



# Indian Chrome Ore Industry - Overview, Challenges & Outlook

IFAC-2018 | New Delhi | 6<sup>th</sup> September 2017

**Disclaimer :**

**“The opinions, views and thoughts expressed in this presentation and on the following slides are solely those of the presenter”.**

**IMFA Ltd. does not necessarily subscribe to the opinions, views and thoughts expressed in the presentation and should not be held responsible for the same.**

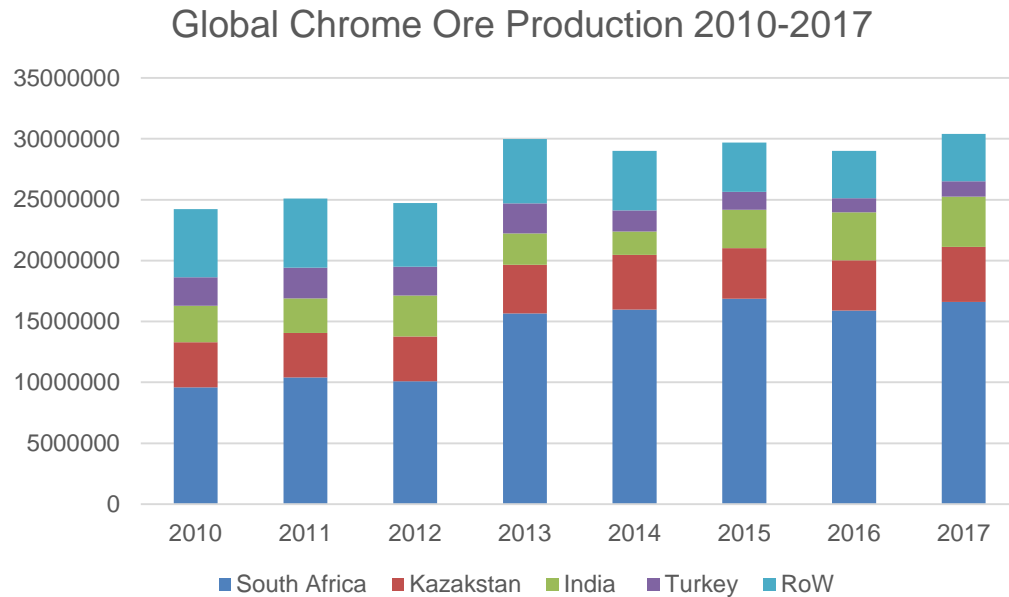
# Overview – World Chrome Ore Reserves

Chrome Ore Reserve Worldwide			
Country	Reserves (million tonnes)	Reserves (as % of World)	Rank
South Africa	6860	74.4	1
Zimbabwe	930	10.1	2
Kazakhstan	387	4.2	3
Turkey	220	2.4	4
Finland	120	1.3	5
<b>India</b>	<b>54</b>	<b>0.6</b>	<b>6</b>
Brazil	18	0.2	7
China	5	0.1	8
Others	621	6.7	-
Total	9215	100	-

Source: Department of Mineral Resources, South Africa and Heinz. H. Pariser

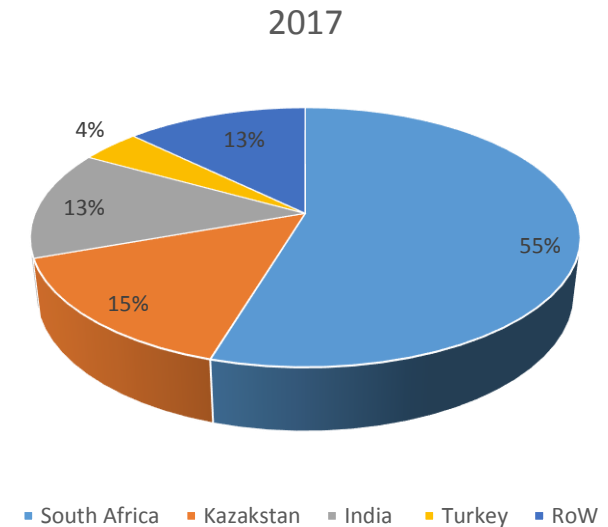
- South Africa & Zimbabwe – 85%
- India - 0.6%
- China - Negligible

