

PRODUCTION



Indian Minerals Yearbook 2016

(Part- I : GENERAL REVIEWS)



55th Edition

PRODUCTION

(FINAL RELEASE)

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

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MINERALS

The total value of mineral production (excluding atomic minerals) at ₹ 2,82,966 crore during 2015-16 decreased by 2.6% as compared to the previous year due to decrease in the production of lignite, natural gas (ut.), **petroleum (crude)**, gold, manganese ore, phosphorite, garnet (abrasive), magnesite, wollastonite etc. The decrease in value of mineral is also due to decrease in average unit prices of important minerals like coal, iron ore, graphite (r.o.m.) vermiculite etc.

Out of the total value of mineral production, the fuel minerals contributed the major share of about ₹ 1,89,712 crore or 67%. The rest was accrued by metallic minerals ₹ 33,469 crore or about (12%), non-metallic minerals ₹ 6,693 crore or about (2%) and minor minerals ₹ 53,093 crore or about (19%) (Table-1).

Fuel Minerals

The value of production of fuel minerals in 2015-16 at ₹ 1,89,712 crore decreased by about 1.9% as compared to the preceding year. The production of **coal** at 639 million tonnes during 2015-16 increased by about 5% as compared to the level of previous year. Chhattisgarh, Jharkhand, Odisha, Madhya Pradesh, Telangana, Maharashtra, West Bengal and Uttar Pradesh continue to be the principal producing states accounting for almost entire production of coal in the country during 2015-16. While Meghalaya Assam and Jammu & Kashmir together reported less than 1% production. The production of **lignite** at 43.8 million tonnes reported a decrease of 9% over the previous year. Major quantity of 24.2 million tonnes or 55% of the output was reported from Tamil Nadu and the rest of 19.6 million tonnes or 45% from Gujarat and Rajasthan.

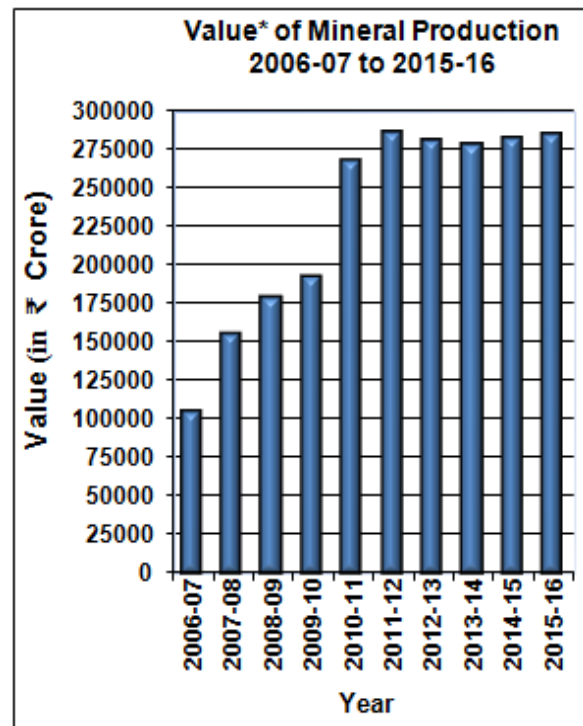
The production of **petroleum (crude)** at 37 million tonnes decreased marginally during 2015-16 as compared to that of the previous year. Off-shore regions remain the largest producing area and contributed 52% of total production of petroleum (crude) followed by Rajasthan 23%,

Gujarat 12% and Assam 11%. The remaining contributed by other few states. During 2015-16, production of **natural gas (utilised)** at 32,249 m cu m reported a decrease of about 4% as compared to the level of previous year. Off-shore region, the largest source for natural gas in the country accounted for 71% of the total production while Assam 9 percent. The remaining was contributed by other few states.

Metallic Minerals

The value of production of metallic minerals in 2015-16 at ₹ 33,469 crore decreased by about 12% over the previous year mainly due to lower production reported in gold and manganese ore and also due to decrease in average unit prices of important minerals like bauxite, chromite, copper conc., iron ore, manganese ore etc. Among the principal metallic minerals, iron ore

contributed ₹ 22,116 crore or 66%, lead (concentrate) & zinc (concentrate) together ₹ 4,283 crore or 13%, chromite ₹ 2,305 crore or about 7%, manganese ore ₹ 886 crore or about 3%, silver ₹



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1,521 crore or 4.6%, bauxite ₹ 1,410 crore or 4% and the remaining value was from copper (concentrate), gold and tin concentrates.

The production of **iron ore** at about 156 million tonnes in 2015-16 increased by 21% over the previous year. Almost entire production of iron ore (95%) was contributed from Odisha (51%), Chhattisgarh and Karnataka (16% each), and Jharkhand (12%) during the year. The remaining production was reported from Andhra Pradesh, Goa, Madhya Pradesh, Maharashtra and Rajasthan.

The production of **chromite** at 2.9 million tonnes in 2015-16 increased by 34% as compared to the previous year. Odisha reported almost entire output of chromite in the country. A nominal production was reported from Karnataka and Maharashtra. The production of **copper ore** at 3.91 million tonnes was 11% higher, while that of **copper concentrate** at 143 thousand tonnes in 2015-16 increased by 33% as compared to the previous year. Average metal content in copper conc. was 22.54% Cu. The production of **manganese ore** at 2.15 million tonnes in 2015-16, decreased about 9% as compared to that in the previous year. Of the total production of manganese ore in 2015-16, Madhya Pradesh contributed 36%, Maharashtra 29%, Odisha 18%, Andhra Pradesh 9% and Karnataka 7% while a nominal quantity was also reported from Jharkhand, Rajasthan and Telangana.

