

Minerals are valuable natural resources being finite and non-renewable. They constitute the vital raw materials for many basic industries and are a major resource for development. The history of mineral extraction in India dates back to the days of the Harappan civilization. The wide availability of the minerals in the form of abundant rich reserves made it very conducive for the growth and development of the mining sector in India.

The country is endowed with huge resources of many metallic and non-metallic minerals. Mining sector is an important segment of the Indian economy. Since independence, there has been a pronounced growth in the mineral production both in terms of quantity and value. India produces as many as 87 minerals, which includes 4 fuel, 11 metallic, 22 non-metallic, 3 atomic and 23 minor minerals (including building and other materials).

### Mineral Production

Based on the overall trend so far the index of mineral production (base 2011-12) for the year 2018-19 is estimated to be 107.9 as compared to 104.9 for 2017-18 showing a positive growth of 2.86%. The decline in production is due to the restriction on exports, temporary discontinuance of mining for want of environmental clearance etc. The trend of index of mineral production for the last five years is depicted in Figure 3.1.

The total value of mineral production (excluding atomic and fuel minerals) during 2018-19 has been estimated at Rs.144883.7731 crore, which shows a increase of about 10.11% over that of the previous year. The increment in value of mineral production is due to the restriction on exports, temporary discontinuance of mining for want of environmental clearance etc. During 2018 -19, estimated value for metallic minerals, 64042.4514 crore or 44.20% of the total value and non-metallic minerals including minor minerals 80841.3217 crore or 55.79% of the total value. Information on production and value of selected minerals from 2014-15 to 2018-19 is given in Annexure 3.1. The details of Export and Import of Minerals during the period 2014-15 to 2018-19 are given at Annexure 3.2 and Annexure 3.3. The trend of value of mineral production for last five years is depicted in Figure 3.2. The value of Minerals by groups for the last five years is given in Figure 3.3.

Figure 3.1  
Index of mineral production  
(Base 2011-12 = 100)

