand, Italy, UK and Korea. China is the largest importer with a share of almost 39.72 per cent, Netherland 13.28 per cent, France with 12.50 per cent, USA 10.80 per cent, Japan 3.63 per cent, Belgium 2.93 per cent and Thailand 2.82 per cent. Imports from France in 2010-2011 have shot up by more than 100 per cent as compared to the year 2009-2010 as the global demand for Synthetic flavors and fragrance industry which makes major use of castor oil's derivatives in it has picked up tremendous pace. France is the leading nation for picking up this pace. Castor seed oil and meal are major products of the seed and both are export oriented commodities. Castor seed oil exports during April-November 2017-18 stood at 4.66 lakh MT. The exports are almost seem stable between 4 to 6 lakh MT, the export this is expected to reduce than last year which was almost 6.01 lakh MT in 2016-17.

### India's Export of Castor Oil 2016-17



## India's Global Trade

Castor Seed & Castor oil are both export oriented commodities. Since India produces more than 85 per cent of global castor seed, the study of the India's export for the same is of paramount importance. In 2008-09, the export of castor oil and castor meal has improved substantially for the country at 3,08,625. In the last 10 years the export of castor meal and castor seed oil has averaged to about 3.89 lakh MT and 4.25 lakh MT respectively.

During the MY 2016-17, castor oil and meal has recorded 1.03 per cent and 9.95 per cent less exports respectively as per the latest data released by the Solvent Extractors' Association of India (SEA) compared to last year. The drop in castor oil exports is attributed to lower demand in

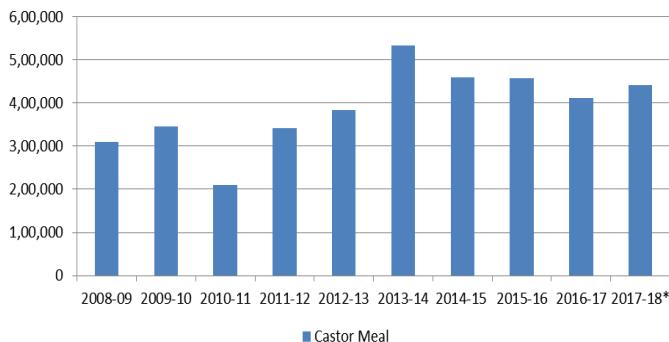
### Trends in export of castor seed from India (MT)

| Year     | Castor Meal | Castor Oil |
|----------|-------------|------------|
| 2008-09  | 3,08,625    | 3,08,625   |
| 2009-10  | 3,45,333    | 3,45,333   |
| 2010-11  | 2,09,036    | 3,43,254   |
| 2011-12  | 3,41,308    | 4,04,489   |
| 2012-13  | 3,83,392    | 4,30,752   |
| 2013-14  | 5,33,668    | 4,72,255   |
| 2014-15  | 4,58,406    | 5,05,738   |
| 2015-16  | 4,56,319    | 5,43,274   |
| 2016-17  | 4,10,915    | 5,37,660   |
| 2017-18* | 4,40,751    | 3,62,124   |

\* April-December 2017

Source: The Solvent Extractors' Association of India.

India's Export of Castor Meal

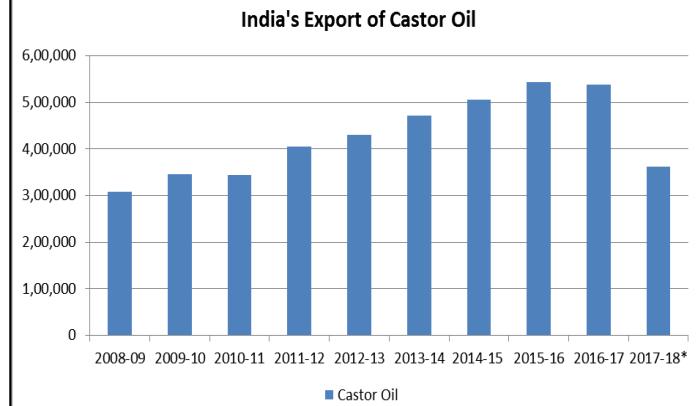


The oil exports were on increasing trend since 2011-12. However, for the marketing season 2016-17, the exports of castor oil during April and November is about 5,37,660 MT which is 1.03 per cent lower compared to last year's export of 5,43,274 MT for the same period.

