

PRODUCTION



Indian Minerals Yearbook 2020

(Part- I : GENERAL REVIEWS)

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PRODUCTION

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**GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES**

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MINERALS

The mineral production (excluding Atomic Minerals and Minor Minerals) in India increased by 1.6% (as per index of mineral production base year 2011-12) during 2019-20 as compared to the previous year due to increase in the production of coal, gold, iron ore, and manganese ore among metallic minerals and fluorite, iolite, marl, salt (rock) and sulphur among non-metallic minerals.

Fuel Minerals

The production of coal at 731 million tonnes during 2019-20 increased by slightly about 0.3% as compared to 729 million tonnes in the previous year. The production of lignite at 42 million tonnes during 2019-20 decreased marginally by about 4.9% to 44 million tonnes as compared to the previous year. The production of petroleum (crude) at 32 million tonnes decreased by 5.9% whereas production of natural gas decreased by 5.1% as compared to that of the previous year.

Offshore regions remain the largest producing area and contributed 49.74% of total production of petroleum (crude) followed by Rajasthan 21%, Gujarat 15% and Assam 13%. The remaining 2.2% was contributed by a few other States. During 2019-20, production of natural gas (utilised) at 31,184 m cu m reported a decrease of about 5.14% as compared to the level of previous year. Offshore region, the largest source for natural gas in the country accounted for 66% of the total production, while Assam contributed 10 per cent. The remaining was contributed by a few other States.

Metallic Minerals

The value of production of metallic minerals in 2019-20 at ₹66,084 crore increased by about 2.9% over that of the previous year mainly due to higher

production reported in gold, lead & zinc ore, iron ore (total) and manganese ore. Among the principal metallic minerals, iron ore contributed ₹ 48,107 crore or 73%, lead (concentrate) & zinc (concentrate) together ₹ 7,830 crore or 12%, chromite ₹ 3,332 crore or about 5%, manganese ore ₹ 1,942 crore or about 3%, silver ₹ 1,805 crore or 2.7%, bauxite ₹ 1,579 crore or 2.4% and the remaining value was from copper (concentrates), gold, silver and tin concentrates in the total value of metallic minerals.

The production of **iron ore** at about 246 million tonnes in 2019-20 increased by 19% over the previous year. Production of iron ore was mainly from Odisha (59.64%), Chhattisgarh (14.11%), Karnataka (12.76%), and Jharkhand (10.93%) during the year. The remaining 2.56% production was reported from Andhra Pradesh, Goa, Madhya Pradesh, Maharashtra, Telangana and Rajasthan.

The production of **chromite** at 3.93 million tonnes in 2019-20 decreased by 1% as compared to the previous year. Odisha reported almost entire output of chromite in the country. The production of **copper ore** at 3.95 million tonnes was 4% lower, while that of **copper concentrate** at 125 thousand tonnes in 2019-20 decreased by 13% as compared to the previous year. The average metal content in copper conc. was 21.58% Cu. The production of **manganese ore** at 2.90 million tonnes in 2019-20 increased about 3% as compared to that in the previous year. Of the total production of manganese ore in 2019-20, Madhya Pradesh continued to be the largest producer by contributing 33%, followed by Maharashtra (25%) and Odisha (19%). The remaining production was reported by Andhra Pradesh, Karnataka Jharkhand, Rajasthan, Gujarat and Telangana.

The production of **gold** at 1,724 kg (excluding gold recovery from imported concentrates) in 2019-20 increased by 4% as compared to the previous

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year. Karnataka was the leading producer of gold accounting for almost 100% output. The production of **bauxite** at 21.82 million tonnes in 2019-20 decreased by 8% as compared to the previous year. During the year under review, Odisha accounted for 71% of the total output followed by Gujarat (9%) and Jharkhand (6%). The remaining production was reported from Chhattisgarh, Maharashtra, Madhya Pradesh and Tamil Nadu. During 2019-20, the production of **lead concentrate** at 351 thousand tonnes decreased by 2% and that of **zinc concentrate** at 1,446 thousand tonnes decreased marginally over the previous year. Average metal content produced in lead concentrate was 55.32% Pb and in zinc concentrate it was 49.63% Zn. Rajasthan was the only State reporting production of lead concentrate and zinc concentrate during 2019-20.