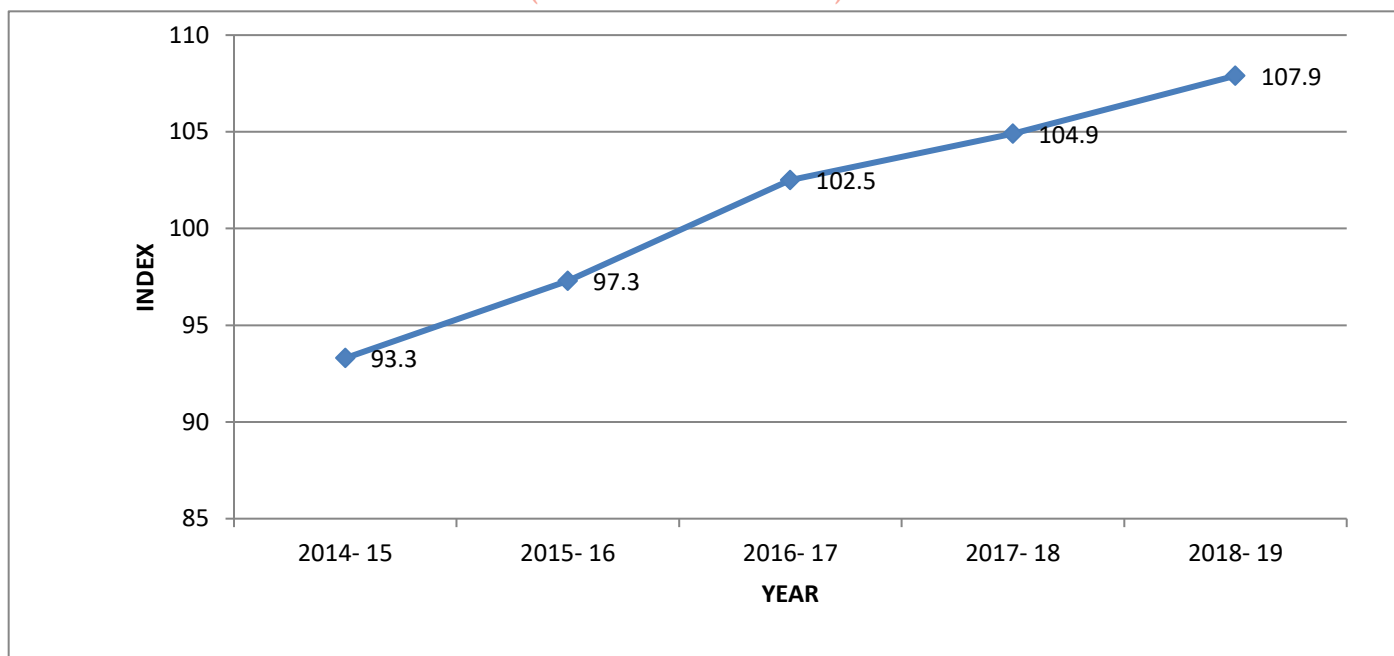


Figure 3.2

### Trends in Value of Mineral Production, Exports & Imports

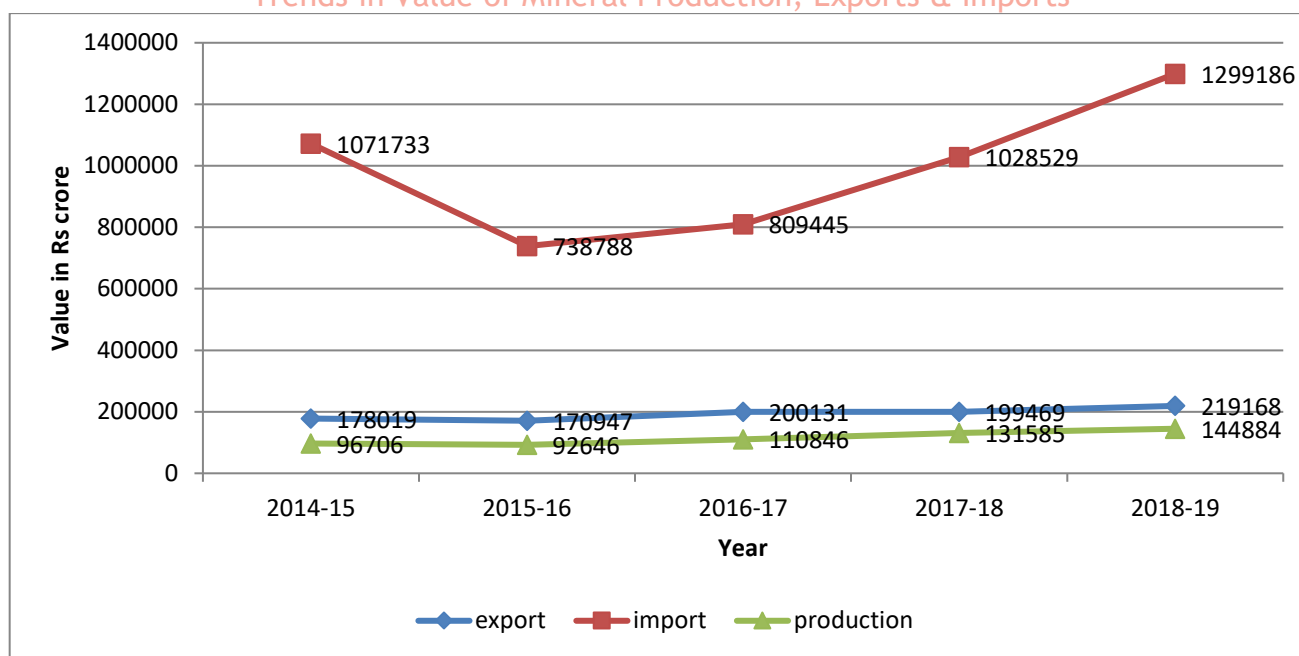
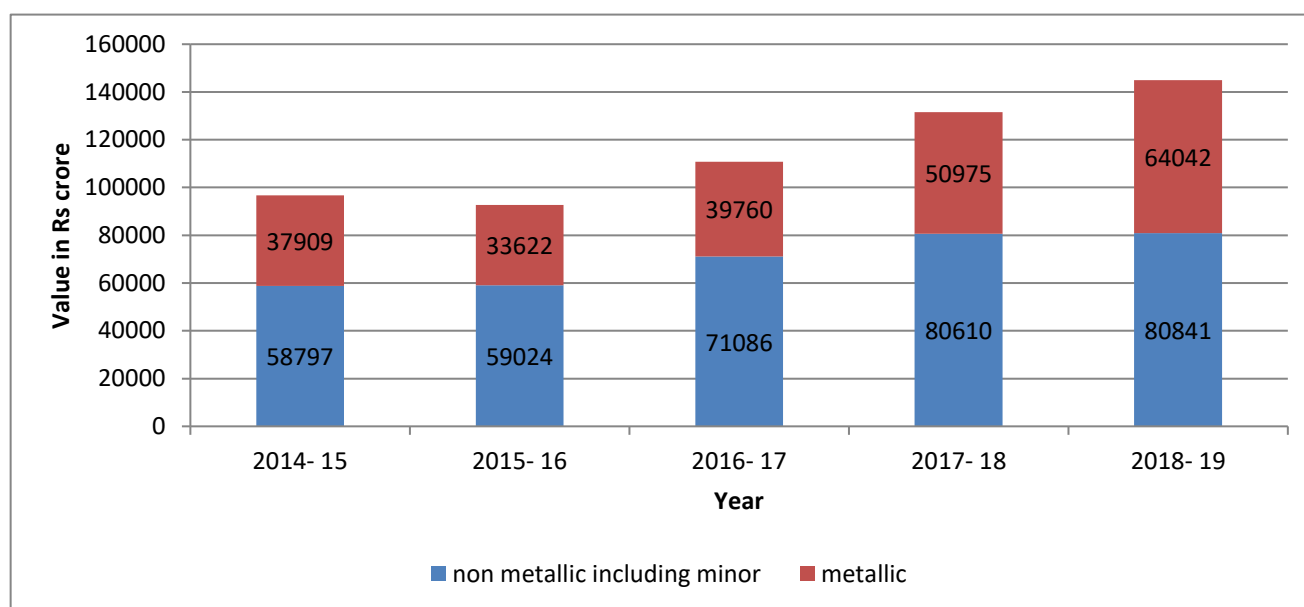


