

PRODUCTION



Indian Minerals Yearbook 2022

(Part- I : GENERAL REVIEWS)

61th Edition

PRODUCTION

(ADVANCE RELEASE)

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

March, 2024

8 Production

MINERALS

The mineral production (excluding atomic minerals and Minor Minerals) in India increased by 12.2% (as per index of mineral production base year 2011-12) during 2021-22 as compared to the previous year due to increase in the production of Raw Coal, Lignite and Natural gas among fuel minerals; Bauxite, Chromite, Gold, Iron Ore, Zinc Conc. etc. among metallic minerals and Fluorite (graded), Graphite, Kyanite, Limestone, Magnesite, Selenite, Vermiculite and Wollastonite, etc. among non-metallic minerals.

Fuel Minerals

The production of coal at 778 million tonnes during 2021-22 increased by about 8.7% as compared to the previous year. The production of Lignite at 47 million tonnes during 2021-22 increased by about 25.3% as compared to the previous year. The production of petroleum (crude) at 29.7 million tonnes decreased by 2.6% whereas as production of natural gas at 34,024 m.cu.m increased by 18.7% as compared to that of the previous year.

Offshore regions remain the largest producing area and contributed 49% of total production of petroleum (crude oil) followed by Rajasthan (20%), Gujarat (16%) and Assam (13%). The remaining 2% was contributed by Tamil Nadu., Andhra Pradesh, Arunachal Pradesh and Tripura. Offshore region, the largest source for natural gas in the country accounted for 67% of the total production, while Assam contributed 10 per cent. The remaining was contributed by a few other States (Table-1).

Metallic Minerals

The value of production of metallic minerals in 2021-22 at ₹1,22,142 crores increased by about 69.2% over that of the previous year mainly due to higher production reported for iron ore, zinc concentrate, chromite, silver and bauxite. Among the principal metallic minerals, iron ore contributed ₹96,381 crore or 79%, zinc (concentrate) ₹8,182 crore or 7%, chromite ₹4,730 crore or about 4%, silver ₹4,212 crore or 3%, bauxite ₹2,477 crore or

about 2%, Lead Conc. ₹2,237 crore or about 2%, manganese ore ₹2,224 crore or about 2% 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 254 million tonnes in 2021-22 increased by 24% over that of the previous year. Production of iron ore was mainly from Odisha (53.8%), Chhattisgarh (16.3%), Karnataka (15.9%), and Jharkhand (9.7%) during the year. The remaining 4.3% production was reported from Andhra Pradesh, Goa, Madhya Pradesh, Maharashtra and Rajasthan.

The production of **chromite** at 3.786 million tonnes in 2021-22 increased by 34% as compared to the previous year. Odisha reported almost entire output of chromite in the country. The production of **copper ore** at 3.57 million tonnes was 9% up, while that of **copper concentrate** at 114 thousand tonnes in 2021-22 increased by 5% as compared to the previous year. The average metal content in the concentrate produced works out to 23.13% Cu in 2021-22 as against 23.12% Cu in the previous year. The production of **manganese ore** at 2.69 million tonnes in 2021-22 decreased nominally as compared to that in the previous year. Of the total production of manganese ore in 2021-22, Madhya Pradesh continued to be the largest producer by contributing 32%, followed by Maharashtra (27%), Odisha (19%) and Karnataka (14%). The remaining production was reported by Andhra Pradesh, Rajasthan and Telangana.

Production of primary gold in 2021-22 at 1,251 kg increased by 11% as compared to that in the previous year. Karnataka was the leading producer of gold accounting for 99% of the total production. The remaining production was reported from Jharkhand. The production of **bauxite** at 22.49 million tonnes in 2021-22 increased by 10% as compared to the previous year. Odisha with 73% contribution was the leading producer of bauxite followed by Gujarat (9%), Jharkhand (8%), Chhattisgarh(4%),

PRODUCTION

Maharashtra (2.8%) and Madhya Pradesh (2.7%). The production of **lead concentrate** at 368 thousand tonnes decreased by 2.4% and that of **zinc concentrate** at 1,594 thousand tonnes increased by 5% over the previous year. Rajasthan was the only State reporting production of lead concentrate and zinc concentrate during 2021-22. The lead concentrates produced in Rajasthan during 2021-22 was of grade 58.76% Pb as against 57.11% Pb in previous year. Metal content of zinc concentrates produced in Rajasthan worked out to 50.16% Zn in 2021-22 as against 50.07% Zn in the previous year (Table-1).

