

PRODUCTION



Indian Minerals Yearbook 2021

(Part- I : GENERAL REVIEWS)

60th Edition

PRODUCTION

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GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

Indira Bhavan, Civil Lines,
NAGPUR – 440 001

PHONE/FAX NO. (0712) 2565471
PBX : (0712) 2562649, 2560544, 2560648
E-MAIL : cme@ibm.gov.in
Website: www.ibm.gov.in

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MINERALS

The mineral production (excluding Atomic Minerals and Minor Minerals) in India decreased by 7.8% (as per index of mineral production base year 2011-12) during 2020-21 as compared to the previous year due to decrease in the production of coal, lignite, natural gas and petroleum among Fuel minerals; bauxite, chromite, gold, iron ore and manganese ore among Metallic minerals; and diamond fluorite, limestone, magnesite, vermiculite and wollastonite among Non-metallic minerals. The decrease in production could be attributed to the countrywide lockdown during the first quarter of the financial year.

Fuel Minerals

The production of coal at 716 million tonnes during 2020-21 decreased slightly by about 2% as compared to 731 million tonnes in the previous year. The production of lignite at 38 million tonnes during 2020-21 decreased by about 10% as compared to that of the previous year. The production of petroleum (crude) at 30 million tonnes decreased by 5% whereas production of natural gas at 28,673 m.cu.m decreased by 8% as compared to that of the previous year.

Offshore regions remain the largest producing area and contributed 49.63% of total production of petroleum (crude) followed by Rajasthan (20%), Gujarat (15%) and Assam (13%). The remaining 2.4% was contributed by a few other States. 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 2020-21 at ₹69,535 crore increased by about 1.8% over that of the previous year mainly due to higher production reported in lead concentrate zinc concentrate, tin concentrate and silver. Among the principal metallic minerals, iron ore contributed ₹

49,396 crore or 71%, lead (concentrate) & zinc (concentrate) together ₹ 8,709 crore or 13%, silver ₹ 4,266 crore or 6%, chromite ₹ 2,291 crore or about 3%, manganese ore ₹ 1,942 crore or about 3%, bauxite ₹ 1,667 crore or 2.4% and the remaining value was from copper (concentrates), gold, and tin concentrates in the total value of metallic minerals.

The production of **iron ore** at about 204 million tonnes in 2020-21 decreased by 16% over that of the previous year. Production of iron ore was mainly from Odisha (54.44%), Chhattisgarh (22%), Karnataka (13%), and Jharkhand (9%) during the year. The remaining 4.56% production was reported from Andhra Pradesh, Goa, Madhya Pradesh, Maharashtra, Telangana and Rajasthan.

The production of **chromite** at 2.86 million tonnes in 2020-21 decreased by 27% as compared to the previous year. Odisha reported almost entire output of chromite in the country. The production of **copper ore** at 3.37 million tonnes was 15% lower, while that of **copper concentrate** at 109 thousand tonnes in 2020-21 decreased by 13% as compared to the previous year. The average metal content in copper conc. was 23.2% Cu. The production of **manganese ore** at 2.69 million tonnes in 2020-21 decreased by 7.6% as compared to that in the previous year. Of the total production of manganese ore in 2020-21, Madhya Pradesh continued to be the largest producer by contributing 34%, followed by Maharashtra (24%) and Odisha (18%). The remaining production was reported by Andhra Pradesh, Karnataka Jharkhand, Rajasthan, Gujarat and Telangana.

The production of **gold** at 1,126 kg (excluding gold recovery from imported concentrates) in 2019-20 decreased by 35% as compared to the previous year. Karnataka was the leading producer of gold accounting for almost 99% output followed by Jharkhand (1%). The production of **bauxite** at 20.37 million tonnes in 2020-21 decreased by 7% as compared to the previous year. During the year under review, Odisha accounted for 76% of the total output followed

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by Gujarat and Jharkhand (7% each). The remaining production was reported from Chhattisgarh, Maharashtra, Madhya Pradesh and Tamil Nadu. During 2020-21, the production of **lead concentrate** at 377 thousand tonnes increased by 7% and that of **zinc concentrate** at 1,514 thousand tonnes increased by 5% over the previous year. Average metal content produced in lead concentrate was 57.38% Pb and in zinc concentrate it was 49.94% Zn. Rajasthan was the only State reporting production of lead concentrate and zinc concentrate during 2020-21.