Non-Metallic Minerals

The value of production of non-metallic minerals at ₹8,882 crore during 2019-20 decreased by 8.8% as compared to the previous year.

Reporting Mines

Reporting mine is defined as “A mine reporting production or reporting ‘nil’ production during a year but engaged in developmental work such as, overburden removal, underground driving, winzings, sinking work, exploration by pitting, trenching or drilling as evident from the MCDR returns”.

There were 1,303 reporting mines (excluding fuel minerals, atomic fuel and minor minerals) in India located in all States and UTs during 2019-20. Among them, 567 belong to Metallic minerals and 736 to Non-metallic minerals. There were 146 mines in Public Sector and the rest of 1,157 mines were in Private Sector.

Employment

The average daily employment of labour engaged in Mining Sector (excluding fuel minerals,

atomic and minor minerals) was 1,11,946 in 2019-20. Out of this, 35,218 or 31% were in Public Sector and 76,728 or 69% in Private Sector. Metallic minerals accounted for 80% and Non-metallic minerals 20% of the total labour force during the year.

Role of Public Sector

The public sector has played important role in the overall mineral production in 2019-20.

The entire production of bauxite, copper ore & conc., iron ore, manganese ore and tin conc. among metallic minerals and diamond, fluorite, magnesite, phosphorite, selenite and sulphur in respect of non-metallic minerals was reported from the Public Sector. By and large, the entire production of gold (primary) came from Public Sector during 2019-20.

Index of Mineral Production

The index of mineral production (excluding atomic and minor minerals) (with base year 2011-12=100) for 2019-20 at 109.6 displayed a growth of 1.6% as compared to the previous year (Table-3).

Gross Value Added from Mining & Quarrying Sector

The Ministry of Statistics & Programme Implementation has released the new series of national accounts, revising the base year from 2004-05 to 2011-12 in the year 2015. The industry-wise estimates are now presented as Gross Value Added (GVA) at basic prices. Certain changes have been made in this series including for Mining & Quarrying Industry. During 2019-20, Mining and Quarrying Industry accounted for about 2.1 % of the GVA at current prices. The GVA at current and constant prices for the period from 2017-18 to 2019-20 is furnished in Tables-4 & 5.

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**Table - 1 : Mineral* Production in India, 2017-18 to 2019-20
(By Mineral Groups & Minerals)**

(Value ₹'000)