Non-Metallic Minerals

The value of production of non-metallic minerals at ₹10,606 crore during 2021-22 increased by 14.8% as compared to the previous year (Table-1).

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 1,311 reporting mines (excluding fuel minerals, atomic fuel and minor minerals) in India located in all states and UTs during 2021-22. Among them, 545 belong to metallic minerals and 766 to non-metallic minerals. There were 157 mines in public sector and the rest of 1154 mines were in private sector.

Employment

The average daily employment of labour engaged in mining sector (excluding fuel minerals, atomic and minor minerals) was 1,09,304 in 2021-22. Out of this, 36,080 or 33 % were in public

sector and 73,224 or 67 % 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 significant role in the overall mineral production in 2021-22.

The entire production of Copper Ore & Conc., among metallic mineral and Diamond, Fluorite, Salt (Rock) and Selenite in respect of non-metallic minerals was reported from the public sector. By and large, the entire production of Gold, Tin Conc. and Phosphorite came from public sector during 2021-22 (Table-2).

Index of Mineral Production

The index of mineral production (excluding atomic and minor minerals) (with base year 2011-12=100) for 2021-22 at 113.3 has increased 12.2 % as compared to the previous year (Table-3).

Gross Value Added from Mining & Quarrying Sector

The Ministry of Statistics & Programme Implementation has released the provisional estimates of national income, 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 2021-22 Mining and Quarrying industry accounted for about 2.4 % of the GVA at current prices. The GVA at current and constant prices for the period from 2019-20 to 2021-22 is furnished in Tables-4 & 5.

PRODUCTION

**Table - 1 : Mineral* Production in India, 2019-20 to 2021-22
(By Mineral Groups & Minerals)**

(Value ₹ '000)

| Mineral | Unit | 2019-20 | | 2020-21 | | 2021-22(P) | |
|------------------------------|-------|----------|--------------------|----------|--------------------|------------|--------------------|
| | | Quantity | Value [§] | Quantity | Value [§] | Quantity | Value [§] |
| All Minerals | | | 1653255998 | | 1588690573 | | 2020953828 |
| Fuel Minerals | | | | | | | |
| Coal | '000t | 730874 | n.a | 716083 | n.a | 778210 | n.a |
| Lignite | '000t | 42096 | n.a | 37895 | n.a | 47492 | n.a |
| Natural Gas (ut.) | m c m | 31184 | n.a | 28673 | n.a | 34024 | n.a |
| Petroleum(crude) | '000t | 32170 | n.a | 30494 | n.a | 29691 | n.a |
| Metallic Minerals | | | 682983311 | | 721985419 | | 1221419286 |
| Bauxite | t | 21825227 | 16299333 | 20380548 | 16793448 | 22493947 | 24767048 |
| Chromite | t | 3929260 | 32134395 | 2830413 | 21862796 | 3785625 | 47298073 |
| Copper Conc. | t | 124586 | 8448405 | 108718 | 8533354 | 114421 | 10951112 |
| Copper Ore | t | 3952472 | - | 3272915 | - | 3569632 | - |
| Gold | kg | 1742 | 6495723 | 1127 | 5475470 | 1251 | 6011677 |
| Gold Ore | t | 595511 | - | 437669 | - | 491160 | - |
| Iron Ore | '000t | 244083 | 496430578 | 205041 | 527292469 | 253973 | 963813280 |
| Lead & Zinc Ore | t | 14479032 | - | 15455342 | - | 16338461 | - |
| Lead Conc. | t | 351746 | 18260832 | 376923 | 18810483 | 368040 | 22366174 |
| Manganese Ore | t | 2910186 | 18849100 | 2703313 | 17415461 | 2695991 | 22240539 |
| Silver | kg | 609340 | 25616104 | 705796 | 42664424 | 647140 | 42123586 |
| Tin Conc. | kg | 15530 | 10337 | 16865 | 10413 | 26292 | 31979 |
| Zinc Conc. | t | 1446824 | 60438504 | 1513996 | 63127101 | 1594086 | 81815818 |
| Non-Metallic Minerals | | | 95038914 | | 92361844 | | 106057078 |
| Diamond | crt | 28816 | 352472 | 13917 | 147696 | 266 | 18051 |
| Fluorite(graded) | t | 1315 | 8844 | 1052 | 8018 | 1237 | 8831 |
| Garnet (abrasive) # | t | 568 | 1775 | 7114 | 26378 | 8182 | 29880 |
| Graphite (r.o.m.) | t | 34674 | 55908 | 35386 | 87147 | 57264 | 95192 |
| Iolite | kg | 90 | 579 | 16 | 73 | 27 | 191 |
| Kyanite | t | 3498 | 12728 | 4925 | 9251 | 9432 | 17578 |
| Limeshell | t | 4600 | 18730 | - | - | 100 | 220 |
| Limestone | '000t | 359464 | 88890081 | 349120 | 86484948 | 392760 | 97349550 |
| Magnesite | t | 102554 | 351947 | 74661 | 314676 | 113495 | 450169 |
| Marl | t | 2148854 | 412463 | 2216414 | 417184 | 1853481 | 326498 |
| Moulding Sand | t | 12905 | 3766 | 14363 | 4150 | 16843 | 5080 |
| Phosphorite | t | 1400189 | 4731313 | 1455829 | 4694525 | 1395079 | 7616476 |
| Salt (rock) | t | 130 | 1447 | 486 | 14156 | 286 | 6125 |
| Selenite | t | 2154 | 4206 | 402 | 602 | 756 | 1022 |
| Siliceous Earth | y | 19367 | 11710 | 23823 | 14686 | 31783 | 21209 |
| Sillimanite | t | 13221 | 37903 | 11110 | 13987 | 3432 | 7973 |
| Sulphur ** | t | 900942 | - | 737337 | - | 880858 | - |
| Vermiculite | t | 2774 | 3347 | 1260 | 2157 | 3061 | 3768 |
| Wollastonite | t | 124757 | 139695 | 103902 | 122210 | 108383 | 99265 |
| Minor Minerals @ | | | 875233773 | | 774343310 | | 693477464 |