Non-Metallic Minerals

The value of production of non-metallic minerals at ₹8,926 crore during 2020-21 decreased by 6% 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 1,323 reporting mines (excluding fuel minerals, atomic fuel and minor minerals) in India located in all States and UTs during 2020-21. Among them, 589 belong to metallic minerals and 734 to Non-metallic minerals. There were 156 mines in Public Sector and the rest of 1,167 mines were in Private Sector.

Employment

The average daily employment of labour engaged in Mining Sector (excluding fuel minerals, atomic and minor minerals) was 99,335 in 2020-21. Out of this, 33,373 or 34% were in Public Sector and 65,962 or 66% in Private Sector. Metallic minerals accounted for 79%

and Non-metallic minerals 21% of the total labour force during the year.

Role of Public Sector

The Public Sector has played significant role in the overall mineral production in 2020-21.

The entire production of bauxite, copper ore & conc., among metallic minerals and diamond, fluorite, Salt(rock) & selenite in respect of non-metallic minerals was reported from the Public Sector. By and large, the entire production of gold (primary) and phosphorite came from Public Sector during 2020-21. More than 50% of the production of bauxite and tin concentrate was in the Public Sector during this year.

Index of Mineral Production

The index of mineral production (excluding atomic and minor minerals) (with base year 2011-12=100) for 2020-21 at 101 displayed a decrease of 7.8% 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 2020-21, Mining and Quarrying Industry accounted for about 1.6 % of the GVA at current prices. The GVA at current and constant prices for the period from 2018-19 to 2020-21 is furnished in Tables-4 & 5.

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**Table - 1 : Mineral* Production in India, 2018-19 to 2020-21
(By Mineral Groups & Minerals)**

(Value ₹'000)

Mineral	Unit	2018-19		2019-20		2020-21(P)	
		Quantity	Value [§]	Quantity	Value [§]	Quantity	Value [§]
All Minerals			1491139500		1658778489		157570772
Fuel Minerals							
Coal	'000t	728718	NA	730874	NA	716083	NA
Lignite	'000t	44283	NA	42096	NA	37895	NA
Natural Gas (utilised)	m.cu.m	32873	NA	31184	NA	28673	NA
Petroleum (crude)	'000t	34203	NA	32170	NA	30494	NA
Metallic Minerals			642146745		682983311		695348920
Bauxite	t	23689619	17836033	21825227	16299333	20368665	16667101
Chromite	t	3970691	36850747	3929260	32134395	2863869	22910242
Copper conc.	t	143668	8846151	124586	8448405	108719	8633968
Copper ore	t	4134702	-	3952472	-	3377850	-
Gold	kg	1672	5267696	1742	6495723	1126	5475950
Gold ore	t	567291	-	595511	-	450611	-
Iron ore	'000t	206494	453465829	244083	496430578	204481	493959913
Lead & Zinc ore	t	13452295	-	14479032	-	15455343	-
Lead conc.	t	358369	16316914	351746	18260832	376924	20416324
Manganese ore	t	2832315	21640165	2910186	18849100	2688038	17942596
Silver	kg	679386	25824756	609340	25616104	705796	42664424
Tin conc.	kg	21212	14627	15530	10337	16865	9413
Zinc conc.	t	1456804	56083827	1446824	60438504	1513996	66668989
Non-Metallic Minerals			97400700		95038914		89262540
Diamond	ct	38437	539062	28816	352472	13917	220304
Fluorite (graded)	t	1079	8117	1315	8844	1052	7897
Garnet (abrasive)	t	1234040	746756	568	1775	9307	33585
Graphite (r.o.m.)	t	39030	36233	34674	55908	30168	60054
Iolite	kg	73	684	90	579	16	73
Kyanite	t	4889	15757	3498	12728	4925	10837
Limeshell	t	7534	27780	4600	18730	-	-
Limestone	'000t	379974	89584491	359464	88890081	349170	82659807
Magnesite	t	146875	408287	102554	351947	78144	292653
Marl	t	1890308	349420	2148854	412463	2202331	379778
Moulding sand	t	1421086	3883571	1400189	4731313	1455627	5441988
Phosphorite	t	1421086	3883571	1400189	4731313	1455627	5441988
Salt (rock)	t	17	160	130	1447	486	14239
Selenite	t	2906	5812	2154	4206	202	402
Siliceous earth	t	80237	50205	19367	11710	18429	12184
Sillimanite	t	69919	564498	13221	37903	11110	26611
Sulphur**	t	890400	-	900942	-	737337	-
Vermiculite	t	2992	3709	2774	3347	1260	2157
Wollastonite	t	184063	172013	124757	139695	103902	96552
Minor Minerals[@]		-	751592055	-	880756264	-	791096242