The production of **gold** at 1323 kg. (excluding gold recovery from imported concentrates) in 2015-16 was decreased by 8% as compared to the previous year. Karnataka was the leading producer of gold accounting for almost 99% output, while 1% was reported from Jharkhand. The production of **bauxite** at 28.13 million tonnes in 2015-16 increased by 25% as compared to the previous year. During the year under review, Odisha accounted for 39% of the total output followed by Gujarat 36%, Jharkhand 8%, Chhattisgarh & Maharashtra 7% each and Madhya Pradesh 2 percent. The remaining production was reported from Goa, Karnataka and Tamil Nadu. During 2015-16, the production of **lead concentrate** at 262 thousand tonnes increased by 33% and that of

zinc concentrate at 1474 thousand tonnes decreased marginally over the previous year. Average metal content in lead concentrate was 54.88% Pb and in zinc concentrate it was 50.26% Zn. Rajasthan was the only state reporting production of lead concentrate and zinc concentrate during 2015-16.

Non-Metallic Minerals

The value of production of non-metallic minerals at ₹ 6,693 crore during 2015-16 decreased by 15% as compared to the previous year. This was mainly due to exclusion of 31 minerals from the list of non-metallic minerals. Limestone with a contribution of 90% of the total value of non-metallic minerals, retained its leading position in 2015-16 in the group. The other important non-metallic minerals in value terms, were phosphorite/rock phosphate (5%) and diamond, garnet (abrasive), sillimanite and magnesite (1% each).

The production of **limestone** at 304 million tonnes in 2015-16 increased by 4% over the previous year. Limestone is widely produced in 18 states of the country. As much as 87% of the total output in 2015-16 was contributed by eight principal states viz. Rajasthan (22%), Madhya Pradesh (12%), Andhra Pradesh (11%), Chhattisgarh & Karnataka (9% each), Gujarat & Telangana (8% each) and Tamil Nadu (7% each). The remaining 13% of the total production was shared by other limestone producing states.

The production of **phosphorite/rock phosphate** at 1,474 thousand tonnes decreased by 8% in 2015-16 as compared to the previous year. Rajasthan contributed 96% of the total output of phosphorite/rock phosphate during 2015-16, while rest was accrued from Madhya Pradesh. The production of **magnesite** at 265 thousand tonnes during 2015-16 decreased by 7% as compared to the previous year. Tamil Nadu reported 77% of the production and Uttarakhand 20% and Karnataka 3% during the year under review.

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

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driving, winzings, sinking work, exploration by pitting, trenching or drilling as evident from the MCDR returns”.

There were 2,054 reporting mines (excluding atomic & minor minerals and petroleum (crude) & natural gas) in India located in 21 states during 2015-16. Among them, 512 mines belonged to coal & lignite, 667 to metallic minerals and 875 to non-metallic minerals. There were 625 mines in public sector and the rest of 1429 mines were in private sector.