Castor meal is also the important by-product due to its high nitrogen content, and it is predominantly used as an organic fertilizer. For the FY 2015-16 (Apr-Mar), India exported 4.56 lakh MT of castor meal, which is 0.46 per cent lower than the export 4.58 lakh MT done last year, which continued to lower till 2016-17 at 4.10 lakh MT which had lowered by about 9.95 per cent which was 4.56 lakh MT in 2015-16, due to high demand in export market for castor meal it is

China, which exports about 40 per cent of castor oil from India. Castor oil and its derivatives mainly used in Lubricants, Cosmetics & Pharmaceuticals (largest application segment), Biodiesel, Plastics & Resins and Others. India exports 80-90 per cent of its castor derivative production to China, Netherland, France, USA etc. In 2016-17, castor oil exports from India dropped marginally by 1.03 per cent to 5.3 lakh MT as compared to last year's 5.43 lakh MT. The castor oil year is from April to March.

India's Export of Castor Oil



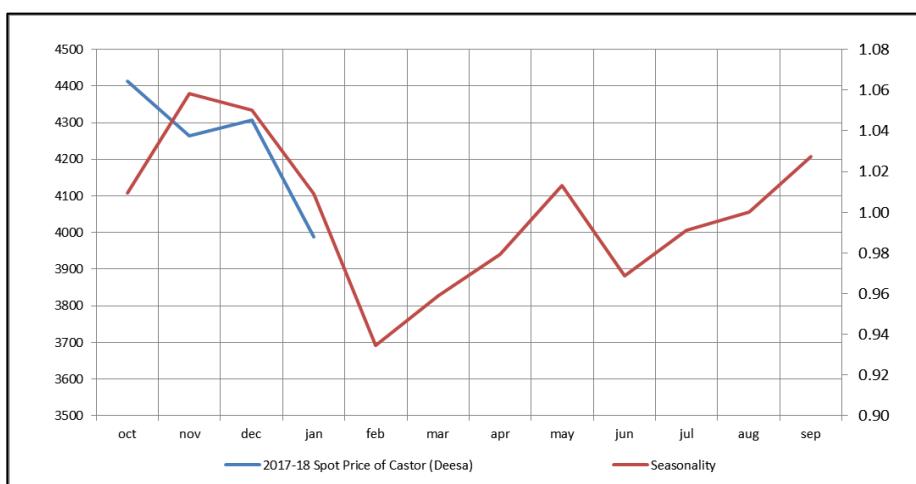
expected to increase by 7.26 per cent at 4.40 lakh MT. The major export destination is South Korea, Taiwan, Japan and France.

