

Indian Mineral Industry at a Glance

2015-16



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PREFACE

"Indian Mineral Industry at a Glance 2015-16" is the thirty-seventh edition in its series. The publication has been divided into eight sections viz., General, Mineral Production, Production of Metals and Alloys, Foreign Trade, Employment in Mines, Consumption of Minerals, Production of Mineral-based Products and Mining Machinery for ease of reference. The salient features of the data presented in each section are highlighted at the beginning of the section. The Indian Mineral Industry at a Glance pocket book is handy and a ready reckoner with important features of the mining sector. It is stated that some of the figures of GDP/GVA, consumption, foreign trade, mineral based product etc. pertaining to previous years are updated based on latest data.

The publication has been brought out by the Mining and Mineral Statistics Division of the Bureau. This Division, in addition to the extensive data available with it, has also utilised the data furnished by the Mineral Development and Regulation Division on Afforestation for Section-1 and Mining Machinery for Section-8. Similarly, Mineral Economics Division has furnished data on Mineral Resources and Mining Leases for Section-1 and on Consumption of Minerals for Section-6.

The foreign trade data on minerals, metals and selected mineral-based products is received from the Director General of Commercial Intelligence & Statistics (DGCI&S), Kolkata. The export data includes re-exports for the years

2006-07 to 2015-16. Country-wise break-up of some of the minerals and metals at 8-digit customs tariff / ITC (HS) code level is not available for few items. The entire data of such minerals and metals have been grouped under country-item 'unspecified', which has been clubbed with 'others'. The data for the remaining countries in respect of tables of such minerals have limitations to that extent.

The Bureau is thankful to the Ministry of Petroleum and Natural Gas, New Delhi; Office of the Coal Controller, Kolkata; Joint Plant Committee, Kolkata; The Director General of Commercial Intelligence and Statistics, Kolkata; The Department of Industrial Policy & Promotion, Office of the Economic Advisor, Ministry of Commerce & Industry, Ministry of Chemical and Fertiliser and Central Statistical Office for providing the valuable information for this publication.

During the year 2014-15, 31 non-metallic minerals were notified as minor minerals by the central government w.e.f.10.02.2015. The figures of such minerals were available for the period from April 2014 to January 2015. Therefore the figures of these minerals are of the period of 10 months (April 2014 to January 2015) and not comparable with those of previous years.

This publication is compiled as a reference material on mining and minerals related information to all those who are directly or indirectly associated with the mineral sector.

Nagpur
Dated : 24th April, 2018

Controller General
Indian Bureau of Mines

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(ii) In certain cases sum of individual items may not tally with the total of the table due to rounding off the figures.

Symbols and Abbreviations

(e)	Estimated
N.A.	Not Available
(R)	Revised
++	Negligible
-	Nil
(P)	Provisional
%	Percentage
kg.	Kilogram
t	Tonne
'000 t	Thousand Tonnes
m.t.	Million Tonnes
m.cu.m.	Million Cubic Metres
R.O.M.	Run-of-mine
Av.	Average
m.m.	Millimetre
h.p.	Horsepower

Section – 1

General

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Section-1

General

The value of mineral production in India covering fuel, metallic, non-metallic and minor minerals rose spectacularly during the last 6 decades since 1955 and touched the level of Rs. 282966 crores in 2015-16 (the figure is estimated for fuel). The increase in the value was attributable to both rises in mineral production as well as in mineral prices.

During 2015-16, production of principal minerals like coal, lignite, petroleum (crude), bauxite, chromite, copper ore and concentrates, iron ore, lead and zinc concentrates, manganese ore, silver, diamond, limestone, phosphorite etc. has gone up whereas it declined in case of gold and kyanite etc. as compared with that of 1955.

The index of mineral production (base 2004-05=100) has increased from 126.5 in 2014-15 to 129.3 in 2015-16 showing an increase as compared to previous year.

The total number of reporting mines in 2015-16 (excluding those of petroleum (crude), natural gas (utilised), atomic and minor minerals) was 2054. Of these, 512 mines belonged to coal & lignite, 667 to metallic minerals and 875 to non-metallic minerals.

The performance of some important minerals such as fuel, metallic and

non-metallic minerals in the last 60 years is shown under Appendix-I at the end of this publication.

Fuel Minerals

The production of coal at 639 million tonnes in 2015-16 was more than 16 times of its production at 39 million tonnes 1955. The production of lignite at 44 million tonnes was substantially higher than that of 29 thousand tonnes in 1955. The production of petroleum (crude) at 37 million tonnes during 2015-16 was also rose manifold than that of the 347 thousand tonnes in 1955. Natural gas (utilised), which had no production in 1955, recorded a production of 32249 m.cu.m. in 2015-16.

Metallic Minerals

The production of all metallic minerals, except gold, registered a spectacular growth during the last 60 years. The production of iron ore increased from 7 million tonnes in 1955 to 156 million tonnes in 2015-16. The production of bauxite increased from 92 thousand tonnes in 1955 to 28.1 million tonne in 2015-16, chromite from 91 thousand tonnes to 2.9 million tonnes, manganese ore from 1745 thousand tonnes to 2148 thousand tonnes, lead concentrates from 3 thousand tonnes to 262 thousand tonnes and zinc concentrates from 5 thousand tonnes to 1474 thousand tonnes. The production of silver, a by-product in the country, was at 426443 kg. in 2015-16 as compared to 4788 kg. in 1955.

Non-Metallic Minerals

In the non-metallic group of minerals, the production of limestone at 304

million tonnes in 2015-16 was more than 40 times of the output recorded in 1955. The production of apatite & phosphorite rose from 6 thousand tonne in 1955 to 1474 thousand tonnes during 2015-16, magnesite from 58 thousand tonnes to 265 thousand tonnes in the same period of 60 years.

Mineral Reserves and Resources				
Mineral	Unit	As on 1.4.2015 (P)		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Andalusite	'000 t	-	28201	28201
Antimony				
Ore	tonnes	-	10588	10588
Metal	tonnes	-	174	174
Apatite	'000 t	29	24016	24045
Asbestos	'000 t	24	22923	22947
Ball Clay	'000 t	49493	85250	134743
Barytes	'000 t	51347	35324	86671
Bauxite	'000 t	656422	3240442	3896864
Bentonite	'000 t	14585	568303	582888
Borax	tonnes	-	74204	74204
Calcite	'000 t	3449	19555	23004
Chalk	'000 t	5064	1687	6751
Chromite	'000 t	102210	241806	344016
Cobalt (Ore)	m. tonnes	-	45	45
Copper	'000 t			
Ore		207767	1303730	1511498
Metal		2734.62	9423.53	12158.15
Corundum	tonnes	200	293497	293697
Diamond	th. carats	960	30876	31836

Mineral Reserves and Resources (Contd...)

Mineral	Unit	As on 1.4.2015 (P)		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Diaspore	'000 t	7882	2311	10193
Diatomite	'000 t	-	2885	2885
Dolomite	'000 t	678883	7736008	8414891
Dunite	'000 t	12768	175049	187817
Felspar	'000 t	319841	313726	633567
Fireclay	'000 t	27037	695791	722828
Fluorite	'000 t	289	17893	18182
Fullers Earth	'000 t	3941	257438	261379
Garnet	'000 t	12784	43377	56161
Gold				
Ore (Primary)	'000 t	17228	484611	501839
Metal (Primary)	tonnes	70.09	584.65	654.74
Ore (Placer)	'000 t	-	26121	26121
Metal (Placer)	tonnes	-	5.86	5.86
Granite (Dimension stone)	'000 cu.m	263692	46056098	46319790
Graphite	'000 t	7961	186926	194887
Gypsum	'000 t	36621	1292892	1329513

Mineral Reserves and Resources (Contd...)

Mineral	Unit	As on 1.4.2015 (P)		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Iron Ore & Conc.	'000 t			
Hematite		5441752	17045214	22486966
Magnetite		52699	10736455	10789154
Kaolin	'000 t	229469	2711777	2941247
Kyanite	'000 t	688	104293	104981
Laterite	'000 t	124733	581819	706552
Lead & Zinc	'000 t			
Ore		106116	643343	749459
Lead Metal		2482.34	10521.36	13003.7
Zinc Metal		9999.52	26363.24	36362.76
Lead & Zinc Metal		-	143.13	143.13
Limestone	m.t.	16336	186889	203225
Magnesite	'000 t	82276	311711	393987
Manganese Ore	'000 t	93475	402399	495874
Marble	'000 t	4551	1941341	1945892
Marl	'000 t	123856	11705	135561
Mica	tonnes	114433	520869	635302

Mineral Reserves and Resources (Contd...)