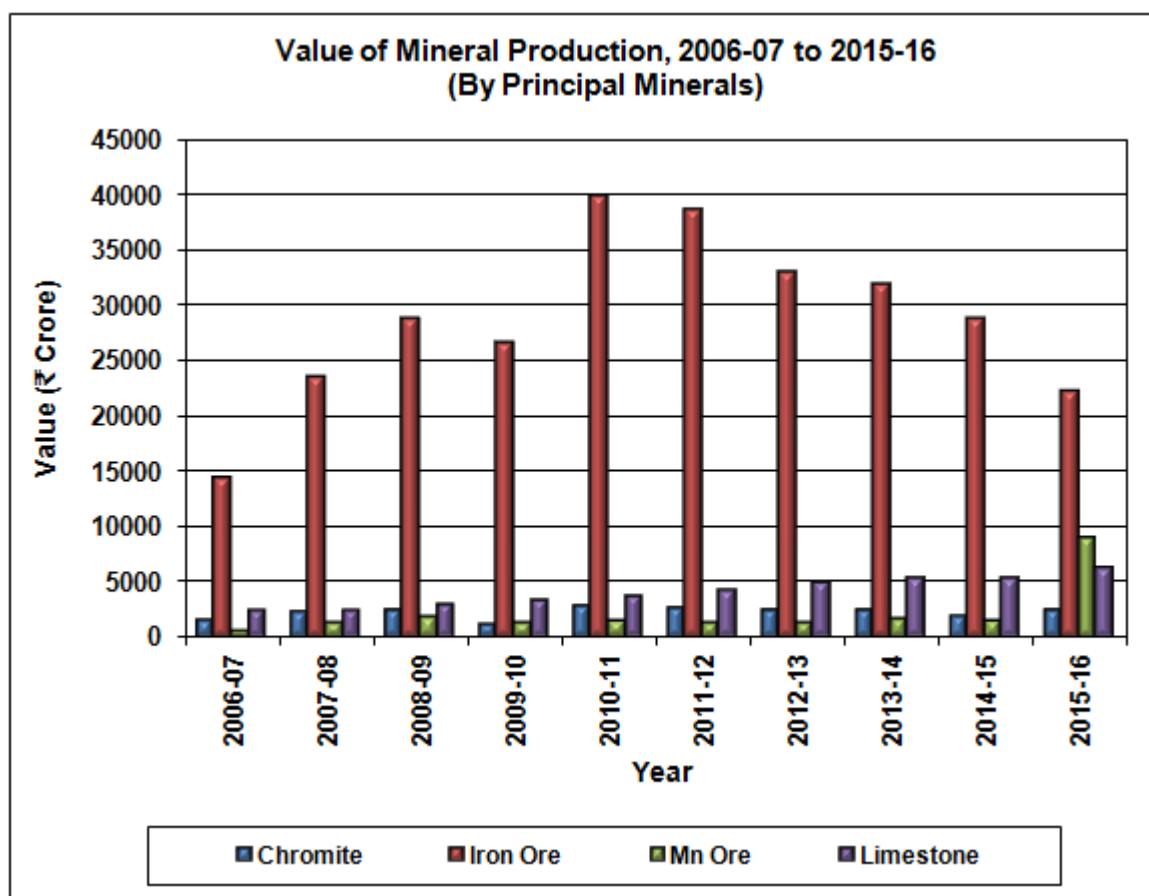
Employment

The estimated average daily employment of labour engaged in mining sector (excluding atomic and minor minerals) was 4,88,694 in 2015-16. Of this, 3,31,544 or 68% were in public sector and 1,57,150 or 32% in private sector. Fuel minerals accounted for 78%, metallic minerals 16% and non-metallic minerals 6% of the total labour force during the year.

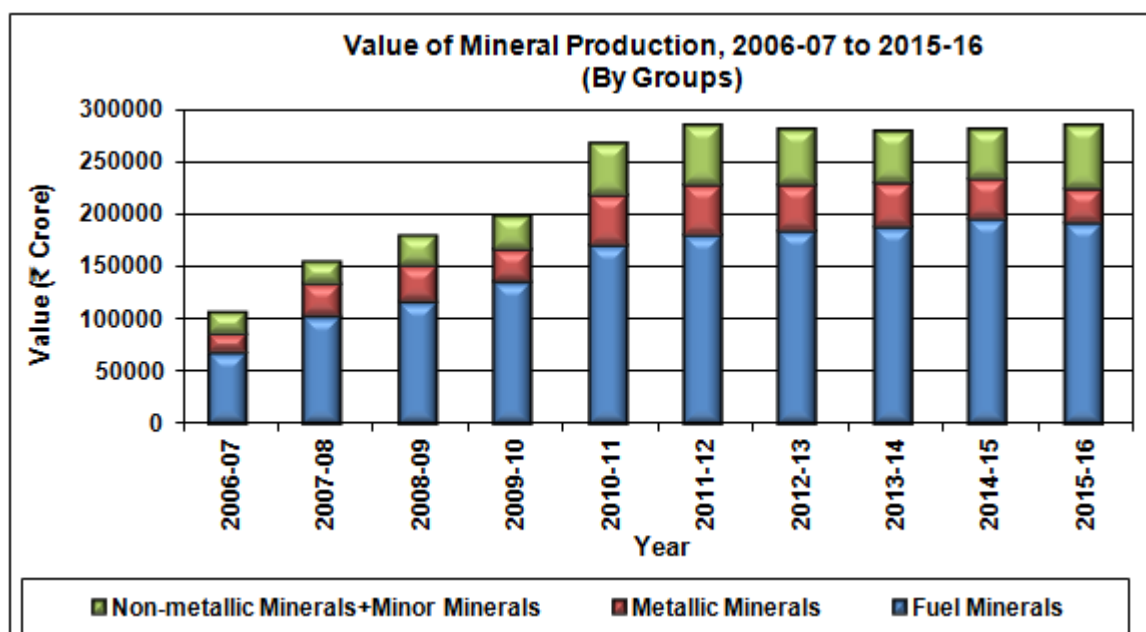
Role of Public Sector

The value of mineral production (excluding atomic minerals) in public sector was at ₹ 1,69,854 crore or 60% in the overall value of mineral production in 2015-16. The share of public sector in the total value of fuel minerals was 82%, in metallic minerals 36% and 12% in non-metallic minerals during the year.

The entire production of copper ore & conc. among metallic minerals and diamond, fluorite, selenite and sulphur in respect of non-metallic minerals was reported from the public sector. By and large, the entire production of lignite and gold (primary) came from public sector during 2015-16. Public Sector also had a sizeable contribution in production of phosphate (96%), coal (93%), natural gas (ut.) (75%), petroleum (crude) (69%), tin conc. (68%), graphite (67%), magnesite (56%) and manganese ore (50%) (Table-2).



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**Table - 1: Mineral* Production in India, 2013-14 to 2015-16
(By Mineral Groups & Minerals)**

(Value ₹'000)

Mineral	Unit	2013-14		2014-15 [#]		2015-16 [#] (P)	
		Quantity	Value	Quantity	Value	Quantity	Value
All Minerals			2773602233		2905878137		2829663027
Fuel Minerals			1864669332		1933729031		1897115070
Coal	'000t	565765	825347500	609179	892871700	639230	883822100
Lignite	'000t	44271	59675300	48270	81627000	43842	74994800
Natural Gas (utilised) ^e	m c m	35407	292820422	33657	278347698	32249	266703358
Petroleum (crude) ^e	'000t	37788	686826110	37461	680882633	36950	671594812
Metallic Minerals			423899538		379091115		334689103
Bauxite	t	22319148	9996894	22493671	11922367	28133516	14095083
Chromite	t	2878320	23759458	2164163	18800279	2893997	23047531
Copper Ore	t	3777772	-	3505348	-	3907823	-
Copper Conc.	t	139307	6681011	107604	5289409	142649	6259863
Gold Ore	t	420429	-	447278	-	534907	-
Gold	kg	1564	4225317	1441	3602722	1323	3214623
Iron Ore	'000t	152183	316491777	129321	276636789	155910	221158219
Lead & Zinc Ore	t	9281807	-	9362659	-	10453037	-
Lead Conc.	t	194426	4372536	197668	5640013	261858	7885168
Zinc Conc.	t	1490662	27389284	1489374	31572181	1473812	34943111
Manganese Ore	t	2626291	15181757	2369481	13661799	2147629	8864926
Silver	kg	349774	15778713	327647	11947028	426443	15212365
Tin Conc.	kg	34862	22791	24685	18528	13541	8214
Non-Metallic Minerals			75160537		79148013		66926059
Agate	t	100	50	-	-	-	-
Apatite	t	1300	2768	930	2065	150	332
Phosphorite	t	1453580	4754755	1607215	3759071	1473722	3275250
Asbestos	t	172	7271	-	-	-	-
Ball Clay ^s	t	2130995	1055362	1910060	920542	-	-

(Contd.)