# Global Overview – Chrome Ore Production



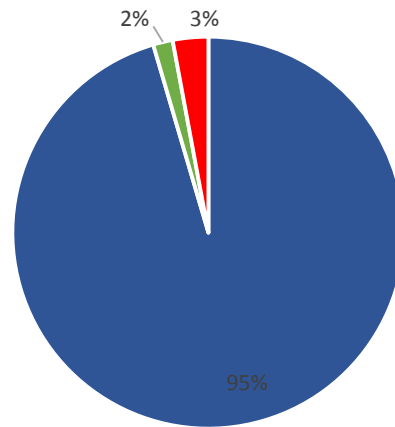
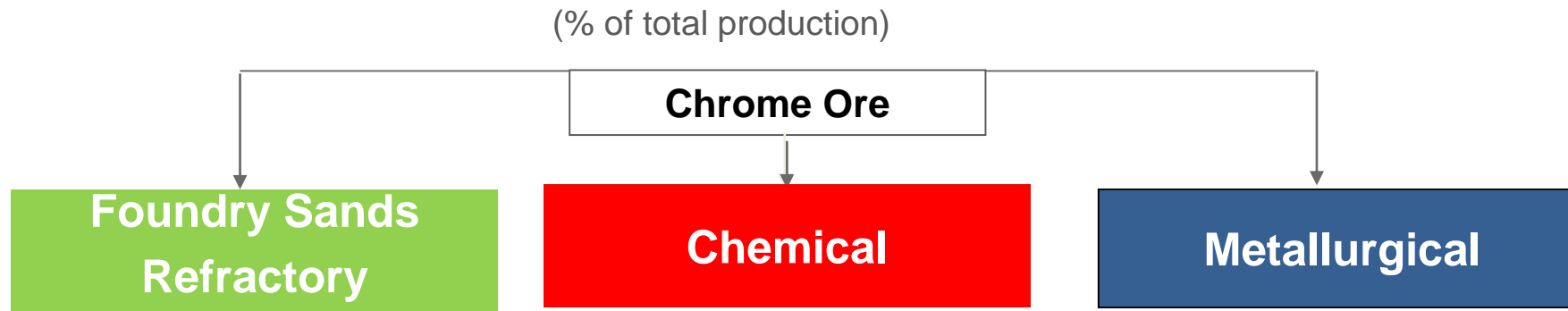
Source: ICDA

- Global chrome ore production around **30.4 million tonnes in 2017**, up 4.8% from 2016



- South Africa produces more than half of global chrome ore

# Chrome Ore Production by Grade in 2017



■ Metallurgical ■ Refractory Foundry Sands ■ Chemical

Source: ICDA

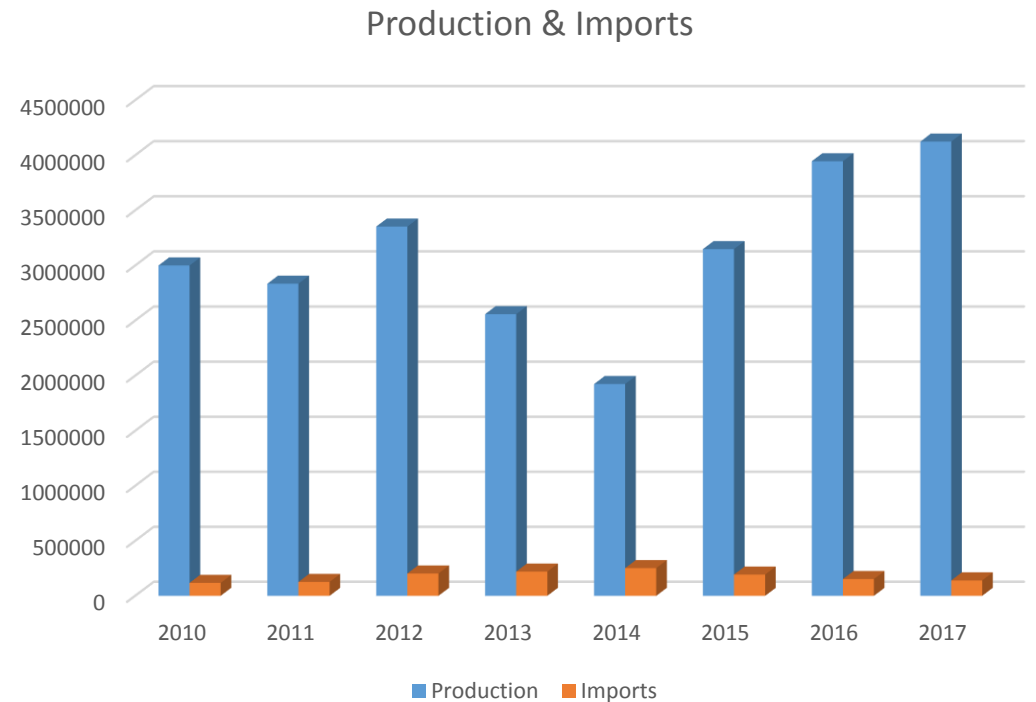
- 95% of total chrome ore production is used in metallurgical applications.
- High-carbon ferrochrome & charge chrome production represents 92% of global ferrochrome production in 2017.
- Around 2 thirds of ferrochrome production is used to produce stainless steel.