* 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. The coverage relates to PSUs only

@ : Figures for earlier year(s) have been repeated as estimates, wherever necessary, because of non-receipt of data from respective state governments.

Other than BSM (Beach Sand Minerals)

PRODUCTION

**Table - 2 : Mineral* Production (Quantity), 2020-21 and 2021-22
(By Sectors)**

| Mineral | Unit | All India | | | Public Sector | | Private Sector | | Share of Public Sector in Total Production | | Overall increase or decrease in production in 2021-22 over 2020-21 |
|-------------------------------|--------|-----------|-------------|----------|---------------|----------|----------------|---------|--|--------|--|
| | | 2020-21 | 2021-22 (P) | 2020-21 | 2021-22 (P) | 2020-21 | 2021-22 (P) | 2020-21 | 2021-22 (P) | | |
| Metallic Minerals | | | | | | | | | | | |
| Bauxite | tonne | 20380548 | 22493947 | 10675623 | 11066084 | 9704925 | 11427863 | 52.38 | 49.20 | 10.37 | |
| Chromite | tonne | 2830413 | 3785625 | 1123742 | 1163755 | 1706671 | 2621870 | 39.70 | 30.74 | 33.75 | |
| Copper conc. | tonne | 108718 | 114421 | 108718 | 114421 | - | - | 100 | 100 | 5.24 | |
| Copper ore | tonne | 3272915 | 3569632 | 3272915 | 3569632 | - | - | 100 | 100 | 9.07 | |
| Gold | kg | 1127 | 1251 | 1116 | 1239 | 11 | 12 | 99.02 | 99.04 | 11.00 | |
| Gold ore | tonne | 437669 | 491160 | 434810 | 486629 | 2859 | 4531 | 99.35 | 99.08 | 12.22 | |
| Iron ore | '000 t | 205041 | 253973 | 75884 | 99809 | 129157 | 154164 | 37.01 | 39.30 | 23.86 | |
| Lead & Zinc ore | tonne | 15455342 | 16338461 | - | - | 15455342 | 16338461 | - | - | 5.71 | |
| Lead conc. | tonne | 376923 | 368040 | - | - | 376923 | 368040 | - | - | -2.36 | |
| Manganese ore | tonne | 2703313 | 2695991 | 1152550 | 1238814 | 1550763 | 1457177 | 42.63 | 45.95 | -0.27 | |
| Silver | kg | 705796 | 647140 | 120 | 127 | 705676 | 647013 | 0.02 | 0.02 | -8.31 | |
| Tin conc. | kg | 16865 | 26292 | 13859 | 24813 | 3006 | 1479 | 82.18 | 94.39 | 55.90 | |
| Zinc conc. | tonne | 1513996 | 1594086 | - | - | 1513996 | 1594086 | - | - | 5.29 | |
| Non-Metallic Minerals* | | | | | | | | | | | |
| Diamond | carat | 13917 | 266 | 13917 | 266 | - | - | 100 | 100 | -98.09 | |
| Flourite Graded | tonne | 1052 | 1237 | 1052 | 1237 | - | - | 100 | 100 | 17.59 | |
| Garnet (Abrasive)# | tonne | 7114 | 8182 | - | - | 7114 | 8182 | - | - | 15.01 | |