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Table - 1 (Concl.d.)

(Value ₹'000)

Mineral	Unit	2013-14		2014-15 [#]		2015-16 [#] (P)	
		Quantity	Value	Quantity	Value	Quantity	Value
Barytes [§]	t	1170522	3561386	910963	2693456	-	-
Calcite [§]	t	92122	32620	91783	34079	-	-
Chalk [§]	t	142696	72900	94467	49974	-	-
Clay (others) [§]	t	2506662	382002	2248184	384286	-	-
Diamond	crt	37517	614087	36107	613504	36070	621441
Diaspore [§]	t	14599	29166	12207	25480	-	-
Dolomite [§]	t	7310599	2683923	6209476	2251761	-	-
Dunite [§]	t	64917	97848	75050	108474	-	-
Felspar [§]	t	1512982	439282	1343366	360546	-	-
Fireclay [§]	t	920809	185684	712792	131090	-	-
Felsite [§]	t	551	475	324	242	-	-
Fluorite	t	2487	11402	2946	13761	2333	13012
Flint Stone	t	459	136	244	79	253	76
Garnet (abrasive)	t	483559	1113231	91394	800998	81794	685899
Graphite (r.o.m.)	t	146390	102471	116712	83996	134568	66197
Gypsum [§]	t	3115363	1545061	2477849	1283871	-	-
Kaolin [§]	t	4853420	1240484	3861380	1100154	-	-
Kyanite	t	3679	8071	6255	12185	2901	14029
Sillimanite	t	67265	408247	66273	456050	70447	498992
Laterite [§]	t	3475368	687807	4650597	888225	-	-
Limestone	'000t	280863	51332006	293273	58000375	303815	60529552
Lime Kankar [§]	t	140088	28435	111382	21089	-	-
Limeshell	t	18750	35162	16353	37137	10029	27259
Magnesite	t	196940	445622	285009	748792	265022	700931
Marl	t	3254486	280571	2179488	257598	2389706	319146
Mica [§] (crude)	t	1660	47838	636	21892	-	-
Mica [§] (waste & Scrap) **	t	19752	-	11852	-	-	-
Ochre [§]	t	1580675	495087	2203708	816164	-	-
Pyrophyllite [§]	t	224677	186193	147431	121085	-	-
Pyroxenite [§]	t	2985	806	-	-	-	-
Quartz [§]	t	1488743	392258	1381406	351054	-	-
Quartzite [§]	t	584235	342453	583095	325692	-	-
Silica Sand [§]	t	3724241	966210	3047485	877497	-	-
Moulding Sand	t	29963	4877	6383	1671	25852	6068
Sand (others) [§]	t	2577869	244899	2100563	243975	-	-
Shale [§]	t	3006945	170761	2792904	224542	-	-
Slate [§]	t	351	332	218	197	-	-
Steatite [§]	t	887925	983272	774281	950316	-	-
Selenite	t	531	706	207	456	3103	6938
Sulphur ***	t	390325	-	429258	-	441153	-
Vermiculite	t	11851	9470	19336	12479	23267	10573
Wollastonite	t	192712	157090	186524	162113	175348	150364
Minor Minerals @		-	409872826	-	513909978	-	530932795

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

: Excludes the data of 31 minerals for February and March 2015, declared as minor minerals vide notification dated 10th February 2015.

e : Value estimated.

§ : Declared as minor minerals vide notification dated 10th February 2015.