Figure 3.3  
Value of Minerals Production (by groups)



### PRICE TREND

The Office of the Economic Advisor, Ministry of Commerce and Industry has shifted the base year from 2004-05 to 2011-12. The WPI for minerals (base 2011-12=100) stood at 139.3 in February 2019 and the corresponding index was 121.6 for February 2018.

The minerals included in the wholesale price index are bauxite, chromite, iron ore, copper conc., lead conc., garnet, zinc conc, manganese ore, limestone, phosphorite and sillamanite. The wholesale price index for metallic minerals was 126.2 in February 2019 as compared to 106.7 in February 2018 and that of other minerals was 185 in February 2019 as compared to 173.6 in February 2018.

### GROSS DOMESTIC PRODUCT FROM MINING & QUARRYING SECTOR

The Gross Domestic Product (GDP) accrued from mining and quarrying sector at 2011-12 prices is estimated by Central Statistical Office (CSO). The GDP (at 2011-12 prices) for the year 2018-19, indicated that the mining and quarrying sector accounted for about 2.20% of GDP. The contribution of mining and quarrying sector to GDP for the year 2018-19 is estimated at Rs. 330521 crore. This indicated a decline of 5.62% over that in the previous year. Similarly, the GDP (at current prices) for the year 2017-18, indicated that the mining and quarrying sector accounted for about 2.17% GDP. The contribution of mining and quarrying sector to GDP for the year 2017-18 estimated at Rs. 329612 crore indicated an increase of 0.28% over that in the previous year.