Mineral	Unit	As on 1.4.2015 (P)		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Molybdenum				
Ore	tonnes	-	19371698	19371698
Contained MOS ₂	tonnes	-	12668.37	12668.37
Nickel	m.t.	-	189	189
Ochre	'000 t	36934	130859	167793
Perlite	'000 t	-	2406	2406
PGM (Metals)	Tonnes of Metal Content			
		-	15.71	15.71
Phosphorite/Rock Phosphate	'000 t	45808	266871	312679
Potash	m.t.	-	22508	22508
Pyrites	'000 t	-	1674401	1674401
Pyrophyllite	'000 t	24933	34683	59616
Quartzite	'000 t	83472	1575325	1658798
Ruby	kg.	-	5349	5349
Salt (Rock)	'000 t	-	16025	16025
Sapphire	kg	-	450	450
Shale	'000 t	15472	3781	19253

Mineral Reserves and Resources (Conclld...)				
Mineral	Unit	As on 1.4.2015 (P)		
		Reserves (A)	Remaining Resources (B)	Total (A+B)
Sillimanite	'000 t	6502	63702	70204
Silver				
Ore	'000 t	150444	361511	511955
Metal	tonnes	7171.94	22809.88	29981.82
Slate	'000 t	20286	2586	22872
Sulphur (Native)	'000 t	-	210	210
Talc/Steatite/Soap Stone	'000 t	106490	209434	315924
Tin				
Ore	'000 t	4	83721	83725
Metal	tonnes	154.2	102259.16	102413.36
Titanium Minerals	'000 t	14421	399205	413626
Tungstun				
Ore	tonnes	-	87387464	87387464
Contained WO ₃	tonnes	-	142094.35	142094.35
Vanadium				
Ore	tonnes	-	24633855	24633855
Contained V ₂ O ₅	tonnes	-	64594.01	64594.01
Vermiculite	tonnes	1632885	719582	2352467
Wollastonite	tonnes	2241462	14227824	16469286
Zircon	tonnes	1158290	2264913	3423203

Mining Leases as on 31-3-2016[@] (By Principal Minerals)				
Mineral	No. of Mining Leases Granted/Executed	% to Total Leases	Area (‘000 ha)	% to Total Area
Total	4128	100	355	100
Limestone	2015	49	156	44
Iron ore	713	17	90	25
Bauxite	372	9	29	8
Manganese ore	321	8	17	5
Graphite	105	3	3	1
Others	602	14	60	17

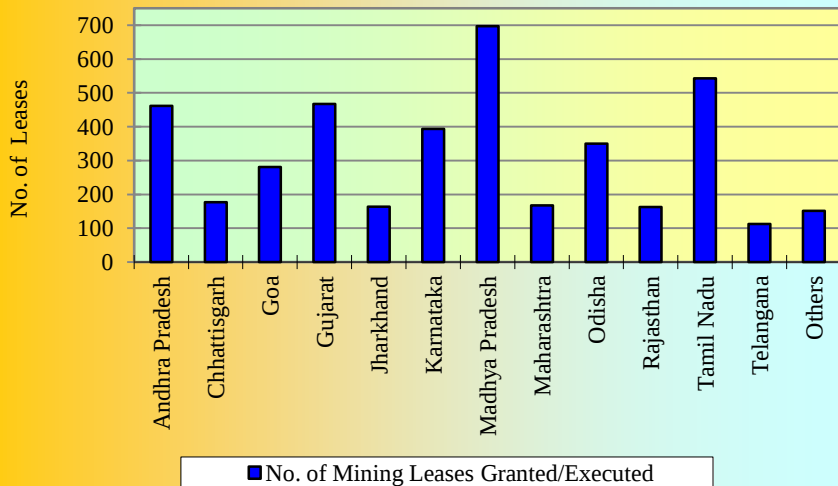
@ Excluding fuel, atomic & minor minerals and also the minerals declared as 'Minor' vide.

Gazette Notification Part II- Section 3- Sub- section (ii) dated 10 February, 2015.

Mining Leases as on 31-3-2016[@] (By Principal States)				
State	No. of Mining Leases Granted/Executed	% to Total Leases	Area (’000 ha)	% to Total Area
All States	4128	100	355	100
Andhra Pradesh	462	11	26	7
Chhattisgarh	177	4	24	7
Goa	281	7	21	6
Gujarat	467	11	22	6
Jharkhand	164	4	24	7
Karnataka	393	10	40	11
Madhya Pradesh	697	17	33	9
Maharashtra	167	4	12	3
Odisha	350	8	69	19
Rajasthan	163	4	50	14
Tamil Nadu	543	13	9	3
Telangana	113	3	11	3
Others	151	4	14	4

*@ Excluding fuel, atomic & minor minerals and also the minerals declared as 'Minor' vide.
Gazette Notification Part II- Section 3- Sub- section (ii) dated 10 February, 2015.*

Mining Leases as on 31-3-2016 (By Principal States)



Concentration of Mining Leases as on 31-3-2016[@] (By Potential)					
Potential Bearing Districts	No. of Districts	No. of Mining Leases Granted/ Executed	% to Total Leases	Area ('000 ha)	% to Total Area
Total	211	4128	100	355	100
Low	193	2028	49	214	60
Medium	10	824	20	61	17
High	8	1276	31	80	23

@ Excluding fuel, atomic & minor minerals and also the minerals declared as 'Minor' vide. Gazette Notification Part II- Section 3- Sub- section (ii) dated 10 February, 2015.

High : > 100 mining leases in a district
Medium : 51 – 100 mining leases in a district
Low : 1– 50 mining leases in a district

Distribution of Mining Leases as on 31-3-2016[@] (By Sectors)				
Sector	No. of Mining Leases Granted/Executed	% to Total Leases	Area (‘000 ha)	% to Total Area
Total	4128	100	355	100
Public	295	7	97	27
Private	3833	93	258	73

Distribution of Mining Leases as on 31-3-2016[@] (By Lease Groups)					
Frequency Groups (No. of Leases)	Minerals Covered	No. of Mining Leases Granted/Executed	% to Total Leases	Area (‘000 ha)	% to Total Area
Total	40	4128	100	355	100
1 to 50	33	393	9	55	15
51 to 100	-	-	-	-	-
101 to 200	3	314	8	7	2
201 to 300	-	-	-	-	-
301 to 500	2	693	17	46	13
501 to 1000	1	713	17	91	26
Above 1000	1	2015	49	156	44

*@ Excluding fuel, atomic & minor minerals and also the minerals declared as 'Minor' vide.
Gazette Notification Part II- Section 3- Sub- section (ii) dated 10 February, 2015.*

Distribution of Mining Leases as on 31-3-2016 @ (By Area Groups)				
Frequency Groups (Area in ha.)	No. of Mining Leases Granted/Executed	% to Total Leases	Area ('000 ha)	% to Total Area
All Groups	4128	100	355	100
0-10	1942	47	8	2
10-20	469	11	7	2
20-50	585	14	19	5
50-100	513	13	39	11
100-200	235	6	33	9
200-500	204	5	66	19
Above 500	180	4	183	52

*@ Excluding fuel, atomic & minor minerals and also the minerals declared as 'Minor' vide.
Gazette Notification Part II- Section 3- Sub- section (ii) dated 10 February, 2015.*

Number of Reporting Mines, 2006-07 to 2015-16 (By Mineral Groups)				
Year	Total*	Coal & Lignite	Metallic Minerals	Non-Metallic Minerals
2006-07	3005	570	639	1796
2007-08	3025	570	693	1762
2008-09	3150	574	719	1857
2009-10	3055	573	701	1781
2010-11	3118	573	719	1826
2011-12	3473	573	668	2232
2012-13	3978	575	708	2695
2013-14	3979	552	711	2716
2014-15	3635	558	693	2384
2015-16(P)	2054	512	667	875

**Excluding Petroleum (crude), Atomic and Minor minerals.*

Reporting mine : A mine reporting production or reporting 'Nil' production during a year but engaged in developmental work such as, overburden removal; underground driving, winzing, sinking work; exploration by pitting, trenching or drilling as evident from the MCDR returns.

Number of Underground Mines, 2015-16 @ (By Principal Minerals)			
Mineral	Total	'A' Category	'B' Category
Total	39	31	8
Apatite	1	-	1
Chromite	6	6	-
Copper Ore	4	4	-
Gold	5	4	1
Lead & Zinc	8	8	-
Manganese Ore	15	9	6

@ Excluding fuel, atomic & minor minerals.

'A' Mechanised Mines: > 150 labours in all
> 75 labours in workings below ground

'B' Other than 'A'

Decennial Growth in the Value of Mineral Production, 1955 to 2015-16[@] (By Groups) (Rs. Crore)				
Year	Total	Fuels	Metallic Minerals	Non-Metallic and Minor Minerals
1955	91	59	25	7
1965	290	196	38	56
1975	1112	807	151	154
1985	9094	7706	573	815
1995-96	33998	28065	2588	3345
2005-06	113354	85616	13903	13835
2015-16(P)	282966	189712(e)	33469	59785

@ Excluding atomic minerals.