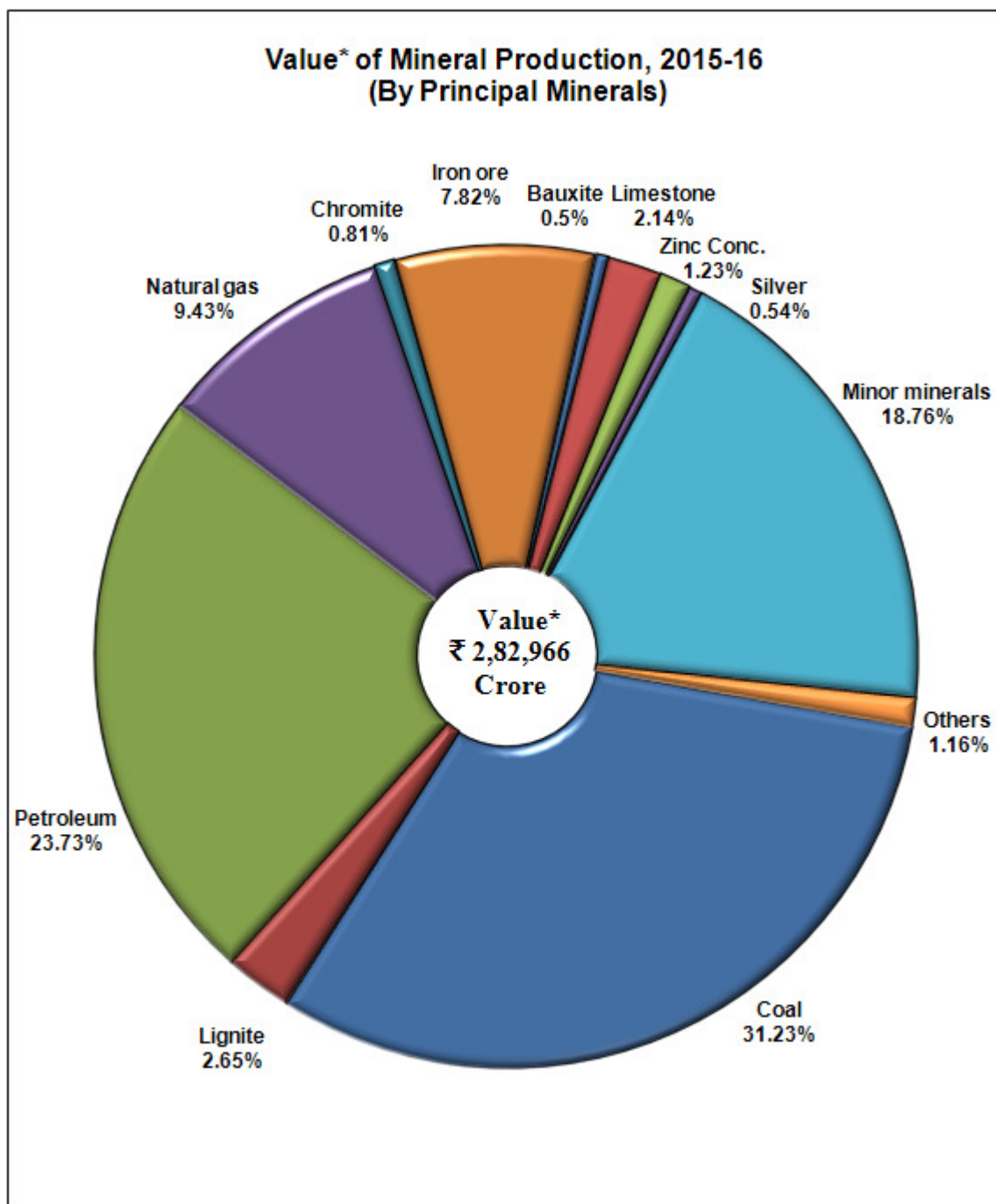
** : Includes mine waste and waste obtained while dressing of crude mica at the mine site.

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

@ : (i) Figures for earlier years have been repeated as estimates, wherever necessary, because of non-receipt of data.

(ii) Includes estimated value of 31 minerals declared as minor vide notification dated 10.02.2015 for the year 2015-16.

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

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**Table - 2: Mineral Production (Quantity), 2014-15 and 2015-16
(By Sectors)**

Mineral	Unit	All India		Public sector		Private sector		% share of public sector in total production		Overall increase (+) or decrease (-) in production in 2015-16 over 2014-15
		2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	2014-15	2015-16	
Fuel Minerals										
Coal	'000 t	609200	639021	567032	594929	42168	44092	93.08	93.10	4.90
Lignite	'000 t	48300	44008	48100	43832	200	176	99.59	99.60	-8.89
Natural Gas (Ut.)	m.c.m.	33656	31114	24744	23196	8912	7918	73.52	74.55	-7.55
Petroleum (Crude)	'000 t	37461	36951	25676	25609	11785	11342	68.54	69.31	-1.36
Metallic Minerals										
Bauxite	Tonne	22493671	28133516	6355919	6617939	16137752	21515577	28.26	23.52	25.07
Chromite	Tonne	2164163	2893997	795250	1076524	1368913	1817473	36.75	37.20	33.72
Copper Conc.	Tonne	107604	142649	107604	142649	-	-	100.00	100.00	32.57
Copper Ore	Tonne	3505348	3907823	3505348	3907823	-	-	100.00	100.00	11.48
Gold (Total)	Kg	1441	1323	1430	1310	11	13	99.24	99.02	-8.19
Gold Ore	Tonne	447278	534907	443279	530754	3999	4153	99.11	99.22	19.59
Iron Ore (Total)	'000 t	129321	155910	59463	60638	69858	95272	45.98	38.89	20.56
Lead & Zinc Ore	Tonne	9362659	10453037	-	-	9362659	10453037	-	-	11.65
Lead Conc.	Tonne	197668	261858	-	-	197668	261858	-	-	32.47
Manganese Ore	Tonne	2369481	2147629	1170533	1082793	1198948	1064836	49.40	50.42	-9.36
Silver	Kg	327647	426443	139	122	327508	426321	0.04	0.03	30.15
Tin Conc.	Kg	24685	13541	23001	9268	1684	4273	93.18	68.44	-45.14
Zinc Conc.	Tonne	1489374	1473812	-	-	1489374	1473812	-	-	-1.04
Non-Metallic Minerals										
Apatite	Tonne	930	150	-	-	930	150	-	-	-83.87
Diamond	Carat	36107	36070	36107	36070	-	-	100.00	100.00	-0.10
Flourite Graded	Tonne	2946	2333	2946	2333	-	-	100.00	100.00	-20.81
Flint Stone	Tonne	244	253	-	-	244	253	-	-	3.69
Garnet (Abrasive)	Tonne	91394	81794	22394	25460	69000	56334	24.50	31.13	-10.50
Graphite R.O.M.	Tonne	116712	134568	71706	90275	45006	44293	61.44	67.09	15.30
Kyanite	Tonne	6255	2901	-	201	6255	2700	-	6.93	-53.62
Limeshell	Tonne	16353	10029	3263	0	13090	10029	19.95	0.00	-38.67
Limestone	'000 t	293273	303815	11885	11194	281388	292621	4.05	3.68	3.59
Magnesite	Tonne	285009	265022	164642	147361	120367	117661	57.77	55.60	-7.01
Marl	Tonne	2179488	2389706	-	-	2179488	2389706	-	-	9.65
Moulding Sand	Tonne	6383	25852	-	-	6383	25852	-	-	305.01
Phosphorite	Tonne	1607215	1473722	1465638	1417192	141577	56530	91.19	96.16	-8.31
Sillimanite	Tonne	66273	70447	26275	18514	39998	51933	39.65	26.28	6.30
Selenite	Tonne	207	3103	207	3103	-	-	100.00	100.00	1399.03
Sulphur	Tonne	429258	441153	429258	441153	-	-	100.00	100.00	2.77
Vermiculite	Tonne	19336	23267	2222	989	17114	22278	11.49	4.25	20.33
Wollastonite	Tonne	186524	175348	-	-	186524	175348	-	-	-5.99

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Minor Minerals

The value of minor minerals at ₹ 51,391 crore in 2014-15 was lower by 25% as compared to that in the previous year.