### Mining

Indian mining industry is characterized by a large number of small operational mines. The number of mines which reported mineral production [excluding minor minerals, fuel minerals and atomic minerals] in India was 1364 in 2018-19 as against 1509 in the previous year. Out of 1364 reporting mines, 213 were located in Madhya Pradesh followed by Gujarat (185), Karnataka (137), Odisha (134), Andhra Pradesh (130), Tamil Nadu (101), Chhattisgarh (89), Rajasthan (82),

Maharashtra (65), Jharkhand (59), and Goa (50). These 11 States together accounted for 91.28% of total number of mines in the country in the year 2018-19. The numbers of reporting mines are given at Table 3.1. Area wise distribution of Mining Leases all over India pertaining to all Minerals excluding fuel, atomic and minor Minerals is given at Table 3.2.

**Table 3.1**  
**Number of Reporting Mines**

Sector	2016-17	2017-18	2018-19(P)
Metallic Minerals	686	665	597
Non-Metallic Minerals	930	844	767
All Minerals Total*	1616	1509	1364

\*Excluding atomic minerals, fuel mineral and minor minerals.

**Table - 3.2**  
**Area wise Distribution of Mining Leases\* (Frequency in Hect.) As on 31.03.2020 (P)**  
**(All India)**

Frequency Group Area in Hects.	Number of Mining Leases	Percentage of total leases	Area in '000 Hects.	Percentage of total area
0 to 2	396	12	515.23	++
> 2 to 5	898	26	3476.95	1
> 5 to 10	414	12	3045.10	1
> 10 to 20	388	11	5735.68	2
> 20 to 50	470	14	15319.63	5
> 50 to 100	274	8	19554.02	6
> 100 to 200	207	6	29914.08	10
> 200 to 500	211	6	69555.86	22
Above 500	179	5	165529.17	53
<b>Total</b>	<b>3437</b>	<b>100</b>	<b>312645.72</b>	<b>100</b>

Sources:- Respective State Governments (DGMS/DMGs etc). However, the data received from respective regional offices of IBM have also been taken in account wherever necessary.