Value of Mineral Production, 2006-07 to 2015-16[@] (By Mineral Groups)				
(Rs. Crore)				
Year	All Minerals	Fuels	Metallic Minerals	Non-Metallic and Minor Minerals
2006-07	131023	92905	18286	19832
2007-08	159658	102119	29182	28357
2008-09	174133	114717	35076	24340
2009-10	192115	133658	31734	26723
2010-11	267032	168581	47639	50812
2011-12	284149	178922	47025	58202
2012-13	280006	182689	43164	54153
2013-14	277360	186467	42390	48503
2014-15	290588	193373	37909	59306
2015-16(P)	282966	189712(e)	33469	59785

@ Excluding atomic minerals.

Value of Mineral Production[@] (By Minerals)		
		(Rs. Crore)
Minerals	2006-07	2015-16(P)
All Minerals	131023	282966
Coal(e)	34837	88382
Petroleum (crude)(e)	45679	67159
Natural Gas (utilised)(e)	9764	26670
Iron Ore	14204	22116
Lignite(e)	2626	7499
Limestone	2405	6053
Lead & Zinc Concentrates	1105	4283
Chromite	1450	2305
Silver	42	1521
Bauxite	385	1410
Manganese Ore	557	886
Copper Concentrates	312	626
Apatite & Phosphorite	195	328
Gold	217	321
Others	17245	53407

@ Excluding atomic minerals.

(e) Estimated for the year 2015-16.

Value of Mineral Production[@]		
(By States)		
		(Rs. Crore)
State	2006-07	2015-16(P)
India	131023	282966(e)
Andhra Pradesh	13680	11639
Assam	6586	10334
Bihar	1101	4283
Chhattisgarh	8967	21149
Gujarat	11200	17525
Jharkhand	8302	20606
Karnataka	3649	5844
Kerala	556	2760
Madhya Pradesh	7089	15968
Maharashtra	4364	11525
Meghalaya	811	2122
Odisha	10065	26704
Rajasthan	4537	34384
Tamil Nadu	3131	7287
Telangana	-	19081
Uttar Pradesh	3146	7060
West Bengal	3613	7811
Off-Shore	37647	54000
Others	2579	2884

@ Excluding atomic minerals.

(e) Includes estimated value for fuel minerals in the states wherever applicable.

Value of Mineral Production,[@] 2006-07 to 2015-16 (By Sectors) (Rs. Crore)			
Year	Total	Public Sector	Private Sector
2006-07	131023	89788	41235
2007-08	159658	100762	58896
2008-09	174133	115240	58893
2009-10	192114	121794	70320
2010-11	267032	141000	126032
2011-12	284149	152452	131697
2012-13	280006	156695	123311
2013-14	277360	167886	109474
2014-15	290588	174093	116495
2015-16(P)	282966(e)	169854(e)	113112(e)

@ Excluding atomic minerals.

(e) Includes estimated value for fuel minerals.

Value of Mineral Production & Number of Mines, 2015-16* (P) (By Sectors)			
	Total	Public Sector	Private Sector
No. of Mines	1542	135	1407
Total Value #	40162	12729	27433
Metallic #	33469	11928	21541
Non-metallic #	6693	801	5892

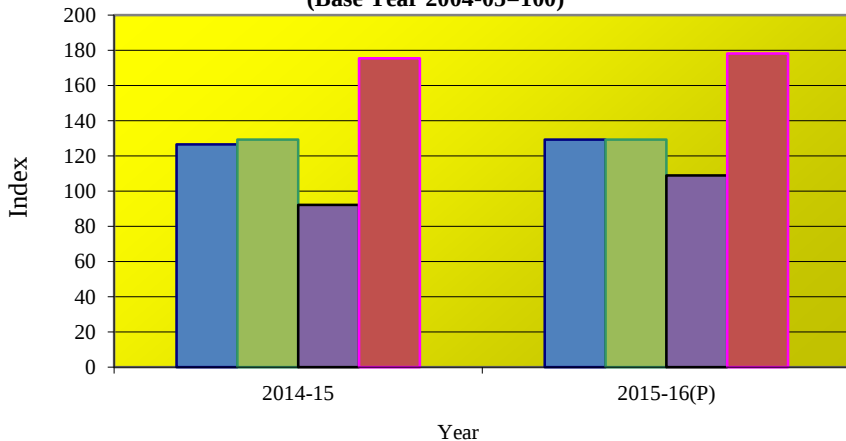
* Excluding fuel, atomic & minor minerals.

Value in Rs. Crore.

Index of Mineral Production

(By Groups)

(Base Year 2004-05=100)



■ All Minerals

■ Fuels

■ Metallic

■ Non-Metallic

Index of Mineral Production, 2006-07 to 2015-16 (By Mineral Groups)				
	(Base 1993-94 = 100)			
	All Minerals	Fuels	Metallic Minerals	Non-Metallic Minerals
Year/Weight	1000.000	857.180	80.765	42.327
2006-07	167.08	154.48	283.36	211.30
2007-08	173.55	159.43	311.28	210.63
2008-09	175.96	162.80	302.26	215.48
2009-10	193.36	183.00	291.38	239.14
2010-11	204.95	194.98	298.57	256.87
	(Base 2004-05 = 100)			
Year/Weight	1000.000	812.328	103.983	27.414
2011-12	128.5	129.4	115.4	150.6
2012-13	125.5	127.7	98.1	158.4
2013-14	124.7	125.5	106.7	162.1
2014-15	126.5	129.2	92.1	175.4
2015-16(P)	129.3	129.2	108.9	178.1

Note: - Weight of minor minerals production in the index of mineral is 19.728 for base year 1993-94 = 100 and it is 56.275 for base year 2004-05=100.

Wholesale Price Index, 2006-07 to 2015-16
(By Groups)

(Base 2004-05 = 100)

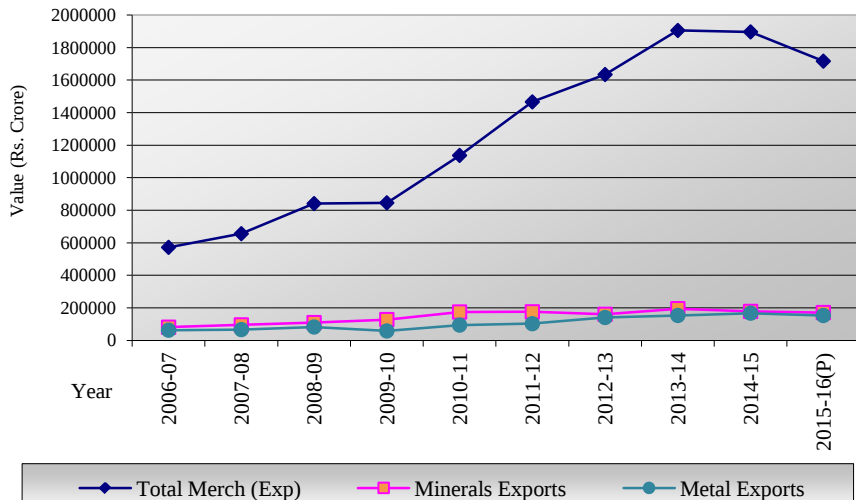
Year	All Commodities	Minerals	Metallic Minerals	Other Minerals	Mineral Oils
2006-07	111.35	136.61	162.14	108.38	127.40
2007-08	116.63	152.78	192.77	116.14	126.25
2008-09	126.02	186.52	266.15	144.19	141.84
2009-10	130.81	202.92	258.32	145.98	135.75
2010-11	143.32	253.28	373.78	153.37	157.47
2011-12	156.13	320.65	411.52	165.88	184.02
(Base 2011-12=100)					
2012-13	106.9	118.2	112.1	139.5	110.9
2013-14	112.5	114.4	105.2	146.8	121.6
2014-15	113.9	118.6	112.2	140.7	108.7
2015-16(P)	109.7	105.6	91.7	154.1	73.9

Gross Domestic Product (GDP) at Current Prices (Rs. Crore)			
Year	Total GDP	Mining & Quarrying	Percentage
2006-07	3953276	106787	2.7
2007-08	4582086	124812	2.7
2008-09	5303566	139828	2.6
2009-10	6108903	159304	2.6
2010-11	7248860	204866	2.8
2011-12	8391691	222716	2.7
2012-13	9252051	284771	3.1
Gross Value Added (GVA) at Current Prices (Rs. Crore)			
Year	Total GVA	Mining & Quarrying	Percentage
2013-14 (NS)	10380813	295978	2.8
2014-15(NS)	11472409	304300	2.7
2015-16(PE)	12279410	318672	2.6