Mineral	Unit	2017-18		2018-19		2019-20 (P)	
		Quantity	Value ^{\$}	Quantity	Value ^{\$}	Quantity	Value ^{\$}
All Minerals			1291943301		1461266117		1508267069
Fuel Minerals							
Coal	'000t	675400	NA	728718	NA	730874	NA
Lignite	'000t	46644	NA	44283	NA	42096	NA
Natural Gas (utilised)	m cu m	32649	NA	32873	NA	31184	NA
Petroleum (crude)	'000t	35684	NA	34203	NA	32169	NA
Metallic Minerals			509755401		642120754		660840240
Bauxite	t	22786106	15784174	23689619	17836033	21823793	15785647
Chromite	t	3480941	32037005	3970691	36850747	3929260	33326588
Copper ore	t	3678002	-	4134702	-	3952418	-
Copper conc.	t	141988	7706612	143668	8846151	124692	8445828
Gold ore	t	549683	-	565653	-	591251	-
Gold	kg	1650	4770022	1664	5241705	1724	6431034
Iron ore	'000t	201426	347131039	206494	453465829	246081	481074096
Lead & Zinc ore	t	12613866	-	13752295	-	14479032	-
Lead conc.	t	306398	11429413	358369	16316914	351271	18072776
Zinc conc.	t	1539657	49799273	1456804	56083827	1446823	60231216
Manganese ore	t	2599815	19907474	2832315	21640165	2904373	19416386
Silver	kg	557691	21179042	679386	25824756	441818	18047107
Tin conc.	kg	16758	11347	21212	14627	15546	9562
Non-Metallic Minerals			88554632		97400700		88817682
Phosphorite	t	1515645	3668267	1421086	3883571	1400186	4319097
Diamond	ct	39699	374110	38437	539062	28816	398070
Fluorite (graded)	t	1314	8646	1079	8117	1315	8769
Garnet (abrasive)	t	158277	1618903	123404	1746756	552 [#]	4734
Graphite (r.o.m.)	t	33649	28229	39030	36233	31991	57506
Iolite	kg	-	-	73	684	90	579
Kyanite	t	7818	23277	4889	15757	3497	11743
Sillimanite	t	81638	671690	69919	564498	13236	36322
Limestone	'000t	340417	80995698	379974	89584491	359332	83120219
Limeshell	t	14765	51445	7534	27780	4600	18730
Magnesite	t	195055	593650	146875	408287	97684	350252
Marl	t	1969796	331289	1890308	349420	2109422	351529
Moulding sand	t	7100	1804	14805	4145	12805	3683
Salt (rock)	t	47	421	17	160	130	1444
Selenite	t	469	939	2906	5812	1167	2353
Siliceous earth	t	86662	53164	80237	50205	13900	10235
Sulphur**	t	825173	-	890400	-	900942	-
Vermiculite	t	6054	7075	2992	3709	2774	3363
Wollastonite	t	153049	126025	184063	172013	124657	119054
Minor Minerals[@]		-	693633268	-	721744663	-	758609147

* Excluding the minerals declared as prescribed substances under the Atomic Energy Act,1962

\$ Excludes the value of fuel minerals

** Obtained as by-product from fertilizer plants and oil refineries

@ Figures for earlier years have been repeated as estimates, wherever necessary, because of non-receipt of data from respective State Governments

Other than BSM (Beach Sand Minerals)

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**Table- 2 : Mineral* Production (Quantity), 2018-19 and 2019-20
(By Sectors)**

Mineral	Unit	All India		Public Sector		Private Sector		Share of Public Sector in Total Production		Overall increase or decrease in production in 2019-20 over 2018-19
		2018-19	2019-20 (P)	2018-19	2019-20 (P)	2018-19	2019-20 (P)	2018-19	2019-20 (P)	
Metallic Minerals										
Bauxite	tonne	23689619	21823793	10911406	10860453	12778213	10963340	46.06	49.76	-7.88
Chromite	tonne	3970691	3929260	1237534	809722	2733157	3119538	31.17	20.61	-1.04
Copper conc.	tonne	143668	124692	143668	124692	-	-	100	100	-13.21
Copper ore	tonne	4134702	3952418	4134702	3952418	-	-	100	100	-4.41
Gold (Total)	kg	1664	1724	1661	1724	3	-	99.82	100	3.61
Gold ore	tonne	565653	591251	563519	591251	2134	-	99.62	100	4.53
Iron ore (Total)	'000 t	206494	246081	71036	74249	135458	171832	34.4	30.17	19.17
Lead & Zinc ore	tonne	13752295	14479032	-	-	13752295	14479032	-	-	5.28
Lead conc.	tonne	358369	351271	-	-	358369	351271	-	-	-1.98
Manganese ore	tonne	2832315	2904373	1287328	1296918	1544987	1607455	45.45	44.65	2.54
Silver	kg	679386	441818	214	187	679172	441631	0.03	0.04	-34.97
Tin conc.	kg	21212	15546	20054	11602	1158	3944	94.54	74.63	-26.71
Zinc conc.	tonne	1456804	1446823	-	-	1456804	1446823	-	-	-0.69
Non-Metallic Minerals										
Diamond	carat	38437	28816	38437	28816	-	-	100	100	-25.03
Flourite Graded	tonne	1079	1315	1079	1315	-	-	100	100	21.87
Garnet (Abrasive)	tonne	123404	552#	45717	-	77687	552	37.05	-	-99.55
Graphite R.O.M.	tonne	39030	31991	-	-	39030	31991	-	-	-18.03
Iolite	kg	73	90	-	-	73	90	-	-	23.29
Kyanite	tonne	4889	3497	1848	862	3041	2635	37.8	24.65	-28.47
Limeshell	tonne	7534	4600	-	0	7534	4600	-	0	-38.94
Limestone	'000 t	379974	359332	10929	10144	369045	349188	2.88	2.82	-5.43
Magnesite	tonne	146875	97684	40861	34957	106014	62727	27.82	35.79	-33.49
Marl	tonne	1890308	2109422	-	-	1890308	2109422	-	-	11.59
Moulding sand	tonne	14805	12805	-	-	14805	12805	-	-	-13.51
Phosphorite	tonne	1421086	1400186	1322486	1300226	98600	99960	93.06	92.86	-1.47
Salt (rock)	tonne	17	130	17	130	-	-	100	100	664.71
Sillimanite	tonne	69919	13236	25305	-	44614	13236	36.19	-	-81.07
Selenite	tonne	2906	1167	2906	1167	-	-	100	100	-59.84
Siliceous earth	tonne	80237	13900	-	-	80237	13900	-	-	-82.68
Sulphur	tonne	890400	900942	890400	900942	-	-	100	100	1.18
Vermiculite	tonne	2992	2774	706	584	2286	2190	23.6	21.05	-7.29
Wollastonite	tonne	184063	124657	-	-	184063	124657	-	-	-32.27