* 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), 2019-20 and 2020-21
(By Sectors)**

Mineral	Unit	All India		Public Sector		Private Sector		Share of Public Sector in Total Production		Overall increase or decrease in production in 2020-21 over 2019-20
		2019-20	2020-21 (P)	2019-20	2020-21 (P)	2019-20	2020-21 (P)	2019-20	2020-21 (P)	
Metallic Minerals										
Bauxite	tonne	21825227	20368665	10859654	10674620	10965573	9694045	49.76	52.41	-6.67
Chromite	tonne	39292260	2863869	809723	1123742	3119537	1740127	20.61	39.24	-27.11
Copper conc.	tonne	124586	108719	124586	108719	-	-	100.00	100.00	-12.74
Copper ore	tonne	3952472	3377850	3952472	3377850	-	-	100.00	100.00	-14.54
Gold (Total)	kg	1742	1126	1724	1115	18	11	98.97	99.02	-35.36
Gold ore	tonne	595511	450611	590704	447752	4807	2859	99.19	99.37	-24.33
Iron ore (Total)	'000 t	244083	204481	70879	76058	173204	128423	29.04	37.20	-16.22
Lead & Zinc ore	tonne	14479032	15455343	-	-	14479032	15455343	0.00	0.00	6.74
Lead conc.	tonne	351746	376924	-	-	351746	376924	0.00	0.00	7.16
Manganese ore	tonne	2910186	2688038	1295916	1152549	1614270	1535489	44.53	42.88	-7.63
Silver	kg	609340	705796	187	120	609153	705676	0.03	0.02	15.83
Tin conc.	kg	15530	16865	1603	13859	3927	3006	74.71	82.18	8.60
Zinc conc.	tonne	1446824	1513996	-	-	1446824	1513996	-	-	4.64
Non-Metallic Minerals*										
Diamond	carat	28816	13917	28816	13917	-	-	100.00	100.00	-51.70
Flourite Graded	tonne	1315	1052	1315	1052	-	-	100.00	100.00	-20.00
Garnet (Abrasive)	tonne	568	9307	-	-	568	9307	-	-	1538.56
Graphite R.O.M.	tonne	34674	30168	-	10026	34674	20142	-	33.23	-13.00
lollite	kg	90	16	-	-	90	16	-	-	-82.22
Kyanite	tonne	3498	4925	863	540	2635	4385	24.67	10.96	40.79
Limeshell	tonne	4600	-	-	-	4600	-	-	-	-100.00
Limestone	'000 t	359464	349170	10144	8641	349320	340529	2.82	2.47	-2.86
Magnesite	tonne	102554	78144	34956	30620	67598	47524	34.09	39.18	-23.80
Marl	tonne	2148854	2202331	-	-	2148854	2202331	-	-	2.49
Moulding sand	tonne	12905	11737	-	-	12905	11737	-	-	-9.05
Phosphorite	tonne	1400189	1455627	1300229	1357747	99960	97880	92.86	93.28	3.96
Salt (rock)	tonne	130	486	130	486	-	-	100.00	100.00	273.85
Selenite	tonne	2154	202	2154	202	-	-	100.00	100.00	-90.62
Siliceous earth	tonne	19367	18429	-	-	19367	18429	-	-	-4.84
Sillimanite	tonne	13221	11110	-	-	13221	11110	-	-	-15.97
Sulphur**	tonne	900942	737337	900942	737337	-	-	100.00	100.00	-18.16
Vermiculite	tonne	2774	1260	584	510	2190	750	21.05	40.48	-54.58
Wollastonite	tonne	124757	103902	-	-	124757	103902	-	-	-16.72