### Important Factors Driving Castor Prices

- India meets more than 80 per MT of the global demand for Castor oil, thereby enjoying a dominant position in the World Castor Scenario. India's exports of Castor oil and derivatives are estimated at over Rs.6,500 crores (US\$ 1 billion) per annum.
- As per the data from Agriculture Ministry, castor acreage in Gujarat increase by 5.67 per cent till Oct-13, 2017 to 5.96 lakh hectares as compared to 5.64 lakh hectares last year while Rajasthan recorded a down of 6.98 per cent in area to 1.6 lakh hectares in the same time frame. Overall area is slightly down from last year which may not affect the production much but late sowing in major growing states (Gujarat and Rajasthan) could affect the final yield to some extent.
- India, being the single largest producer of castor seed in the world, is likely to witness a decline in the crop output after the farmers shifted to other remunerative crops during the kharif of 2016.
- Castor seed area as on 06th October-2017 is around 8.44 lakh hectares which is down by 16.19 per cent normal area as on date of 10.07 lakh hectares and down by 1.79 per cent from last year area till date of 8.59 lakh hectare.
- The total castor acreage fell by more than 24 per cent in 2016-17 in comparison to that of the previous year. In Gujarat, the largest producer of castor seed, a drop of over 27 per cent was recorded in the acreage with merely 5.65 Lakh hectares being sown .Rajasthan and Andhra Pradesh also registered a drop in acreage of 14.5 per cent and 32.6 per cent respectively.
- An analysis of the situation reveals that the acreage from castor has been shifted to groundnut and cotton which were more remunerative last year. The lower castor seed and oil prices prompted processors and consumers in China and EU to boost castor oil imports from India during the past year.

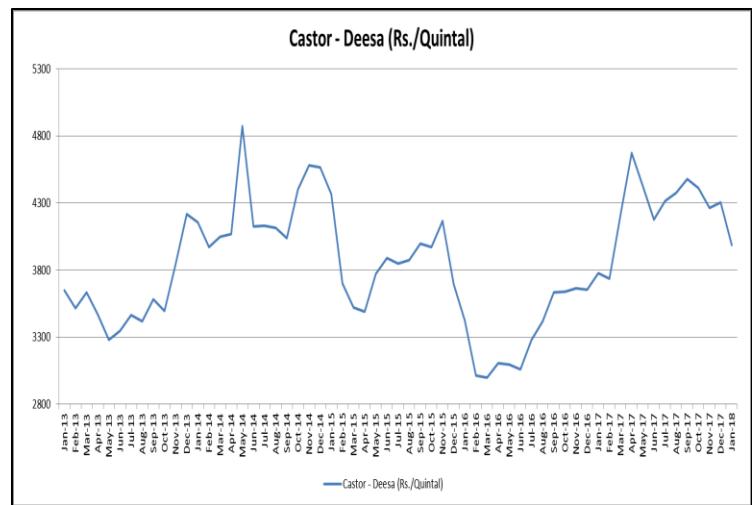
### Price trend Analysis

As per price seasonality index given in the chart, castor seed prices touches peak in August and September months that is lean season. The prices remain mostly stable or weak in February-June period that is peak arrival season. However, the price movement may largely influenced by crop output estimates. Although, arrivals start as early as January, the peak season in Gujarat is seen in March-April. The movement in the current years can be detailed as under. For 2017-18 season castor production in the country is estimated to decrease at around 13.96 lakh MT. Castor crop had been on a decline due to persistently lower prices since 2011-12, when production stood at 22.95 lakh MT, also the carryover stock from the



2016-17 crop are expected to be lower at around 1.5-lakh MT, thereby reducing the net availability of the oilseed.

The exports may take a halt as prices have already started firming up. But the foreign buyers can hold only till the new crop arrival starts around January-March because India is the main exporter to the world. But the price trend is expected to reverse in the next 2-3 months when it may touch around Rs. 5,000 per quintal on strong foreign buying amid lower crop estimates. As the production and carry forward stock are low for this season it is expected that the trend is expected to be bullish due to the high demand from exporting nations.



### Technical Recommendation:

The market is expected to trade bullish in the coming months with the bottom side support of 3700. Technically it can test levels of 4750 & 5100 in the coming 3 -4 months.

### Price Expectation

| Commodity              | Units      | Current Market<br>(31.01.2018) | Market<br>View | Technical Projections |      |      |
|------------------------|------------|--------------------------------|----------------|-----------------------|------|------|
|                        |            |                                |                | Support               | T1   | T2   |
| Castor Seed<br>(NCDEX) | Rs. / Qtl. | 4255                           | ↑              | 3700                  | 4750 | 5100 |

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