* Excluding Atomic, Fuel and minor minerals
Other than BSM (Beach Sand Minerals)

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**Table - 3 : Index of Mineral Production, 2017-18 to 2019-20
(Excluding Atomic Minerals)**

(Base 2011-12=100)

Year	Index of mineral production (1000)	Coal & lignite (306.854)	Crude petroleum & natural gas (444.318)	Metallic minerals (230.004)	Non-metallic minerals (18.824)
2017-18	104.9	126.7	82.0	119.0	117.4
2018-19	107.9	135.2	80.1	123.5	128.1
2019-20 (P)	109.6	134.6	75.4	141.3	120.9

Note: Figures in parentheses indicate the weights attached to respective groups

**Table - 4 : Gross Value Added at Basic Price, 2017-18 to 2019-20
(At Current Prices) (29.05.2020)**

(in ₹ crore)

Industry	2017-18 (NS)	2018-19 (NS)	2019-20 (PE)	% Change in 2019-20 over the previous year
GVA (All)	1,55,13,122	1,71,39,962	1,83,43,237	7.0
Mining & Quarrying	3,57,788	3,89,322	3,93,102	1.0

Source : CSO NS : New Series Estimates PE : Provisional Estimates

**Table - 5 : Gross Value Added at Basic Price, 2017-18 to 2019-20
(At 2011-12 prices)**

(in ₹ crore)

Industry	2017-18 (NS)	2018-19 (NS)	2019-20 (PE)	% Change in 2019-20 over the previous year
GVA (All)	1,20,74,413	1,28,03,128	1,33,01,120	3.9
Mining & Quarrying	3,66,496	3,45,069	3,55,680	3.1

Source : CSO NS : New Series Estimates PE : Provisional Estimates

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Ferrous Metals

As per the provisional data received from the office of Joint Plant Committee, Kolkata, India produced 102 million tonnes of Finished Steel, 109 million tonnes of Semi-finished Steel, 5.5 million tonnes of Pig iron and 37 million tonnes of Sponge iron in 2019-20.

Production of various items of Iron and Steel (Ferrous Metals) for the last three years is furnished in Table-6.

Ferroalloys

Indian Bureau of Mines collects production figures of ferroalloys from the producing plants in the country on non-statutory basis.