(P): Provisional                    ++: Negligible

\*: Other than Atomic, Hydro Carbons Energy & Minor Minerals

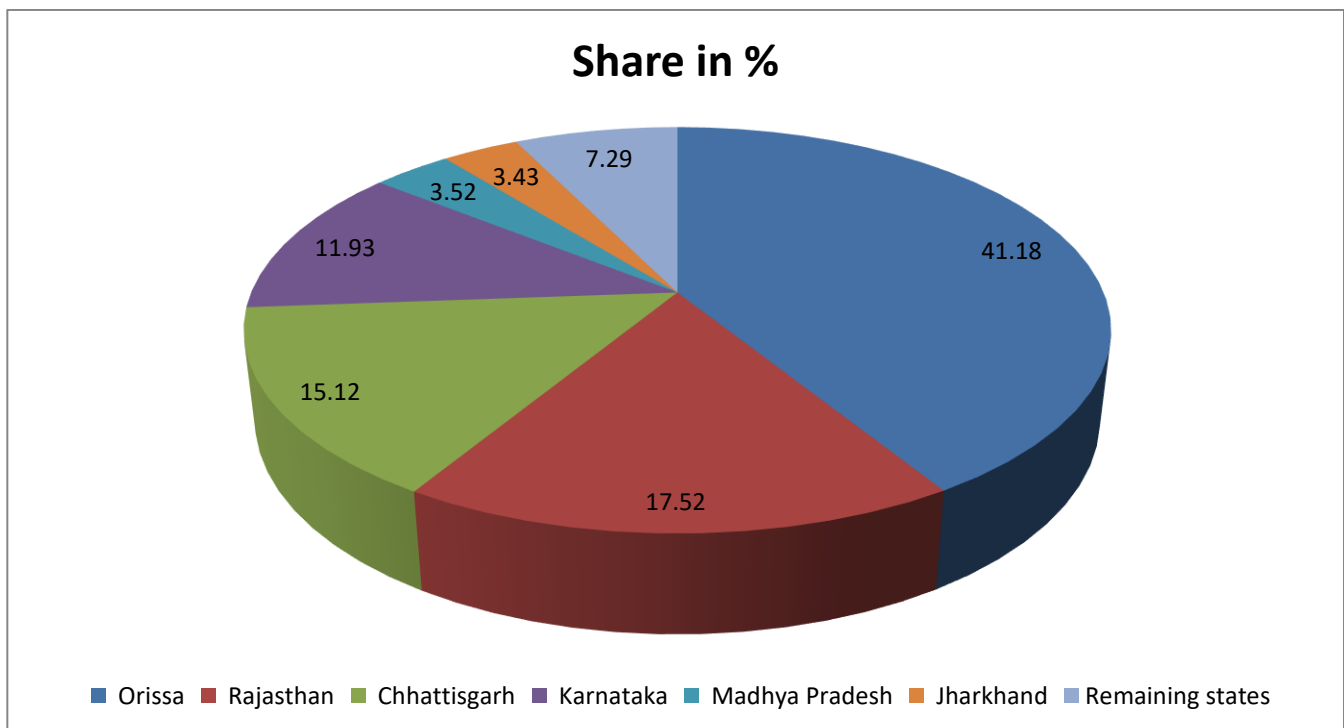
The number of Underground Mines in operation Mineral wise (excluding fuel, atomic and minor minerals) is at Table 3.3.

**Table 3.3**

Mineral	Cat. A	Cat. B	Total
Apatite	-	1	1
Chromite	6	-	6
Copper Ore	6	-	6
Gold	5	1	6
Lead & Zinc Ore	9	1	10
Manganese Ore	9	7	16
Rock salt	-	1	1
<b>Total</b>	<b>35</b>	<b>11</b>	<b>46</b>

During the year 2018-19, mineral production was reported from 23 States of which the bulk of value of mineral production of about 92.71% was confined to 6 States only. The order was Odisha with a share of 41.18% followed by Rajasthan (17.52%), Chhattisgarh (15.12%), Karnataka (11.93%), Madhya Pradesh (3.52%), Jharkhand (3.43%), in the total value of mineral production. Remaining 17 States have individual share of less than 3% altogether accounted for 7.29% of total value during the year under review. The contribution of States/Regions in the value of mineral production during 2018-19 is pictorially shown in Figure

Figure 3.4  
Share of States in Value of Mineral Production 2018-19



Note: Excluding fuel and minor minerals

State-wise analysis revealed that during the year 2018-19, the value of mineral production has shown a mixed trend as compared to that in the previous year. The States, which have indicated an increase in the value of mineral production, are Bihar (457.6%), Odisha (53.9%), Uttarakhand (33.2%), Chhattisgarh (19.9%), Assam (18.7%), Rajasthan (14.8%), Andhra Pradesh (13.0%), Madhya Pradesh (11.3%), Telangana (10.6%), Maharashtra (6.2%), Jammu & Kashmir (5.3%), Jharkhand (3.9%), Tamil Nadu (3.4%), Himachal Pradesh (2.7%), and Karnataka (0.7%). However, some of the principal mineral producing States revealed decrease in value of mineral production and those includes Goa (100.0%), Kerala (31.0%), Uttar Pradesh (11.6%), Gujarat (11.3%), and Meghalaya (2.4%).

The all India Reserves and Resources of various minerals as on 1st April, 2015, as per UNFC System, is given in at Annexure 3.4.