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

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**Table - 3 : Index of Mineral Production, 2018-19 to 2020-21
(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)
2018-19	107.9	135.2	80.1	123.5	128.1
2019-20	109.6	134.6	75.4	141.3	120.9
2020-21(p)	101.0	131.4	70.7	117.7	117.4

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

Table - 4 : Gross Value Added at Basic Price, 2018-19 to 2020-21

(At current prices) (31.05.2021) (in ₹ crore)

Industry	2018-19 (NS)	2019-20 (NS)	2020-21 (PE)	% Change in 2020-21 over the previous year
GVA (All)	1,716,1213	1,846,1,343	1,79,15,167	-3.0
Mining & Quarrying	3,77,171	3,55,833	2,92,120	-17.9

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

**Table - 5 : Gross Value Added at Basic Price, 2018-19 to 2020-21
(At 2011-12 prices)**

(in ₹ crore)

Industry	2018-19 (NS)	2019-20 (NS)	2020-21 (PE)	% Change in 2020-21 over the previous year
GVA (All)	1,27,44,203	1,32,71,471	1,24,53,430	-6.2
Mining & Quarrying	3,30,521	3,22,116	2,94,644	-8.5

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 95 million tonnes of Finished Steel, 103 million tonnes of Semi-finished Steel, 4.8 million tonnes of Pig iron and 34 million tonnes of Sponge Iron in 2020-21.

Production of various items of Iron & 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 2020-21.

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 2018-19 to 2020-21, 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 3,619 thousand tonnes in 2020-21 registered a slight decrease of 0.4% 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 (Jharkhand) and Raigad (Chhattisgarh). Copper metal is also produced from

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Table – 6: Production of Ferrous Metals, 2018-19 to 2020-21

	(In '000 tonnes)		
Ferrous Metal	2018-19	2019-20	2020-21 (P)
Finished steel (including C.R. sheets)	131573	102058	95122
Semi-finished steel (including steel ingots)	106565	109216	103045
Pig iron	6055	5508	4840
Sponge iron	27131	37141	34155

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

Table – 7: Production of Ferroalloys, 2018-19 to 2020-21

Ferroalloys	Unit	2018-19	2019-20	2020-21 (P)
Ferrochrome	tonne	944000	921000	868000
Ferromanganese	tonne	518000	NA	NA
Ferrosilicon	tonne	90000	NA	NA
Ferroboron	kg	NA	NA	NA
Ferromolybdenum	kg	1003265	527359	428210
Ferroniobium	kg	NA	NA	NA
Ferrotitanium	kg	118137	120762	249162
Ferrovandium	kg	1013000	664541	634160
Ferroaluminium	kg	2751827	1461388	1119259
Magnesium Ferrosilicon	tonne	19180	13930	10220
Silicomanganese	tonne	345290	320593	329295

*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*

imported copper concentrates at the plant of Vendanta Ltd [formerly Sterlite Industries (India) Ltd] and Hindalco Industries Ltd. There was nil production of copper blister in 2020-21 which decreased by 100% as compared to that in the previous year. The production of copper cathodes at 3,63,609 tonnes in 2020-21 decreased by 11% as compared to that in the previous year. The production of copper continuous cast wire rods at 3,41,563 tonnes in 2020-21 decreased by 2% as compared to that in the previous year.

The production of lead (primary) at 2,14,399 tonnes in 2020-21 increased by 18% 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 2020-21 was 7,15,445 tonnes which showed an increase of 4% from that of previous year (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 2020-21 at 7,387 kg decreased by 12% as compared to 8,364 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 7,46,377 kg (746.377 tonnes) registered a decrease of 11% 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 2020-21.