The information on production of ferroalloys was received from 21 operating plants in 2019-20.

The production in respect of ferrochrome, ferromanganese and ferrosilicon was collected from Joint Plant Committee, Kolkata. As such the production data presented here relates to the extent received and may not reflect the entire production of ferroalloys in the country. Production of ferroalloys for the years 2017-18 to 2019-20, to the extent received (including partly estimated due to non-receipt of data), is presented in Table - 7.

Non-Ferrous Metals

The production of aluminium at 3,635 thousand tonnes in 2019-20 registered a slight decrease of 2% as compared to that in previous year.

Smelting and refining of copper is carried out by Hindustan Copper Ltd in their existing plants located at Ghatshila (Bihar) and Raigad (Chhattisgarh). Copper metal is also produced from imported copper concentrates at the plant of

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Table – 6: Production of Ferrous Metals, 2017-18 to 2019-20

	(In '000 tonnes)		
Ferrous Metal	2017-18	2018-19	2019-20 (P)
Finished steel (including C.R. sheets)	112783	131573	102058
Semi-finished steel (including steel ingots)	38357	106565	109216
Pig iron	9405	6055	5508
Sponge iron	16729	27131	37141

*Source: Office of Joint Plant Committee, Kolkata
Mining & Mineral Statistics Division, Indian Bureau of Mines, Nagpur*

Table – 7: Production of Ferro-alloys, 2017-18 to 2019-20

Ferro-alloys	Unit	2017-18	2018-19	2019-20 (P)
Ferrochrome	tonne	944000	944000	921000
Ferromanganese	tonne	518000	518000	NA
Ferrosilicon	tonne	90000	90000	NA
Ferroboron	kg	NA	NA	NA
Ferromolybdenum	kg	1204702	1003265	527359
Ferroniobium	kg	NA	NA	NA
Ferrotitanium	kg	280881	118137	120762
Ferrovandium	kg	1331000	1013000	664541
Ferroaluminium	kg	4422572	2751827	1461388
Magnesium Ferrosilicon	tonne	15978	19180	13930
Silicomanganese	tonne	311326	345291	320594

*Note: 1. Figures for the latest available month have been repeated as estimates, wherever necessary, due to non receipt of data.
2. Figures in respect Iron & Steel items as well as Ferrochrome, Ferromanganese and Ferrosilicon have been received from JPC Kolkata
NA : Not available*

Vendanta Ltd (formerly Sterlite Industries (India) Ltd) and Hindalco Industries Ltd. The production of copper blister at 3,997 tonnes in 2019-20 decreased drastically by 70% as compared to that in the previous year. The production of copper cathodes at 4,08,003 tonnes in 2019-20 decreased by 10% as compared to that in the previous year. The production of copper continuous cast wire rods at 3,49,475 tonnes in 2019-20 decreased by 1% as compared to that in the previous year.

The production of lead (primary) at 1,32,316 tonnes in 2019-20 decreased substantially by 33% as compared to that in the previous year. No production of lead (secondary) was reported since last ten years. The production of zinc ingots in 2019-20 was 5,16,316 tonnes as against 6,96,283 tonnes in the previous year showing a decrease of 26% (Table-8).

Precious Metals

Gold primary is produced from gold ore by HGML in the State of Karnataka. Gold is also recovered as by-product from copper slime of Hindalco Industries Ltd in Gujarat. The total production of gold bullion during the year 2019-20 at 8,364 kg decreased by 34% as compared to 12,614 kg in the previous year.

Production of silver in India is reported as a by-product from lead and zinc concentrates and copper slime and as a co-product of gold refining.

The production of silver at 5,04,858 kg (504.86 tonnes) registered a decrease of 33% as compared to that in the previous year.

Other Metals

Production of cadmium is reported as a by-product of zinc smelting and was nil in 2019-20.