During the year 2018-19, the Private Sector contributed for 69.34% or Rs. 50798 crore (including metallic and non metallic) in the total value. The minerals which were wholly mined/recovered by the private sector in 2018-19 were Graphite, Iolite, Lead conc, Limeshell, Siliceous earth, Wollastonite, Zinc conc, Lead and zinc ore, Marl and Moulding sand. In 2018-19, the Private Sector accounted for sizeable 97.12% of Limestone, 76.40% of Vermiculite, 72.18% of Magnesite, 68.83% of Chromite, 65.60% of Iron Ore, 63.81% of Silimanite, 62.95% of Garnet, 62.20% of Kyanite, 54.55% of Manganese Ore.

During the year 2018-19, the Public Sector contributed for 30.66% or Rs. 22459 crore (including metallic and non metallic) in the total value. The minerals which were wholly mined / recovered by the public sector in 2018-19 were Copper ore and concentrate, Diamond, Fluorite (graded), Rock salt, Selenite and Sulphur. In 2018-19, the Public Sector accounted for sizeable 99.34% of Gold Ore, 94.54% of Tin concentrate, 93.06% of Phosphorite.

As per World Mineral Production, 2014-18, British Geological Survey, India's ranking in 2018 in world production was 2nd in Steel (crude/liquid), 3rd in Zinc slabs, 4th in aluminium, Chromite, iron ore, and lead (refined); 5th in Bauxite, 7th in Manganese ore, 11th in copper (refined), 15th in Magnesite and 16th in apatite & rock phosphate. The statistics on indigenous and world production of principal minerals and metals are given below:

## Contribution and Rank of India in World Production of Principal Minerals & Metals, 2018

Sector	Unit of Commodity	Production (quantity)		Contribution (Percentage)	India's rank in World order \$
		World	India*		
<b>Metallic Minerals</b>					
Bauxite	'000 tonnes	326000	23688	7.27	5 <sup>th</sup>
Chromite	'000 tonnes	40800	3971	9.73	4 <sup>th</sup>
Iron ore	million tonnes	2923	206	7.05	4 <sup>th</sup>
Manganese ore	'000 tonnes	53000	2820	5.32	7 <sup>th</sup>
<b>Industrial Minerals</b>					
Magnesite	'000 tonnes	29500	147	0.50	15 <sup>th</sup>
Apatite & rock phosphate	'000 tonnes	232000	1285	0.55	16 <sup>th</sup>
<b>Metals</b>					
Aluminium (Primary)	'000 tonnes	62700	3696	5.89	4 <sup>th</sup>
Copper (refined)	'000 tonnes	23900	454	1.90	11 <sup>th</sup>
Steel (crude/liquid)	million tonnes	1812	110.92	6.12	2 <sup>rd</sup>
Lead (refined)	'000 tonnes	12000 <sup>##</sup>	620 <sup>#</sup>	5.17	4 <sup>th</sup>
Zinc (slab)	'000 tonnes	13300	696	5.23	3 <sup>rd</sup>

Source: World mineral production data compiled from World Mineral Production, 2014-2018; British Geological Survey.

\* Figures relate to 2018-19.

\$: India's rank based on production mentioned in World Mineral Production 2014-18; British Geological Survey.

#: Figures as published in World Mineral Production, 2014-18. However, the production of Lead (Primary) during 2018-19 was 198 thousand tonnes.

##: Figure relates to both primary and secondary refined lead and include the lead content of antimonial lead.

Note: (i) Data in respect of World Mineral Production is on calendar year basis, however the data on India's production is based on financial year.

(ii) Minor Minerals\* have not been included due to non-availability of production data with respect to India on statutory basis.