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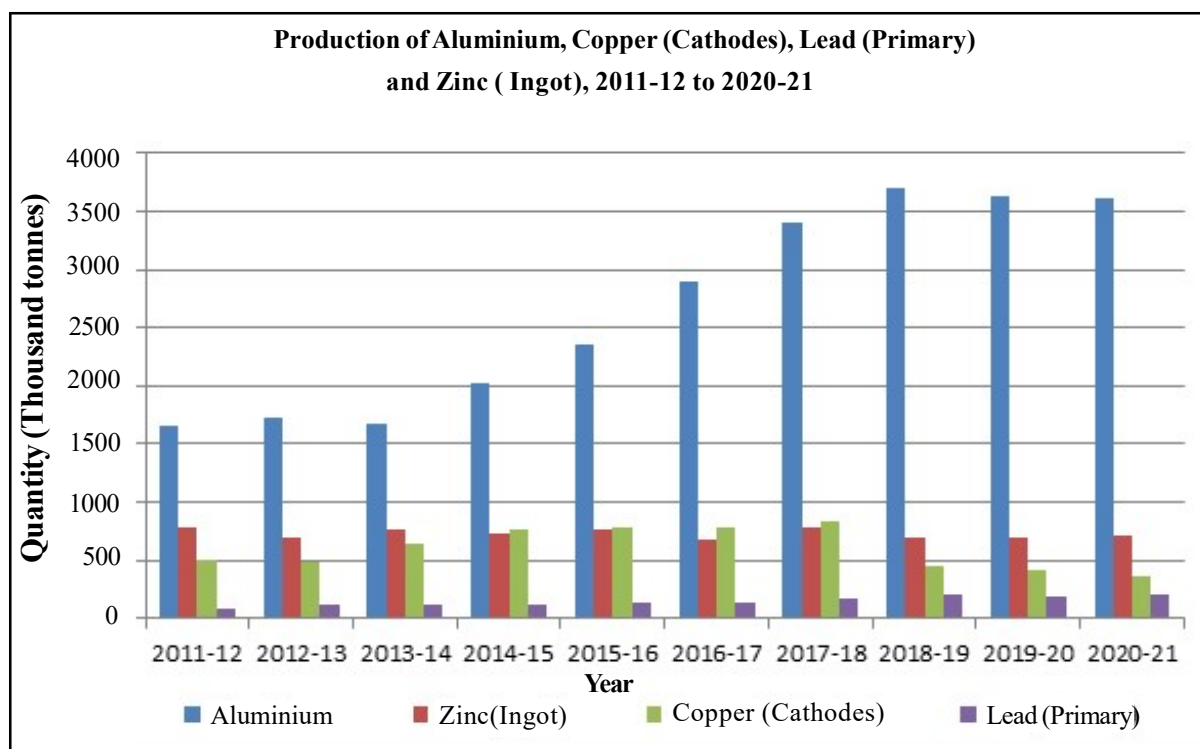


Table – 8: Production and Value of Non-Ferrous Metals, 2018-19 to 2020-21

(Quantity in tonnes; Value in ₹'000)

Metal	Unit of quantity	2018-19		2019-20		2020-21 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value
Aluminium	tonnes	3696181	528227924	3635089	45960160	3619237	415967702
Cadmium	tonnes	-	-	-	-	-	-
Copper (blister)	tonnes	13293	NA	3997	NA	-	NA
Copper (cathode)	tonnes	454337	207019308	408003	176011710	363609	190616200
Copper (continuous cast wire rod)	tonnes	354146	165324812	349475	155090811	341563	188445400
Gold	kg	12623	39663595	8364	31283423	7387	35814249
Lead (primary)	tonnes	197839	33814419	181365	29111241	214399	34531700
Silver	kg	750928	28558056	672380	28267504	746377	45207924
Tin	kg	7436	8918	6063	7361	4337	5400
Zinc ingot	tonnes	696283	153894301	688282	137840297	715445	147976396

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