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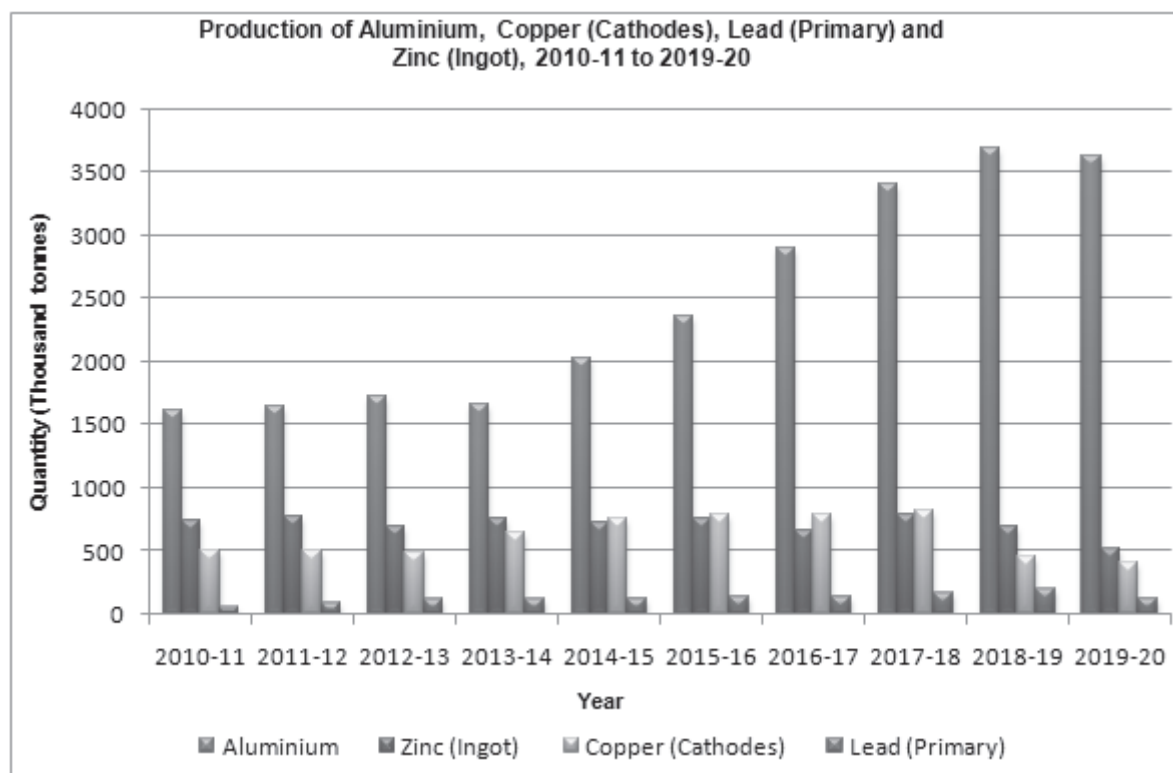


Table – 8: Production and Value of Non-Ferrous Metals, 2017-18 to 2019-20

(Quantity in tonnes; Value in ₹'000)

Metal	Unit of quantity	2017-18		2018-19		2019-20 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value
Aluminium	tonnes	3400618	430308076	369681	528227924	3635089	455960160
Cadmium	tonnes	47	5685	-	-	-	-
Copper (blister)	tonnes	14611	NA	13293	NA	3997	NA
Copper (cathode)	tonnes	830524	342132570	454337	207019308	408003	176011710
Copper (continuous cast wire rod)	tonnes	380489	160838279	354146	165324812	349475	155090811
Gold	kg	12500	36018065	12614	34395900	8364	31218734
Lead (primary)	tonnes	168245	28487471	197839	33814419	132316	21429039
Silver	kg	627837	23833931	750928	28558056	504858	20698507
Tin	kg	13741	15459	7436	8918	6063	7361
Zinc ingot	tonnes	791461	169157981	696283	153894301	516316	105428610

Source: Data for metals and alloys are obtained from individual producers/Units