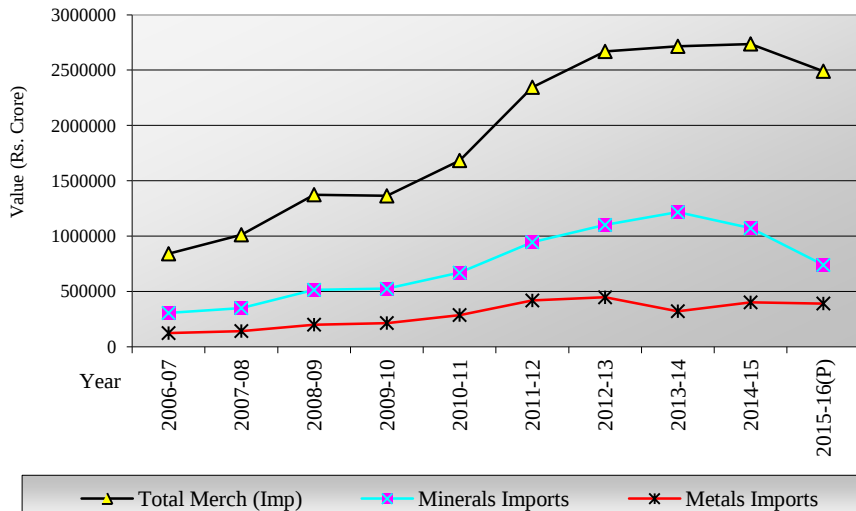
(NS) : New series (PE) : provisional estimates.

Exports Total Merchandise: Minerals & Metals					
(Rs. Crore)					
Year	Total Merchandise	Minerals	% Share	Metals	% Share
2006-07	571779	80931	14	62621	11
2007-08	655864	95022	14	66361	10
2008-09	840755	109296	13	82239	10
2009-10	845534	127831	15	57975	7
2010-11	1136964	174370	15	94052	8
2011-12	1465959	175310	12	102500	7
2012-13	1634318	160101	10	140614	9
2013-14	1905011	194784	10	153156	8
2014-15	1896348	178019	9	167296	9
2015-16(P)	1716378	170946	10	152913	9

Exports Total Merchandise : Minerals & Metals



Imports Total Merchandise : Minerals & Metals



Imports Total Merchandise : Minerals & Metals (Rs. Crore)					
Year	Total Merchandise	Minerals	% Share	Metals	% Share
2006-07	840506	305028	36	123461	15
2007-08	1012312	349507	35	141947	14
2008-09	1374436	514509	37	199489	15
2009-10	1363736	524830	38	214425	16
2010-11	1683467	669010	40	286835	17
2011-12	2345463	944430	40	418310	18
2012-13	2669162	1100800	41	446566	17
2013-14	2715434	1215827	45	321356	12
2014-15	2737086	1071733	39	401259	15
2015-16(P)	2490298	738789	30	390825	16

Consumption of Explosives, 2014-15 [@] (By Principal Minerals)		
(In tonnes)		
Mineral	Gun Powder	High Explosives
Total:	4	94762
Limestone	4	41598
Lead & Zinc Ore	-	20175
Iron Ore	-	17151
Manganese Ore	++	7655
Copper Ore	-	4447
Bauxite	-	2340
Gold	-	478
Chromite	-	450
Magnesite	-	248
Diamond	-	94
Wollastonite	-	89
Others	-	37

@ Excluding fuel, atomic and minor minerals.

Consumption of Explosives, 2014-15[@]
(By Principal Minerals)

(In thousands)

Mineral	Detonators (Nos.)		Fuses (Meters)	
	Ordinary*	Electric	Safety	Cordtex
Total	2209	4170	1933	14546
Bauxite	130	33	148	2175
Chromite	6	29	7	141
Copper Ore	2	397	3	998
Gold	-	398	-	244
Iron Ore	253	71	103	2204
Lead & Zinc Ore	707	516	-	1426
Manganese Ore	659	788	1230	1242
Diamond	++	1	36	-
Fluorite	2	-	-	-
Graphite	++	1	++	52
Kyanite	-	19	-	-
Limestone	312	1885	345	5819
Magnesite	103	32	61	187
Wollastonite	35	-	-	57

@ Excluding fuel, atomic and minor minerals.

**Includes other detonators*

Afforestation in Metalliferrous Mines during 2014-15^{\$} (By Principal Minerals)						
Mineral	Total Mines Covered	Area Covered (ha)	Trees		Survival	
			Planted (Nos.)	Survived (Nos.)	Percentage	('000 trees) per ha
Total	882	1893	2548727	2083199	81.73	1.10
Bauxite	78	65	166084	127070	76.51	1.95
Chromite	4	5	10630	8588	80.79	1.72
Copper	6	15	20600	17240	83.69	1.15
Dolomite	4	14	11100	9650	86.94	0.69
Iron ore	166	145	386799	296109	76.55	2.04
Iron & mn	21	16	123868	107021	86.40	6.69
Lead & Zinc	2	10	12300	11800	95.93	1.18
Limestone	497	1481	1699396	1408963	82.91	0.95
Manganese	28	45	41600	36640	88.08	0.81
Magnesite	5	1	770	534	69.35	0.53
Others	71	96	75580	59584	78.84	0.62

\$: Data for 2015-16 not available.

Section – 2

Mineral Production

Production, Value, Employment and Reporting Mines, 2006-07 to 2015-16, (Principal Minerals)	Coal	: 36
	Lignite	: 37
	Petroleum (Crude)	: 38
	Natural gas (Utilised)	: 39
	Bauxite	: 40
	Chromite	: 41
	Copper Ore & Concentrates	: 42
	Gold Ore and Gold	: 43
	Iron Ore	: 44
	Lead & Zinc Ore and Concentrates	: 45
	Manganese Ore	: 46
	Apatite & Phosphorite	: 47
	Diamond	: 48
	Kyanite	: 49
	Limestone	: 50
	Magnesite	: 51
	Sillimanite	: 52

Section-2

Mineral Production

Fuel Minerals

The steady rise in the production of coal continued during the decade under review and reached the level of 639 million tonne during 2015-16. The production of lignite declined in 2008-09 and 2013-14 and also during the decade ending 2015-16 and was at 43.8 million tonne. The production of petroleum (crude) was fluctuating during the decade and reached to 37 million tonne in 2015-16 from 34 million tonne in 2006-07. The output of natural gas (utilised) in 2010-11 at 52219 m.cu.m. attained the highest level of the decade but declined thereafter gradually and reached to 32249 m.cu.m. in 2015-16.

Metallic Minerals

The production of bauxite during the decade was 23 million tonne in 2007-08, then declined till 2010-11 and increased thereafter gradually to 28 million tonne in 2015-16. The production of chromite which had decreased 25% in 2014-15 as compared to the year 2013-14 rose to 2.9 million in 2015-16 showing an increase of 34%. The output of copper ore and concentrates had a fluctuating trend during the

decade and their respective production in 2015-16 was 3908 thousand tonne and 143 thousand tonne with increase of about 11% and 32% respectively over the preceding year. During the decade ending 2015-16, the production of iron ore touched the highest level of 219 million tonnes in 2009-10. Then it declined till every year except 2013-14 and was at 155.9 million tonne in 2015-16 with 21% increase over the preceding year. The production of manganese ore showed fluctuating trend during the decade and touched the highest level of 3.1 million tonne in 2010-11 and was at 2.1 million tonne in 2015-16 with a decrease of about 9% as compared to the previous year. The production of lead and zinc ores at 10453 thousand tonne, lead concentrates at 262 thousand tonne and that of zinc concentrates at 1474 thousand tonne in 2015-16 was at the highest level in the decade with a nominal decrease of zinc conc. as compared to the previous year.

Non-Metallic Minerals

During the decade ending 2015-16, the production of apatite & phosphorite touched the highest level of 2.3 million tonnes in 2011-12 and it was 1474 thousand tonnes in 2015-16 showing decrease of 8% over the previous year. The production of diamond showed declining trend in the initial years of the decade but increased during 2011-12 to 2013-14. It stands at 36 thousand carats in both the years 2014-15 and 2015-16.

The output of kyanite at 8 thousand tonne was highest the beginning of the decade and maintained a fluctuating trend. It was three thousand tonne in 2015-16 showing a decrease of 50% over the previous year. The production of limestone showed an increasing trend during the decade ending 2015-16 except a marginal decrease in 2007-08 and 2013-14. Its production at 304 million tonnes in 2015-16 was 4% higher over the preceding year and was also at highest level of the decade. The production of magnesite showed mixed trend during the decade ending 2015-16 and it was 265 thousand tonne during 2015-16, showing a decrease of 7% as compared to the previous year.