### Self-Reliance in Minerals & Mineral Based Products

India continued to be wholly or largely self-sufficient in minerals which constitute primary mineral raw materials that are supplied to industries, such as, iron & steel, aluminium, cement, refractories, ceramics, glass, etc. India is self-sufficient or near to self-sufficient in bauxite, chromite, limestone, iron ore and sillimanite. India is deficient in kyanite, magnesite, rock phosphate, manganese ore, etc. which were imported to meet the demand for either blending with locally available mineral raw materials and/or for manufacturing special qualities of mineral-based products. To meet the increasing demand of uncut diamonds, emerald and other precious & semi-precious stones by the domestic Cutting and Polishing Industry, India is dependent on imports of raw uncut stones for their value-added re-exports. The degree of self-sufficiency in respect of various principal minerals (other than atomic, hydrocarbon energy and minor minerals) and metals in 2018-19 is furnished below:

#### Degree of Self-sufficiency in Principal Minerals & Metals, 2018-19 (P)

Sl. No.	Commodity	Demand/Domestic Consumption ('000 tonnes)	Supply/Domestic supply ('000 tonnes)	Order of self-sufficiency (%)
<b>Minerals</b>				
1	Bauxite	22189	23688	100
2	Chromite	1920	3971	100
3	Iron ore	159940	206446	100
4	Kyanite	5.1	4.89	96
5	Limestone	350878	379045 <sup>1/</sup>	100
6	Magnesite	195	147	75
7	Manganese ore*	5548	2820	51
8	Rock phosphate (including apatite)*	8802	1285	15
9	Sillimanite	56	69	100
<b>Metals*</b>				
10	Aluminium (primary)	3676	3696	100
11	Copper (refined)	1159 <sup>2/</sup>	454	39
12	Lead (primary)	381 <sup>3/</sup>	198	52
13	Zinc	778 <sup>4/</sup>	696	89

Source: MCDR Returns for production data.

\*: Apparent demand (production+ import-export)

<sup>1/</sup> Excludes production of limestone as a minor mineral, calcite & chalk and includes limeshell, limekankar & marl.

<sup>2/</sup> Based on production of copper cathode and imports & exports of copper & alloys.

<sup>3/</sup> Based on production of lead (primary), and imports & exports of lead & alloys.

<sup>4/</sup> Based on production of zinc (ingots) and imports & exports of zinc & alloys.

Note: (i) Minor minerals have not been included due to non-availability of production data on statutory basis.

(ii) Even in cases where almost domestic demand is satisfied by domestic supplies, some quantities of certain special quality/types of minerals and metals/ferroalloys are imported to meet the requirement in specific end-uses.



## PRODUCTION TRENDS

### Metallic Minerals

The value of metallic minerals in 2018-19 at Rs. 64042 crore increased by about 26% over the previous year. Among the principal metallic minerals, iron ore contributed Rs 45184 crore or 70.55%, Zinc concentrate Rs. 5608 crore or 8.76%, chromite Rs. 3584 crore or 5.60%, Silver Rs 2582 or 4.03%, manganese ore Rs. 2270 crore or 3.54%, Bauxite Rs. 1717 crore or 2.68%, lead concentrate Rs. 1632 crore (2.55%), copper (concentrate) Rs. 940 crore or 1.47%, and Gold Rs. 524 crore or 0.82%.

The production of iron ore at about 206.45 million tonnes in 2018-19 registered a decrease of 2.49% over the previous year. About 34% of the total production was shared by Public Sector Companies like NMDC, SAIL, Odisha Mining Corporation, etc. The share of Private Sector was 66% which included Rungta Mines, Tata Steel, Serajuddin, Essel Mining, etc. Almost the entire production of iron ore (97%) accrued from Odisha, Chhattisgarh, Karnataka and Jharkhand during the year. The remaining 3% production was reported from Madhya Pradesh, Rajasthan, Maharashtra and Andhra Pradesh.

The production of copper concentrate at 155.44 thousand tonnes in 2018-19 was increased by about 9.47% as compared to the previous year.

The production of chromite at 3.97 million tonnes in 2018-19 increased by 14.07% as compared to the previous year. Odisha reported almost entire output of chromite (100%) in the country. Private sector producers; viz, Tata Steel, IMFAL, Balasore Alloys Ltd, Misrilal Mines, BC Mohanty & sons and FACOR having their own plants. They jointly accounted for 69% of total production during 2018-19. Two Public Sector Companies; viz, Odisha Mining Corporation (OMC), and Industrial Development Corp. of Odisha Ltd. (IDCOL) together reported 31% of the total production in 2018-19.