Andhra Pradesh with a share of 18% in total value of minor minerals produced in the country occupied the top position. Rajasthan with a share of 16% in the value of minor minerals was at second place. Next in the order were Telangana 12%, Gujarat & Uttar Pradesh 11% each, Bihar & Maharashtra 8% each, Kerala 5%, Karnataka 3%, Madhya Pradesh 2% and Chhattisgarh & Goa 1% each. The other states and UTs with individual contribution of less than 1% accounted for the remaining value of minor minerals.

Mineral-wise analysis revealed that road metal had the largest share of 20% of the total value of minor minerals followed by granite 17%, other building stone 12%, ordinary sand 10%, stones 8%, brick-earth 6%, boulder & gravel 5% each, limestone & marble 4% each, murrum, ordinary earth & kankar 2% each, and quartzite & sandstone 1%. The remaining minerals with individual share of less than 1.0%, together contributed 2% of value of minor minerals.

The share of minor minerals in the value of mineral production was about 17.7% in 2014-15 & 14.8% in 2013-14 (Tables -3 to 5).

Table – 3: Share of Minor Minerals in Total Value of Mineral Production 2012-13 to 2014-15

(Value in ₹'000)			
Year	All minerals	Minor minerals	% share of minor minerals
2012-13	2800056812	466844904	16.7
2013-14	2773602233	409872826	14.8
2014-15 (P)	2905878137	513909978	17.7

Table – 4: Value of Production of Minor Minerals 2012-13 to 2014-15 (By States)

(In ₹'000)			
State	2012-13	2013-14	2014-15 (P)
India	466844904	409872826	513909978
Andhra Pradesh	138112962	131082319	93525013
Arunachal Pradesh	164882	228992	428100
Assam	313805	313805	313805
Bihar	1714921	3975880	42719931
Chhattisgarh	4390430	6273771	6343631
Goa	4433452	6198235	7040660
Gujarat	94490254	61796300	57745800
Haryana	1487198	847044	354770
Himachal Pradesh	904200	500180	456567
Jammu & Kashmir	5287184	1950680	2133313
Jharkhand	401448	401448	401448
Karnataka	16083007	20181645	13212712
Kerala	13922040	14959461	26907761
Madhya Pradesh	4804597	16525936	11550567
Maharashtra	58569144	10561400	41725200
Manipur	2866	2866	2866
Meghalaya	72075	72075	72075
Mizoram	16242	21483	12875
Nagaland	1774	1774	1774
Odisha	856767	856767	856767
Punjab	94448	94448	94448
Rajasthan	75569100	72729110	82258500
Sikkim	18787	18787	18787
Tamil Nadu	4093451	4093451	4093451
Tripura	29180	36409	53829
Telangana	-	-	62677642
Uttar Pradesh	38727240	53726921	56140561
Uttarakhand	636367	636367	636367
West Bengal (1)	1455113	1455113	1455113
Andaman & Nicobar Islands	191970	327632	675447
Puducherry	-	2527	198

Source: State/Union Territory Government.

(1) Excluding data in respect of quarry permits issued by district authorities.

Note: Earlier year's figures have been repeated as estimates, wherever necessary, due to non-receipt of data.

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**Table – 5: Value of Production of Minor Minerals
2012-13 to 2014-15
(By Minerals)**

(In ₹'000)			
Mineral	2012-13	2013-14	2014-15 (P)
All Minerals	466844904	409872826	513909978
Bentonite	907770	817825	733700
Boulder	1365684	17312719	23899325
Brick-earth	72676476	62792865	31205734
Building Stones	120062792	129515245	151763272
Granite	66764237	82182957	89960399
Other Building stones	53298555	47332288	61802873
Chalcedony or impure quartz pebbles ⁽¹⁾	9312	-	-
Fuller's Earth	309502	346219	458020
Gravel	16131578	15034230	23612395
Kankar ⁽²⁾	12582749	7223433	8243253
Limeshell ⁽²⁾	11607	247	7
Limestone ⁽²⁾	12138165	13369645	20152031
Marble	19129861	15419081	18858433
Murram	11392938	10801664	11036364
Ordinary clay	2807607	3859590	4358645
Ordinary earth ⁽³⁾	6305743	9487187	9657379
Ordinary sand ⁽⁴⁾	66107655	33176824	52849399
Quartzite and sand stone ⁽⁵⁾	7612211	6529443	7356285
Reh-matti	6682	3400	10200
Road metal	111348703	78866879	103331525
Salt petre	965	110	186
Shale ⁽⁶⁾	62578	=	=
Shingle	228383	547446	596097
Slate ⁽⁶⁾	20332	66521	66457
Stones ⁽⁷⁾	2656480	1814252	42881184
Other Minerals (Not included above) ⁽⁸⁾	3031709	2888001	2840087

Source: State/Union Territory Government.