| Graphite R.O.M. | tonne | 35386 | 57264 | 10026 | 36214 | 25360 | 21050 | 28.33 | 63.24 | 61.83 | |
| Iolite | kg | 16 | 27 | - | - | 16 | 27 | - | - | 68.75 | |
| Kyanite | tonne | 4925 | 9432 | 540 | 4357 | 4385 | 5075 | 10.96 | 46.19 | 91.51 | |
| Limeshell | tonne | - | 100 | - | - | - | 100 | - | - | - | |
| Limestone | '000 t | 349120 | 392760 | 8668 | 11271 | 340452 | 381489 | 2.48 | 2.87 | 12.50 | |
| Magnesite | tonne | 74661 | 113495 | 30621 | 61322 | 44040 | 52173 | 41.01 | 54.03 | 52.01 | |
| Marl | tonne | 2216414 | 1853481 | - | - | 2216414 | 1853481 | - | - | -16.37 | |
| Moulding sand | tonne | 14363 | 16843 | - | - | 14363 | 16843 | - | - | 17.27 | |
| Phosphorite | tonne | 1455829 | 1395079 | 1357949 | 1295549 | 97880 | 99530 | 93.28 | 92.87 | -4.17 | |
| Salt (rock) | tonne | 486 | 286 | 486 | 286 | - | - | 100 | 100 | -41.15 | |
| Selenite | tonne | 402 | 756 | 402 | 686 | - | 70 | 100 | 90.74 | 88.06 | |
| Siliceous earth | tonne | 23823 | 31783 | - | - | 23823 | 31783 | - | - | 33.41 | |
| Sillimanite | tonne | 11110 | 3432 | - | - | 11110 | 3432 | - | - | -69.11 | |
| Sulphur** | tonne | 737337 | 880858 | 737337 | 880858 | - | - | 100 | 100 | 19.46 | |
| Vermiculite | tonne | 1260 | 3061 | 510 | 691 | 750 | 2370 | 40.48 | 22.57 | 142.94 | |
| Wollastonite | tonne | 103902 | 108383 | - | - | 103902 | 108383 | - | - | 4.31 | |

* Excluding Atomic, Fuel and minor minerals

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

The coverage relates to PSUs only.

Other than BSM (Beach Sand Minerals)

PRODUCTION

**Table - 3 : Index of Mineral Production, 2019-20 to 2021-22
(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) |
|-------------|------------------------------------|--------------------------|---|-----------------------------|--------------------------------|
| 2019-20 | 109.6 | 134.6 | 75.4 | 141.3 | 120.9 |
| 2020-21 | 101.0 | 131.4 | 70.7 | 117.7 | 117.4 |
| 2021-22 (P) | 113.3 | 143.5 | 74.4 | 146.8 | 130.1 |

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

**Table - 4 : Gross Value Added at Basic Price, 2019-20 to 2021-22
(At Current Prices) (31.05.2022)**

(in ₹ crore)

| Industry | 2019-20 (2nd RE) | 2020-21 (1st RE) | 2021-22 (PE) | % Change in 2021-22 over the previous year |
|--------------------|--------------------|--------------------|--------------------|--|
| GVA (All) | 1,83,55,109 | 1,80,57,810 | 2,13,49,399 | 18.2 |
| Mining & Quarrying | 3,58,517 | 3,24,980 | 5,13,076 | 57.9 |