# India's Position in the Chrome Ore Industry

- Chrome ore reserves: world's 6<sup>th</sup> largest after South Africa, Zimbabwe, Kazakhstan, Turkey & Finland.
- Chrome ore production: world's 3<sup>rd</sup> largest after South Africa & Kazakhstan.

# Overview – Indian Chrome Ore Industry

- First discovered in India in 1903 & about 99% of Indian reserves are in Sukinda Valley of Odisha.
- Output & utilisation
- 2017:4.12 million tonnes mined
  - 4 million tonnes consumed domestically including stock
  - 0.1 million tonnes exported
- Imports – 0.14 million tons mainly from SA & lumpy ore from Oman



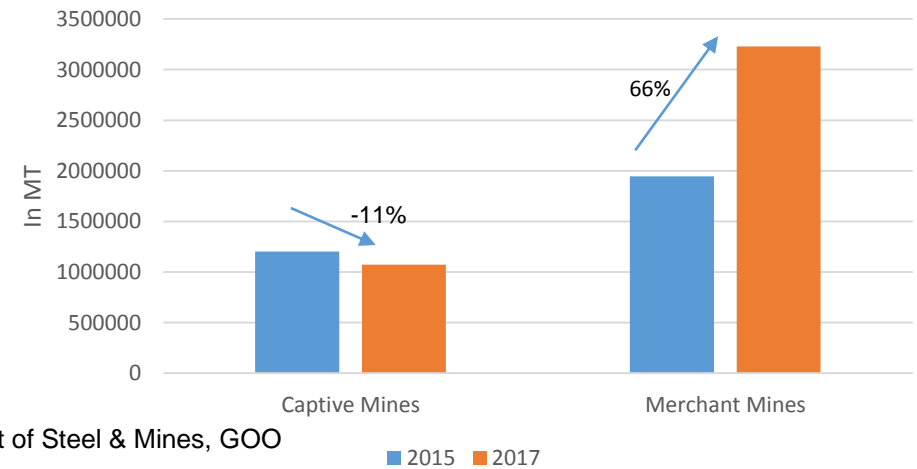
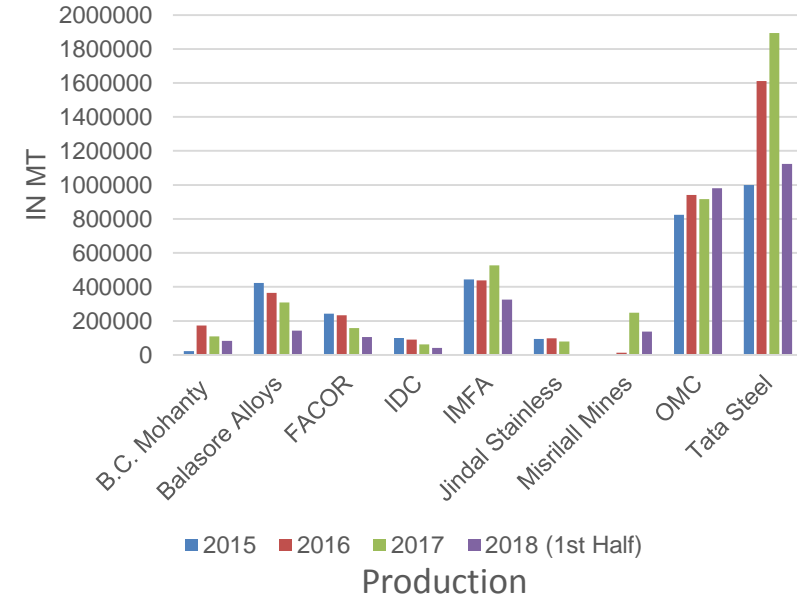
Source: ICDA Statistical Bulletin

# Ore Producers

- Merchant mines
  - OMC, Tata Steel Ltd, B C Mohanty, Misrilall, IDC
- Captive mines
  - Balasore Alloys, FACOR Ltd, IMFA Ltd, Jindal Stainless
- Lease area
  - OMC – 5829.304 ha
  - Tata - 406 ha
- Mostly opencast mining
- Between 2015 & 2017, production went up by 1 million tons (37% increase)