(1) Used for ball mill purposes or for filling for bore wells or for decorative purposes in buildings.

(2) Used in kilns for manufacturing of lime used as building material

(3) Used for levelling or filling purposes in constructions of embankments, roads, railways, buildings etc.

(4) Other than sand used for prescribed purposes; as (i) refractory and manufacture of ceramic; (ii) metallurgical purposes; (iii) optical purposes; (iv) purposes of stowing in coal mines; (v) for manufacture of silvitrete cement; (vi) for manufacture of sodium silicate; (vii) for manufacture of pottery and glass.

(5) Used for purposes of building or for making road metals and house-hold utensils.

(6) Used for building material

(7) Used making house-hold utensils.

(8) Items included are those for which value is available from the state govt. but quantity and name of item is not available.

PRODUCTION

Index of Mineral Production

The index of mineral production (excluding atomic minerals) (with base year 2004-05=100) for 2015-16 at

129.3 displayed a growth of 2.2% as compared to the previous year (Table - 6).

**Table - 6: Index of Mineral Production, 2013-14 to 2015-16
(Excluding Atomic Minerals)**

(Base 2004-05=100)

Year	Index of mineral production (1000)	Coal & lignite (323.25)	Crude petroleum & natural gas (489.08)	Metallic minerals (103.98)	Non-metallic minerals (27.41)	Minor minerals (56.28)
2013-14	124.7	147.1	111.2	106.7	162.1	128.54
2014-15	126.5	159.5	109.1	92.1	175.4	128.54
2015-16 (P)	129.3	166.0	106.7	108.9	178.1	128.54

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

**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 2015-16, Mining and Quarrying Industry accounted for about 2.6 % of the GVA at current prices. The GVA at current and constant prices for the period from 2013-14 to 2015-16 is as under (Tables- 7 & 8).

**Table - 7: Gross Value Added at Basic Price, 2013-14 to 2015-16
(At Current Prices)**

(in ₹ crore)

Industry	2013-14 (NS)	2014-15 (NS)	2015-16 (PE)	% Change in 2015-16 over the previous year
GVA (All)	10380813	11472409	12279410	7.0
Mining & Quarrying	295978	304300	318672	4.7

Source : CSO.

NS : New Series Estimates

PE : Provisional Estimates

**Table - 8: Gross Value Added at Basic Price, 2013-14 to 2015-16
(At 2011-12 prices)**

(in ₹ crore)

Industry	2013-14 (NS)	2014-15 (NS)	2015-16 (PE)	% Change in 2015-16 over the previous year
GVA (All)	9084369	9727490	10427191	7.2
Mining & Quarrying	267378	296328	318377	7.4

Source : CSO.

NS: New Series Estimates.

PE: Provisional Estimates.

PRODUCTION

METALS

Ferrous Metals

As per the provisional data received from the Office of the Joint Plant Committee, Kolkata, India produced 97 million tonnes of Finished Steel (including C.R. sheets), 37.4 million tonnes of Semi-Finished Steel (including steel ingots), 9.6 million tonnes of Pig Iron, 16.3 million tonnes of Sponge Iron and 0.6 million tonnes of Steel Wires in 2015-16.

The production of Finished Steel (including C.R. sheets), Semi-finished steel (including steel ingots), Pig iron and Sponge iron registered decrease of 8.2%, 43.1%, 0.7% and 16.0%, respectively as compared to previous year.

Production of various items of Iron and Steel for the last three years is given in Table - 9.

Ferro-alloys

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

The information on production of ferro-alloys were received from 17 operating plants in 2015-16. The production in respect of ferro-chrome, ferro-manganese and ferro-silicon were 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 ferro-alloys in the country. Production of ferro-alloys for the years 2013-14 to 2015-16, to the extent received (including partly estimated due to non-receipt of data), is presented in Table - 10.

The data presented in Table - 10, for 2015-16 were received from one plant each for Ferro-Niobium, Ferro Vanadium, Ferro-Aluminium and Ferro-Boron, three plants each for Ferro-Molybdenum, Ferro-Titanium and Magnesium Ferro-Silicon and 10 plants for Silico-Manganese.

**Table – 9: Production of Ferrous Metals
2013-14 to 2015-16**

(In '000 tonnes)

Ferrous Metal	2013-14	2014-15	2015-16 (P)
Finished steel (including C.R. sheets)	102090	106052	97340
Semi-finished steel (including steel ingots)	59379	65793	37445
Pig iron	7289	9701	9635
Sponge iron	14972	19386	16284
Steel wire	583	583	583

Source: Office of Joint Plant Committee, Kolkata.

PRODUCTION

Table – 10: Production of Ferro-alloys, 2013-14 to 2015-16

(In tonnes)				
Ferro-alloys	Unit of Qty	2013-14	2014-15	2015-16 (P)
Ferro-Chrome	tonne	944000	944000	944000
Ferro-Manganese	tonne	518000	518000	518000
Ferro-Silicon	tonne	90000	90000	90000
Ferro-Boron	kg	21075	42000	NA
Ferro-Molybdenum	kg	1230710	1295294	1459089
Ferro-Niobium	kg	19893	8146	1465
Ferro-Titanium	kg	820526	545100	198343
Ferro-Vanadium	kg	906000	1035000	937000
Ferro-Aluminium	kg	5496506	3736701	3211950
Ferro-Silicon-Zirconium	kg	1720	NA	NA
Magnesium Ferro-Silicon	tonne	21964	26123	20541
Silico-Manganese	tonne	225395	249691	269920
Chromium Metal	kg	NA	NA	NA

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 Ferro-Chrome, Ferro-Manganese and Ferro-Silicon have been received from JPC Kolkata.

NA : Not available.