Source : CSO RE: Revised Estimates PE : Provisional Estimates

**Table - 5 : Gross Value Added at Basic Price, 2019-20 to 2021-22
(At 2011-12 prices) (31.05.2022)**

(in ₹ crore)

| Industry | 2019-20 (2nd RE) | 2020-21 (1st RE) | 2021-22 (PE) | % Change in 2021-22 over the previous year |
|--------------------|--------------------|--------------------|--------------------|--|
| GVA (All) | 1,32,19,476 | 1,25,85,074 | 1,36,05,474 | 8.1 |
| Mining & Quarrying | 3,21,766 | 2,94,024 | 3,27,984 | 11.5 |

Source : CSO RE: Revised Estimates PE : Provisional Estimates

Metals

Ferrous Metals

As per data available in monthly publication of Indian Bureau of mines 'Monthly Statistics of Mineral Production, March 2022' India produced 113.6 million tonnes of Finished Steel (including C.R. sheets), 120 million tonnes of Semi-finished Steel, 5.7 million tonnes of Pig iron and 39 million tonnes of Sponge Iron in 2021-22.

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 only some of operating plants in 2021-22. 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 2019-20 to 2021-22, 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 4,017 thousand tonnes in 2021-22 registered a increase of 11 % 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

PRODUCTION

Table – 6: Production of Ferrous Metals, 2019-20 to 2021-22

| (In '000 tonnes) | | | |
|---|---------|---------|---------|
| Ferrous Metal | 2019-20 | 2020-21 | 2021-22 |
| Finished steel (including C.R. sheets) | 102058 | 95122 | 113596 |
| Semi-finished steel (including steel ingots) | 109216 | 103044 | 120007 |
| Pig iron | 5508 | 4839 | 5759 |
| Sponge iron | 37141 | 34155 | 39031 |

Source: Monthly Statistics of Mineral Production ; March 2022, Indian Bureau of Mines, Nagpur

Table – 7: Production of Ferroalloys, 2019-20 to 2021-22

| Ferroalloys | Unit | 2019-20 | 2020-21 | 2021-22 (P) |
|------------------------|-------|---------|---------|-------------|
| Ferrochrome | tonne | 921000 | 868000 | 1113000 |
| Ferromanganese | tonne | NA | NA | NA |
| Ferrosilicon | tonne | NA | NA | NA |
| Ferroboron | kg | NA | NA | NA |
| Ferromolybdenum | kg | 527359 | 428210 | 435860 |
| Ferroniobium | kg | NA | NA | NA |
| Ferrotitanium | kg | 120762 | 249162 | 416109 |
| Ferrovandium | kg | 664541 | 634160 | 850120 |
| Ferroaluminium | kg | 1461388 | 1119259 | 1138829 |
| Magnesium Ferrosilicon | tonne | 13930 | 10220 | 15081 |
| Silicomanganese | tonne | 320594 | 329295 | 349414 |

Source: Monthly Statistics of Mineral Production ; March 2022, Indian Bureau of Mines, Nagpur

from 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 and 2021-22. The production of copper cathodes at 4,83,994 tonnes in 2021-22 increased by 33% as compared to that in the previous year. The production of copper continuous cast wire rods at 3,51,464 tonnes in 2021-22 increased by 3 % as compared to that in the previous year.

The production of lead (primary) at 1,91,185 tonnes in 2021-22 decreased by 11% 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 2021-22 was 7,75,808 tonnes which showed an increase of 8 % 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 2021-22 at 9,931 kg increased by 34 % as compared to 7,387 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 7,13,637 kg registered a decrease of 4 % 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 2021-22.