The production of manganese ore at 2.82 million tonnes in 2018-19 increased by about 8.48% compared to that in the previous year. MOIL continued to be the largest producer of manganese ore with a share of 46% of the total production in 2018-19 followed by, Sandur Manganese & Iron Ores Ltd (10%), Tata Steel (9%). Of the total production of manganese ore in 2018-19, Madhya Pradesh contributed 33%, Maharashtra 27%, Odisha contributed 16%, Karnataka 12% and Andhra Pradesh 10%.

The production of primary gold at 1664 kg in 2018-19 registered increase of about 0.79% as compared to the previous year. Karnataka was the leading producer of gold accounting for 99.82% of the total production. The remaining production was reported from Jharkhand.

The production of bauxite at 23.69 million tonnes in 2018-19 decreased by 3.96% compared to the previous year. Five major companies, namely NALCO (30.50%), Utkal Alumina International Limited (22.00%), HINDALCO (12.85%), Odisha Mining Corporation (10.77%), dominated the total mining activities of bauxite of the country in 2018-19. Odisha accounted for 65% of the total output of bauxite during 2018-19 followed by Jharkhand 10%, Gujarat 9%, Chhattisgarh 6%, Maharashtra 6%, and Madhya Pradesh 3%.

During the year 2018-19, the production of lead concentrate at 358 thousand tonnes increased by 16.96% and that of zinc concentrate at 1457 thousand tonnes showed a decrease of 5.36% over the previous year. Rajasthan accounted for the entire production of lead concentrate and zinc concentrate during the year 2018-19.

### Non-Metallic Minerals

The value of production of non-metallic minerals at Rs 9215 crore during 2018-19 increased by 4.06% as compared to the previous year. Limestone retained its leading position by contributing 92.1% of the total value of non-metallic minerals in the year 2018-19. The other non-metallic minerals in the order of importance were phosphorite (3.8%), garnet (abrasive) (1.7%), diamond (0.6%), silimanite (0.6%), magnesite (0.4%), marl (0.4%), wollastonite (0.2%), and siliceous earth (0.1%). The remaining was from other non-metallic minerals.

The production of limestone was at 379 million tonnes in the year 2018-19 increased by 11.35%, as compared to that in the previous year. Limestone is widely produced in India. As much as, 92% of the total output in the year 2018-19 was contributed by nine principal States; viz, Rajasthan (20%), Madhya Pradesh (13%), Andhra Pradesh (13%), Chhattisgarh (11%), Karnataka (9% each), Telangana (8%), Gujarat (7%), Tamil Nadu (6%), and, Maharashtra (4%). The remaining 8% of the total production was shared by other limestone producing States. About 53% of total production was reported by principal producers, namely, Ultra Tech Cement Limited (17%), Shri Cement Limited (7%), ACC Limited (6%), Ambuja Cement (6%), and The Ramco Cements Limited, The India Cements Limited, Jaiprakash associates limited, Dalmia Cement (Bharat) Ltd., Century Textiles & Industries Ltd., J.K. Cement Limited (3% each).

## Minor Minerals

The value of production of minor minerals was estimated at Rs 71626 crore in the year 2018-19. Andhra Pradesh with share of 23.5% in the value of minor minerals produced in the country occupied the top position. Telangana was at second place and had a share of 15.0% in the value of minor minerals. Next in the order was Rajasthan with a share of 14.3%, Gujarat 9.4%, Madhya Pradesh 7.9%, Uttar Pradesh 7.8%, Maharashtra 6.4%, Bihar 6.0 %, Kerala 5.4%, Karnataka 1.3%, and Chhattisgarh 1.3% The contribution of remaining States and UTs was less than one percent each.

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