Production of Coal, 2006-07 to 2015-16				
Year	No. of* Mines	Quantity (Lakh tonnes)	Value (Rs. Crore)	Labour* Employed (Av. Daily)**
2006-07	561	4308	34837	371490
2007-08	559	4571	38465	357467
2008-09	561	4928	45537	356848
2009-10	560	5320	51318	360705
2010-11	559	5327	62021	355721
2011-12	559	5400	70172	352930
2012-13	559	5564	74719	345302
2013-14	536	5658	82535	338896
2014-15	539	6092	89287	343548
2015-16(P)	493	6392	88382(e)	343548

* *Excluding Meghalaya*

** *Data relates to calendar year*

Production of Lignite, 2006-07 to 2015-16				
Year	No. Of Mines	Quantity (Lakh tonnes)	Value (Rs. Crore)	Labour Employed (Av. Daily)
2006-07	9	313	2626	14246
2007-08	11	340	2961	14246
2008-09	13	324	3688	12566
2009-10	13	341	3776	13245
2010-11	14	377	4331	14406
2011-12	14	423	5338	13107
2012-13	16	465	5511	13212
2013-14	16	443	5968	13976
2014-15	19	483	8163	12356
2015-16(P)	19	438	7499(e)	12356

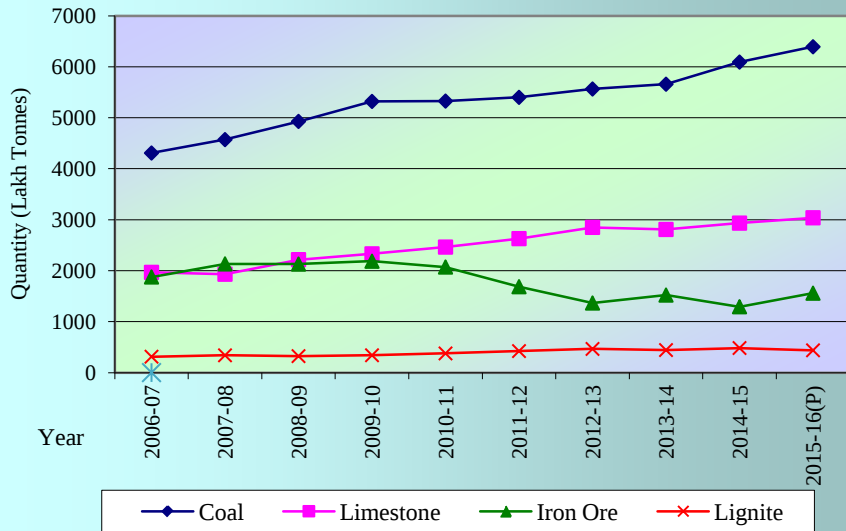
Production of Petroleum (Crude), 2006-07 to 2015-16		
Year	Quantity (‘000 tonnes)	Value (Rs. Crore)
2006-07	33988	45679
2007-08	34118	49694
2008-09	33508	53385
2009-10	33690	60789
2010-11	37684	68804
2011-12	38090	69202
2012-13	37862	68817
2013-14	37788	68683
2014-15	37461	68088
2015-16(P)	36950	67159(e)

Production of Natural Gas (Utilised), 2006-07 to 2015-16

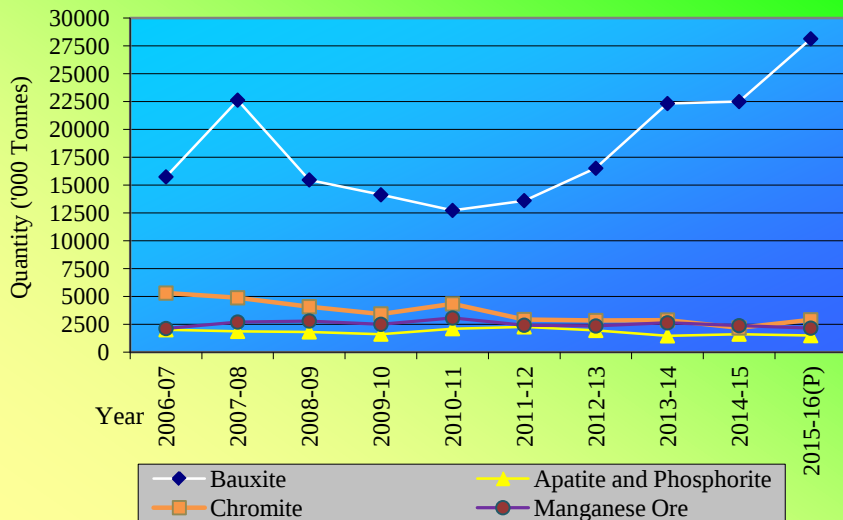
Year	Quantity (m.cu.m.)	Value (Rs. Crore)
2006-07	31747	9764
2007-08	32417	11000
2008-09	32845	12107
2009-10	47496	17775
2010-11	52219	33425
2011-12	47559	34211
2012-13	40679	33642
2013-14	35407	29282
2014-15	33657	27835
2015-16(P)	32249	26670(e)

Production of Bauxite, 2006-07 to 2015-16				
Year	No. of Mines	Quantity ('000 tonnes)	Value (Rs. Crore)	Labour Employed (Av. Daily)
2006-07	197	15733	385	8082
2007-08	209	22625	568	8971
2008-09	198	15460	470	8546
2009-10	197	14124	489	8178
2010-11	193	12723	512	7851
2011-12	172	13600	613	7684
2012-13	178	16508	796	7410
2013-14	177	22319	1000	6854
2014-15	162	22494	1192	6698
2015-16(P)	177	28134	1410	6281

Production of Principal Minerals-I



Production of Principal Minerals-II



Production of Chromite, 2006-07 to 2015-16				
Year	No. of Mines	Quantity ('000 tonnes)	Value (Rs.Crore)	Labour Employed (Av. Daily)
2006-07	21	5296	1450	6157
2007-08	20	4873	2142	5982
2008-09	24	4073	2263	6359
2009-10	22	3426	1045	6735
2010-11	21	4326	2596	6862
2011-12	22	2923	2424	6845
2012-13	25	2834	2263	6761
2013-14	26	2878	2376	6277
2014-15	26	2164	1880	6772
2015-16(P)	24	2894	2305	6416

Production of Copper Ore and Concentrates, 2006-07 to 2015-16					
Year	No. of Mines	Copper Ore Quantity ('000 tonnes)	Copper Concentrates		Labour Employed (Av. Daily)
			Quantity ('000 tonnes)	Value (Rs. Crore)	
2006-07	4	3274	150	312	1661
2007-08	4	3242	150	347	1835
2008-09	4	3452	138	409	2291
2009-10	4	3271	125	381	2611
2010-11	4	3602	137	473	2712
2011-12	4	3479	130	539	2774
2012-13	5	3636	124	629	2898
2013-14	5	3778	139	668	3324
2014-15	5	3505	108	529	3473
2015-16(P)	5	3908	143	626	3231

Production of Gold Ore and Gold, 2006-07 to 2015-16							
Year	No. of Mines	Gold Ore Qty. ('000 tonnes)	Gold				Labour Employed (Av. Daily)
			Primary	Secondary	Total		
			Qty (Kg.)	Qty (Kg.)	Qty (Kg.)	Value (Rs.Crore)	
2006-07	3	513	2361	127	2488	229	2943
2007-08	4	681	2969	-	2969	302	3064
2008-09	4	587	2438	-	2438	315	3210
2009-10	4	518	2084	-	2084	343	3210
2010-11	4	742	2399	-	2399	435	3150
2011-12	4	492	2194	-	2194	531	3100
2012-13	4	503	1588	-	1588	517	3204
2013-14	4	420	1564	-	1564	423	3433
2014-15	5	447	1441	-	1441	360	3429
2015-16(P)	5	535	1323	-	1323	321	3408

Note :- No. of Mines and labour employed relates to primary gold.