Chrome Ore Output



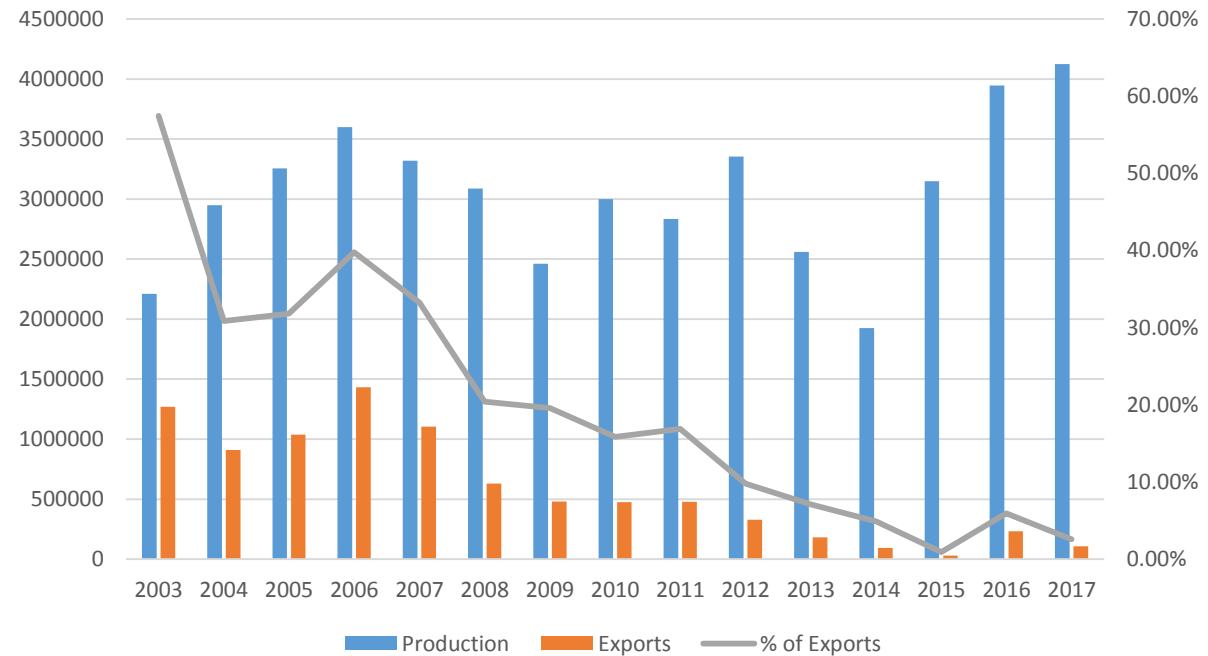
Source: Dept of Steel & Mines, GOO



# Focus on Value Addition

- Ferro Chrome is manufactured from Chrome ore/concentrate and is one of the vital input raw materials for manufacturing of Stainless Steel.
- In order to make the Ferro Chrome available for domestic Ferro Chrome manufacturers and in order to have value addition within the country, various measures were earlier taken by Government.
  - ✓ Export of Chrome ore and concentrate were canalized on 31<sup>st</sup> March' 1995.
  - ✓ w.e.f. 1<sup>st</sup> March 2007, Govt imposed export duty of Rs 2,000 pmt.
  - ✓ w.e.f. 1<sup>st</sup> March 2008, Govt export duty increased to Rs 3,000 pmt.
  - ✓ w.e.f. 17<sup>th</sup> March 2012 the export duty structure was changed from Rs 3,000 pmt to 30% Ad Valorem.
- Sharp decline in exports after imposition of export duty & focus on value addition

Chrome Ore Production & Exports



Source: ICDA Statistical Bulletin

# Challenges

- India's deposit of Chrome ore are meager 1% of the World Chrome ore reserves.
- **Lowest Per Capita Reserve Ratio (PCRR) among chrome ore bearing countries**
- Increase in levies – DMF (30% of royalty) & NMET (2% of royalty)
- Managing multiple stake holders
- Logistics
  - Per MT/Km is over Rs. 9, much higher than standard norms

Chrome Ore Reserve Worldwide					
Country	Reserves (million tonnes)	Reserves (as % of World)	Rank	Population (million)	Per Capita Reserve Ratio
South Africa	6860	74.4	1	55	125.18
Zimbabwe	930	10.1	2	14	65.49
Kazakhstan	387	4.2	3	17	22.76
Turkey	220	2.4	4	74	2.99
Finland	120	1.3	5	5	22.22
<b>India</b>	<b>54</b>	<b>0.6</b>	<b>6</b>	<b>1200</b>	<b>0.045</b>
Brazil	18	0.2	7	191	0.094
China	5	0.1	8	1375	0
Others	621	6.7	-	-	-
Total	9215	100	-	-	-

Source: Department of Mineral Resources, South Africa and Heinz. H. Pariser

# Outlook

- Tenure of Leases increased to 50 years
  - Helps in investments with a long term view
- Grant of all mines through auction
  - Greater transparency
- Auction in 2020
  - Would change the industry structure
- Chrome ore prices likely to go up

# Conclusion

- Given India's miniscule share of global chrome ore reserves, it is necessary to preserve it for domestic value addition
- Follow the Chinese model of long term mineral strategy
  - Largest producer of iron ore but does not export
- Value addition is the key to sustainable mining
  - To ensure equal benefits to corporates & society
- Opportunities, challenges & competitiveness dependant upon access to resources
- Key event in 2020 due to mines auction

Thanks for your attention!