PRODUCTION

**Production of Aluminium, Copper (Cathodes), Lead (Primary)
and Zinc (Ingot), 2012-13 to 2021-22**

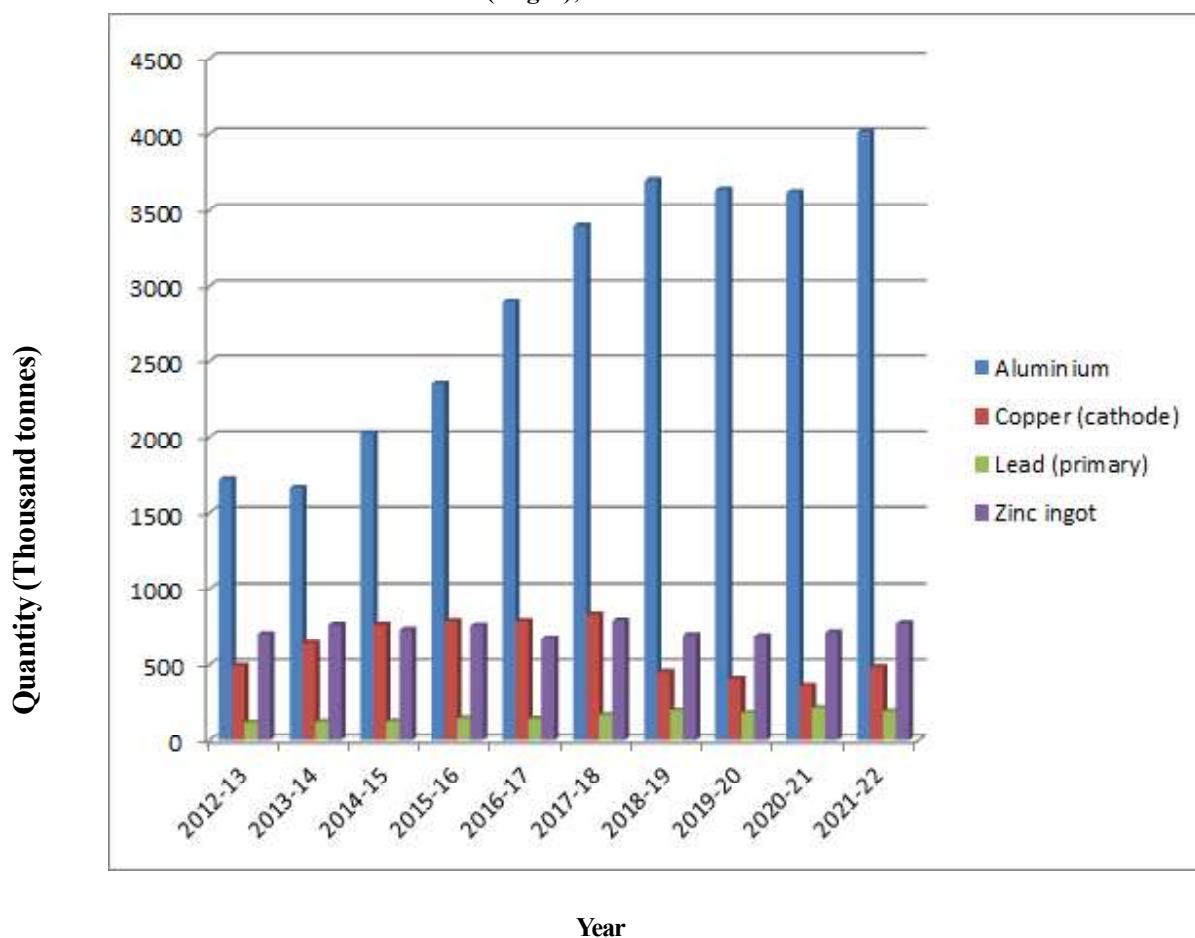


Table – 8: Production and Value of Non-Ferrous Metals, 2019-20 to 2021-22

(Quantity in tonnes; Value in ₹'000)

| Metal | Unit of quantity | 2019-20 | | 2020-21 | | 2021-22 | |
|-----------------------------------|------------------|----------|-----------|----------|-----------|----------|-----------|
| | | Quantity | Value | Quantity | Value | Quantity | Value |
| Aluminium | tonnes | 3635089 | 455960160 | 3619237 | 415967702 | 4016621 | 714320466 |
| Cadmium | tonnes | - | - | - | - | - | - |
| Copper (blister) | tonnes | 3997 | NA | - | - | - | - |
| Copper (cathode) | tonnes | 408003 | 176011710 | 363609 | 190616200 | 483994 | 363507671 |
| Copper (continuous cast wire rod) | tonnes | 349475 | 155090811 | 341563 | 188445400 | 351464 | 261303186 |
| Gold# | kg | 8382 | 31283423 | 7387 | 35814249 | 9931 | 47676677 |
| Lead (primary) | tonnes | 181365 | 29111241 | 214399 | 34531700 | 191185 | 34944605 |
| Silver# | kg | 672380 | 28267504 | 746377 | 45207924 | 713637 | 46421186 |
| Tin | kg | 6063 | 7361 | - | - | - | - |
| Zinc ingot | tonnes | 688282 | 137840297 | 715445 | 147976396 | 775808 | 202092090 |

Source: # : Includes production reported by Hindalco Industries which is excluded in mineral production tables.