Production of Iron Ore, 2006-07 to 2015-16				
Year	No. of Mines	Quantity (Lakh tonnes)	Value (Rs. Crore)	Labour Employed (Av. Daily)
2006-07	290	1877	14204	39341
2007-08	314	2133	23379	46056
2008-09	328	2130	28544	42702
2009-10	320	2186	26462	43557
2010-11	336	2072	39614	46147
2011-12	309	1686	38357	46673
2012-13	310	1366	32824	42645
2013-14	322	1522	31649	39127
2014-15	320	1293	27664	39243
2015-16(P)	297	1559	22116	39613

Production of Lead & Zinc Ore and Concentrates, 2006-07 to 2015-16

Year	No. of Mines	Lead & Zinc Ore Qty. ('000 tonnes)	Lead Concentrates		Zinc Concentrates		Labour Empl-oyed (Av. Daily)
			Qty. ('000 tonnes)	Value (Rs. Crore)	Qty. ('000 tonnes)	Value (Rs. Crore)	
2006-07	7	5140	107	133	947	971	3914
2007-08	7	5783	126	144	1036	939	3991
2008-09	7	6681	134	136	1224	947	4157
2009-10	7	7102	134	177	1280	1306	3859
2010-11	6	7540	148	200	1427	1793	3408
2011-12	6	8042	162	245	1414	1986	3980
2012-13	8	8633	184	330	1493	2395	4665
2013-14	8	9282	194	437	1491	2739	7116
2014-15	8	9363	198	564	1489	3157	7222
2015-16(P)	8	10453	262	789	1474	3494	6916

Production of Manganese Ore, 2006-07 to 2015-16

Year	No. of Mines	Quantity (‘000 tonnes)	Value (Rs. Crore)	Labour Employed (Av. Daily)
2006-07	114	2116	557	12893
2007-08	130	2697	1206	13226
2008-09	149	2789	1774	13796
2009-10	142	2492	1191	13806
2010-11	149	3056	1468	13682
2011-12	145	2412	1178	14258
2012-13	172	2342	1284	15550
2013-14	163	2626	1518	16659
2014-15	161	2369	1366	15504
2015-16(P)	145	2148	886	12213

Production of Apatite and Phosphorite, 2006-07 to 2015-16

Year	No. of Mines	Quantity ('000 tonnes)	Value (Rs. Crore)	Labour Employed (Av. Daily)
2006-07	7	2003	195	1535
2007-08	8	1856	215	1672
2008-09	9	1810	310	1501
2009-10	9	1611	312	1507
2010-11	9	2101	502	1749
2011-12	7	2263	750	1604
2012-13	7	1942	681	1350
2013-14	7	1455	476	1205
2014-15	7	1608	376	1229
2015-16(P)	7	1474	328	1048

Production of Diamond, 2006-07 to 2015-16				
Year	No. of Mines	Quantity ('000 carats)	Value (Rs. Crore)	Labour Employed (Av. Daily)
2006-07	2	2	1	220
2007-08	2	0.6	1	197
2008-09	2	0.5	0.5	154
2009-10	2	17	12	167
2010-11	2	11	11	163
2011-12	2	18	20	167
2012-13	2	32	37	180
2013-14	2	38	61	157
2014-15	2	36	61	176
2015-16(P)	2	36	62	156

Production of Kyanite,2006-07 to 2015-16				
Year	No. of Mines	Quantity ('000 tonnes)	Value (Rs. Crore)	Labour Employed (Av. Daily)
2006-07	7	8	0.8	151
2007-08	6	5	0.5	149
2008-09	5	5	0.5	125
2009-10	4	5	0.6	115
2010-11	5	6	0.6	127
2011-12	3	4	0.5	56
2012-13	4	1	0.1	55
2013-14	4	4	0.8	64
2014-15	3	6	1.2	57
2015-16(P)	5	3	1.4	85

Production of Limestone, 2006-07 to 2015-16				
Year	No. of Mines	Quantity (Lakh tonnes)	Value (Rs. Crore)	Labour Employed (Av. Daily)
2006-07	583	1967	2405	18758
2007-08	553	1931	2400	17865
2008-09	601	2216	2922	19446
2009-10	565	2330	3248	21006
2010-11	592	2463	3635	19213
2011-12	686	2629	4086	22328
2012-13	778	2850	4797	22615
2013-14	779	2809	5133	22978
2014-15	785	2933	5800	23801
2015-16(P)	792	3038	6053	22797

Production of Magnesite, 2006-07 to 2015-16				
Year	No. of Mines	Quantity ('000 tonnes)	Value (Rs. Crore)	Labour Employed (Av. Daily)
2006-07	12	239	34	1285
2007-08	10	253	33	880
2008-09	10	253	36	770
2009-10	8	301	44	899
2010-11	10	236	38	899
2011-12	11	224	35	777
2012-13	15	224	46	964
2013-14	14	197	45	818
2014-15	19	285	75	935
2015-16(P)	19	265	70	932

Production of Sillimanite, 2006-07 to 2015-16				
Year	No. of Mines	Quantity ('000 tonnes)	Value (Rs. Crore)	Labour Employed (Av. Daily)
2006-07	4	26	10	1940
2007-08	4	41	18	1924
2008-09	4	34	24	2050
2009-10	4	34	26	2066
2010-11	4	49	41	1790
2011-12	4	59	52	1683
2012-13	5	44	35	1767
2013-14	5	67	41	2166
2014-15	4	66	46	1720
2015-16(P)	4	70	50	1778

Section–3

Production of Metals & Alloys

Production of	Iron & Steel	: 56
Metals and	Ferro-Alloys	: 57
Alloys,	Alumina and Aluminium	: 58
2006-07 to	Copper	: 59
2015-16	Gold and Silver	: 60
	Lead & Zinc	: 61

Section – 3

Production of Metals & Alloys

Ferrous Metals

The output of finished steel showed a continuous upward trend in production during the decade except in 2008-09 and again a fall of 8% was seen in 2015-16 over the previous year. It was 97 million tonnes during the year 2015-16. Similarly, upward trend in production of semi-finished steel was also observed during the decade except in the years 2007-08 and 2008-09 and again a drastic decline of 43% was observed ending 2015-16. It was 37 million tonnes during the year 2015-16.

Ferro-Alloys

Increasing trend in production of ferro-chrome was observed during the decade ending 2015-16 till 2012-13 and maintained the level of 944 thousand tonne in last four years of the decade. The output of ferro-manganese showed mixed trend in the decade and it was 518 thousand tonne during 2015-16. The production of ferro-silicon also had an increasing trend and was 90 thousand tonne during year 2015-16.

Non-ferrous Metals

Among the non-ferrous metals, India has achieved self-sufficiency in aluminium and zinc. The production of alumina rose steadily, except in 2006-07, 2009-10 and 2012-13 and reached the highest level of the of decade at 4172 thousand tonne in 2015-16, registering an increase of 4% as compared to that in the

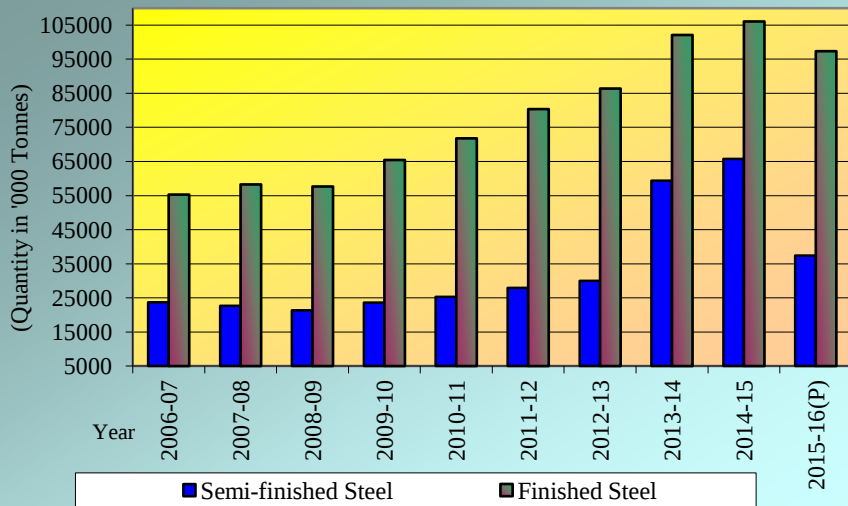
previous year. The production of aluminium increased steadily during the decade except in 2013-14, and at 2355 thousand tonne it reported 16% increase as compared to the previous year.

The production of copper (blister)/anode showed mixed trend in the decade and it was at 17 thousand tonnes during 2015-16. The production of copper (cathode) at 790 thousand tonnes and that of copper (CCWR) at 390 thousand tonne in 2015-16 registered an increase of 3% and 15% respectively in both the metals as compared to the level of previous year.

There was a fluctuating trend in the production of gold (including by product recovery from imported copper cathodes) during the decade and was 10412 kg. in 2015-16, 4% higher than that of the preceding year. The production of silver, a by-product, at 426 tonne in 2015-16 was 30% higher as compared to the previous year.

The output of lead (primary) showed increasing trend during the decade except in 2010-11 and during 2015-16 the production of lead (primary) at 145 thousand tones was 14% higher than the previous year. The output of zinc ingots also maintained a rising trend during the decade except in 2012-13 and 2014-15 but during 2015-16 it was 759 thousand tonnes, 4% higher as compared to the previous year.