PRODUCTION

Non-ferrous Metals

The production of aluminium at 2,355 thousand tonnes in 2015-16 registered an increase of 16% as compared to that in the previous year. Seven plants in public sector and six in private sector reported production of aluminium during the year.

Smelting and refining of copper is carried out by Hindustan Copper Ltd in their existing plants located at Ghatshila and Raigad. Copper metal is also produced from imported copper concentrates at the plants of Vedanta Ltd (formerly Sterlite Industries (India) Ltd) and Hindalco Industries Ltd. The production of copper (blister) at 16,692 tonnes in 2015-16 increased by 1% as compared to that in the previous year. The production of copper (cathodes) at 7,90,372 tonnes in 2015-16 increased by 3% as compared to the previous year. The production of copper (continuous cast wire rods) at 3,89,587 tonnes in 2015-16 increased by 15% as compared to that in the previous year.

The production of lead (primary) at 1,45,257 tonnes in 2015-16 increased by about 14% as compared to that in the previous year. No production of lead (secondary) was reported during the last

six years. The production of zinc ingots in 2015-16 was 7,58,944 tonnes as against 7,32,792 tonnes in the previous year showing an increase of 4 percent.

Precious Metals

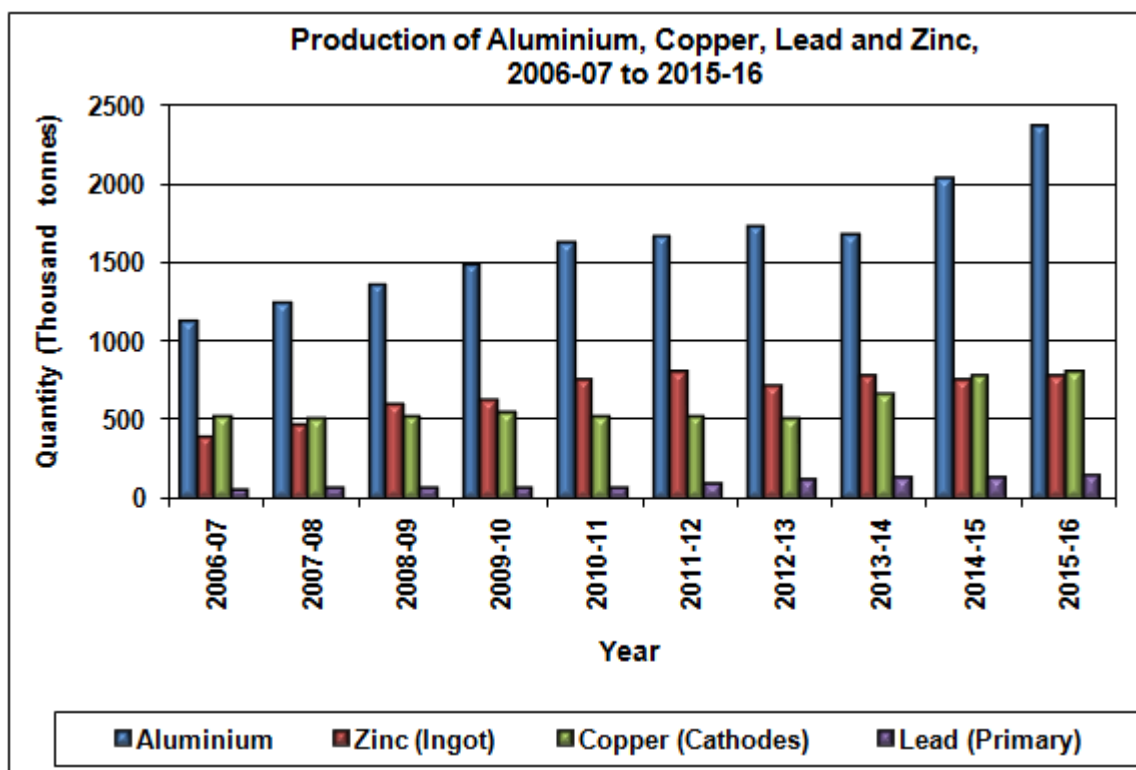
Gold primary is produced from gold ore by HGML in the state of Karnataka. Gold is also recovered as by-product from copper slime of Hindalco Industries Ltd in Gujarat. The total production of gold bullion during the year at 10,412 kg increased by 4% as compared to 9,988 kg in the previous year.

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

The production of silver at 4,91,178 kg registered an increase of 22 percent as compared to that in the previous year.

Other Metals

Cadmium is a by-product of zinc smelting. There is no production of cadmium in 2015-16 as compared to 69 tonnes in 2014-15. Production of Selenium has not been reported during last few years (Table - 11).



PRODUCTION

Table – 11: Production and Value of Non-ferrous Metals, 2013-14 to 2015-16

(Value in ₹'000)

Metal	Unit of quantity	2013-14		2014-15		2015-16 (P)	
		Quantity	Value	Quantity	Value	Quantity	Value
Aluminium	tonnes	1667300	186608433	2026803	244049823	2354949	268362923
Cadmium	tonnes	228	36605	69	9610	-	-
Copper (blister)	tonnes	17245	NA	16471	NA	16692	NA
Copper (cathode)	tonnes	644193	279421469	765568	305302465	790372	265282521
Copper (continuous cast wire rod)	tonnes	282969	127327534	337713	140373262	389587	135417380
Gold	kg	9209	24833062	9988	25320142	10412	25359408
Lead (primary)	tonnes	122595	18662521	127142	18759110	145257	20363511
Silver	kg	411504	18457242	402467	14621606	491178	17326739
Tin	kg	22799	25717	8674	11709	16675	21677
Zinc ingot	tonnes	766530	109946139	732792	119987141	758944	108928344

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