Production of Iron & Steel



Production of Iron and Steel, 2006-07 to 2015-16 ('000 tonnes)		
Year	Semi-finished Steel [@]	Finished Steel*
2006-07	23692	55287
2007-08	22685	58263
2008-09	21367	57659
2009-10	23561	65428
2010-11	25273	71775
2011-12	27928	80352
2012-13	29984	86381
2013-14	59379	102090
2014-15	65793	106052
2015-16(P)	37445	97340

[@]*Including Steel ingots*

* *Including C.R. Sheets*

Source: Joint Plant Committee, Kolkata

Production of Principal Ferro-Alloys, 2006-07 to 2015-16 ('000 tonnes)			
Year	Ferro-Chrome	Ferro-Manganese	Ferro-Silicon
2006-07	363	156	69
2007-08	383	163	69
2008-09	618	332	81
2009-10	922	513	81
2010-11	938	511	81
2011-12	943	517	89
2012-13	944	518	90
2013-14	944	518	90
2014-15	944	518	90
2015-16(P)	944	518	90

Source: Joint Plant Committee, Kolkata.

Production of Alumina & Aluminium, 2006-07 to 2015-16 ('000 tonnes)		
Year	Alumina	Aluminium
2006-07	2811	1114
2007-08	3320	1240
2008-09	3620	1347
2009-10	3433	1481
2010-11	3577	1621
2011-12	3931	1654
2012-13	3610	1720
2013-14	3779	1667
2014-15	4024	2027
2015-16(P)	4172	2355

Production of Copper, 2006-07 to 2015-16			
('000 tonnes)			
Year	Blister/ Anode	Cathode	CCWR
2006-07	51	511	276
2007-08	45	501	284
2008-09	29	514	314
2009-10	18	533	312
2010-11	14	512	300
2011-12	19	505	288
2012-13	17	494	285
2013-14	17	644	283
2014-15	16	766	338
2015-16(P)	17	790	390

CCWR: Continuous Cast Wire Rod.

Production of Gold* and Silver*, 2006-07 to 2015-16 (Kilograms)		
Year	Gold	Silver
2006-07	12823	101633
2007-08	12104	133635
2008-09	7309	142590
2009-10	11198	183656
2010-11	9360	193376
2011-12	11286	263910
2012-13	8304	434569
2013-14	9209	349774
2014-15	9988	327647
2015-16(P)	10412	426443

**Includes production reported from HINDALCO Industries Ltd.*

Production of Lead and Zinc, 2006-07 to 2015-16 ('000 tonnes)		
Year	Lead (Primary)	Zinc Ingots
2006-07	45	381
2007-08	58	457
2008-09	60	579
2009-10	64	614
2010-11	57	740
2011-12	92	784
2012-13	118	704
2013-14	123	767
2014-15	127	733
2015-16(P)	145	759

Section – 4

Foreign Trade

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Section-4

Export

The value of exports of minerals excluding petroleum (crude) from India, showed increasing trend in the decade except in 2012-13, 2014-15 and 2015-16. It was Rs. 170946 crore during 2015-16 which decreased by 4% as compared to its value in 2014-15. Diamond accounted for 83% of the total value of exports of minerals during 2015-16 followed by granite 5%, alumina 2% and iron ore 1%.

India imports diamond (uncut) and after cutting & polishing exports the same thus earning substantial foreign exchange by value addition. The share of diamond in the value of exports of minerals increased from 77% to 83% during the period 2011-12 to 2015-16.

The export of iron ore had a fluctuating trends throughout the decade ending 2015-16 and at 5.4 million tonnes during 2015-16 was lowest of the decade.

Granite is one of the leading foreign exchange earners during the decade. The value of its exports at Rs. 9272 crore in 2015-16 registered 6% decrease as compared to 2014-15.

The exports of manganese ore has decreased from 289 thousand tonne in 2009-10 to nominal quantity in 2015-16. The value of exports of manganese ore also declined continuously from 121 crore in 2008-09 to 2 crore in 2015-16.

Other notable mineral items exported from India during 2015-16 were alumina, barytes, bauxite, chromite, coal, garnet (abrasive), marble, titanium ores & conc., emerald (cut & uncut) and some precious & semi-precious stones, zinc ore & concentrates, etc.

Imports

The value of imports of minerals and metals went up steeply from Rs. 428489 crore in 2006-07 to the level of Rs. 1547366 crore in 2012-13 and started declining and was at 1129614 crore in the year 2015-16. During the year 2015-16, the share of petroleum (crude) in the total value of imports of minerals was 58% and that of diamond 15%, coal 12%, natural gas 6% and copper ore & concentrates 4%. The value of import of petroleum (crude) was Rs. 429400 crore in 2015-16 and that of diamond was Rs. 110378 crore.

India imported 204 million tonnes of coal valued at Rs. 86107 crore in 2015-16. The quantity of imports of petroleum (crude) went up steadily from 107 million tonnes in 2006-07 to 202 million tonnes in 2015-16.

The imports of rock phosphate fluctuated during the decade ending 2015-16. The quantity of imports of rock phosphate at 8.04 million tonne decreased by 3% in the year 2015-16 and the value of its imports increased 5% as compared to the year 2014-15.

The imports of sulphur (excluding precipitated, sublimed and colloidal) were at the level at 1.4 million tonnes in 2006-07, fluctuated during the decade and it was 1.43 million tonnes during 2016-17. The value of its imports was Rs. 1417 crore in 2015-16.

Coke, copper ores & concentrates, asbestos, emerald (cut & uncut), precious and semi-precious stones, manganese ore, marble and molybdenum ores & concentrates etc. were the other important minerals imported into India in 2015-16.

Exports of Chromite, 2006-07 to 2015-16		
Year	Quantity ('000 tonnes)	Value (Rs. Crore)
2006-07	1203	794
2007-08	907	1223
2008-09	1899	974
2009-10	689	801
2010-11	173	286
2011-12	225	489
2012-13	196	311
2013-14	195	347
2014-15	25	66
2015-16(P)	72	131

Exports of Granite, 2006-07 to 2015-16		
Year	Quantity ('000 tonnes)	Value (Rs. Crore)
2006-07	3292	4725
2007-08	3701	4287
2008-09	3959	4815
2009-10	3828	4994
2010-11	4500	5593
2011-12	4605	6382
2012-13	6061	7942
2013-14	6802	9869
2014-15	6563	9832
2015-16(P)	5675	9272

Value of Exports of Granite, 2011-12 to 2015-16 (By Principal Countries) (Rs. Crore)					
Country	2011-12	2012-13	2013-14	2014-15	2015-16(P)
All Countries	6382	7942	9869	9832	9272
China	1920	2681	3266	3022	2590
USA	934	1206	1613	1600	1641
Germany	309	312	349	405	357
Turkey	277	346	392	431	343
Vietnam Soc Rp	51	59	112	162	316
UK	233	262	304	295	280
UAE	185	230	271	315	262
Italy	288	244	281	312	255
Poland	144	152	205	261	207
Chinese Taipei/Taiwan	165	157	199	190	203
Other	1876	2293	2877	2839	2818

Exports of Iron Ore, 2006-07 to 2015-16		
Year	Quantity (Lakh tonnes)	Value (Rs. Crore)
2006-07	914	17656
2007-08	685	23400
2008-09	689	21725
2009-10	1015	28366
2010-11	469	21416
2011-12	472	22184
2012-13	181	8985
2013-14	163	9481
2014-15	73	3144
2015-16(P)	54	1264

Value of Exports of Iron Ore, 2011-12 to 2015-16
(By Principal Countries)

(Rs. Crore)

Country	2011-12	2012-13	2013-14	2014-15	2015-16(P)
All Countries	22184	8985	9481	3144	1264
China P Rp	20100	7698	7338	1190	1032
Japan	1264	1013	1487	1125	++
Iran	++	N.A.	34	483	203
Korea Rp	478	76	307	305	N.A.
Oman	N.A.	N.A.	180	4	++
UAE	9	8	6	1	10
Malaysia	++	N.A.	N.A.	++	8
Vietnam Soc Rp	N.A.	++	30	++	2
Others	333	190	99	36	9

Exports of Manganese Ore, 2006-07 to 2015-16		
Year	Quantity ('000 tonnes)	Value (Rs. Crore)
2006-07	157	45
2007-08	208	83
2008-09	205	121
2009-10	289	117
2010-11	99	80
2011-12	75	44
2012-13	72	27
2013-14	66	19
2014-15	11	7
2015-16(P)	++	2

Exports of Marble, 2006-07 to 2015-16		
Year	Quantity (’000 tonnes)	Value (Rs. Crore)
2006-07	290	281
2007-08	311	408
2008-09	307	363
2009-10	276	305
2010-11	522	327
2011-12	325	386
2012-13	371	543
2013-14	338	570
2014-15	326	599
2015-16(P)	290	600

Exports of Mica, 2006-07 to 2015-16		
Year	Quantity (’000 tonnes)	Value (Rs. Crore)
2006-07	81	109
2007-08	100	125
2008-09	191	180
2009-10	94	162
2010-11	127	226
2011-12	132	289
2012-13	128	346
2013-14	128	376
2014-15	141	426
2015-16(P)	136	423

Imports of Asbestos, 2006-07 to 2015-16		
Year	Quantity (’000 tonnes)	Value (Rs. Crore)
2006-07	253	519
2007-08	312	590
2008-09	347	874
2009-10	331	939
2010-11	366	1003
2011-12	378	1199
2012-13	460	1900
2013-14	286	1330
2014-15	396	1717
2015-16(P)	356	1487

Imports of Coal, 2006-07 to 2015-16		
Year	Quantity (’000 tonnes)	Value (Rs. Crore)
2006-07	43079	16689
2007-08	49792	20739
2008-09	59004	41341
2009-10	73257	39180
2010-11	68918	41549
2011-12	102841	78827
2012-13	145790	86851
2013-14	166861	92335
2014-15	212106	104530
2015-16(P)	204000	86107

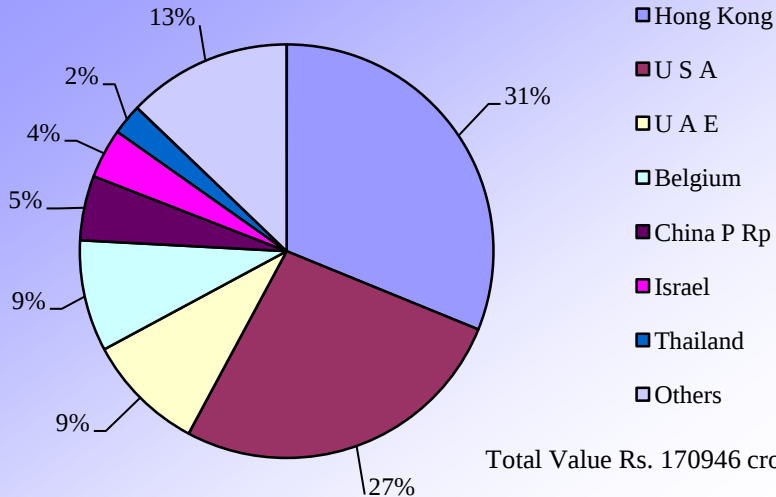
Imports of Petroleum (Crude), 2006-07 to 2015-16		
Year	Quantity (Lakh tonnes)	Value (Rs. Crore)
2006-07	1068	213088
2007-08	1153	257462
2008-09	1300	346845
2009-10	1536	365901
2010-11	1531	421616
2011-12	1657	643689
2012-13	1855	785602
2013-14	1892	869657
2014-15	1879	709379
2015-16(P)	2023	429400

Imports of Rock Phosphate, 2006-07 to 2015-16		
Year	Quantity (’000 tonnes)	Value (Rs. Crore)
2006-07	5009	1614
2007-08	5018	1853
2008-09	5010	4840
2009-10	5684	3275
2010-11	5194	3211
2011-12	9730	8315
2012-13	8161	7310
2013-14	7161	5518
2014-15	8273	6189
2015-16(P)	8038	6529

Imports of Sulphur*, 2006-07 to 2015-16		
Year	Quantity (’000 tonnes)	Value (Rs. Crore)
2006-07	1402	494
2007-08	1406	1456
2008-09	1286	2994
2009-10	1534	681
2010-11	1357	1098
2011-12	2038	2283
2012-13	1547	1736
2013-14	1290	1100
2014-15	1626	1745
2015-16(P)	1433	1417

** Excluding sublimed, ppt and colloidal.*

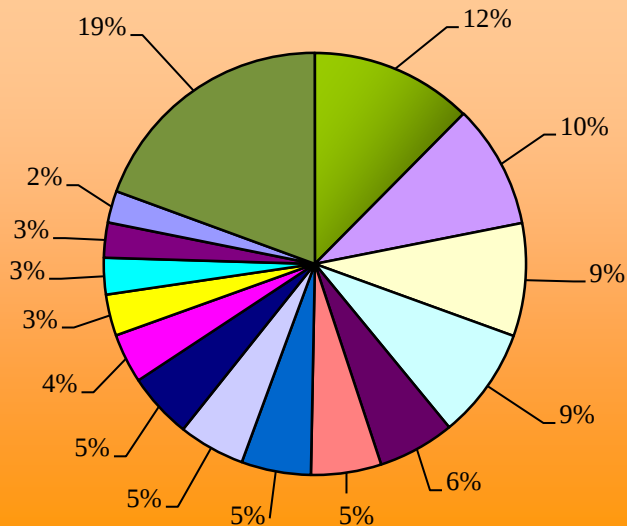
Value of Minerals Export, 2015-16 (By Principal Countries)



Value of Exports of Minerals, 2015-16(P) (By Principal Countries)		
Country	Value (Rs. Crore)	Percentage Contribution
Total	170946	100
Hong Kong	53287	31
U S A	45598	27
U Arab Emirates	15877	9
Belgium	14896	9
China P Rp	8628	5
Israel	6632	4
Thailand	4090	2
UK	2175	1
Japan	2000	1
Singapore	1926	1
Switzerland	1352	1
Australia	1185	1
Bangladesh	1140	1
Others	12160	7

Value of Exports of Metals, 2015-16(P) (By Principal Countries)		
Country	Value (Rs. Crore)	Percentage Contribution
Total	152913	100
U Arab Emirates	42696	28
U S A	13888	9
China P Rp	9258	6
Korea Rp	6964	5
Malaysia	5113	3
Nepal	4028	3
Italy	3740	2
Germany	3543	2
Saudi Arab	3120	2
Singapore	3114	2
Belgium	2698	2
U K	2621	2
Iran	2472	2
Bangladesh	2438	2
Mexico	2329	2
Netherland	2278	1
Chinese Taipei/Taiwan	2257	1
Others	40356	26

Value of Minerals Import, 2015-16 (By Principal Countries)



Total Value
Rs. 738789 crore

Value of Imports of Minerals, 2015-16(P) (By Principal Countries)		
Country	Value (Rs. Crore)	Percentage Contribution
Total	738789	100
Saudi Arab	91783	12
Iraq	70046	9
Nigeria	63793	9
U Arab Emts	62901	9
Belgium	43277	6
Qatar	39821	5
Australia	39331	5
Indonesia	37555	5
Venezuela	36998	5
Iran	27957	4
Kuwait	23432	3
Hong Kong	20687	3
South Africa	19839	3
Angola	17937	2
Others	143432	20

Value of Imports of Metals, 2015-16(P) (By Principal Countries)		
Country	Value (Rs. Crore)	Percentage Contribution
Total	390825	100
Switzerland	114699	29
China P Rp	32882	8
U Arab Emts	31857	8
U S A	23433	6
Korea Rp	19064	5
Ghana	18288	5
U K	15316	4
South Africa	14513	4
Japan	13465	3
Australia	9091	2
Russia	7983	2
Malaysia	6881	2
Other	83353	22

Exports, Imports and Net Trade in Minerals and Metals, 2006-07 to 2015-16
(Rs. Crore)

Year	Minerals and Metals (Including Petroleum)			Minerals (Excluding Petroleum Crude)		
	Exports	Imports	Difference	Exports	Imports	Difference
2006-07	143552	428489	-284937	80606	91940	-11334
2007-08	161383	491454	-330071	94913	92045	+2868
2008-09	191536	713998	-522462	109156	167664	-58508
2009-10	185807	739255	-553448	127742	158929	-31187
2010-11	268423	955845	-687422	174370	247394	-73024
2011-12	277809	1362740	-1084931	175237	300742	-125505
2012-13	300715	1547366	-1246651	160101	315198	-155097
2013-14	347940	1537183	-1189243	194784	346169	-151385
2014-15	345315	1472992	-1127677	178019	362353	-184334
2015-16(P)	323859	1129614	-805755	170946	309389	-138443

Exports, Imports and Net Trade in Minerals and Metals, 2006-07 to 2015-16 (Rs. Crore)						
Year	Petroleum Crude			Metals		
	Exports	Imports	Difference	Exports	Imports	Difference
2006-07	325	213088	-212763	62621	123461	-60840
2007-08	109	257462	-257353	66361	141947	-75586
2008-09	140	346845	-346705	82239	199489	-117250
2009-10	89	365901	-365812	57975	214425	-156450
2010-11	++	421616	-421616	94052	286835	-192783
2011-12	72	643689	-643617	102500	418310	-315810
2012-13	-	785602	-785602	140614	446566	-305952
2013-14	-	869657	-869657	153156	321356	-168200
2014-15	-	709379	-709379	167296	401259	-233963
2015-16(P)	-	429400	-429400	152913	390825	-237912

**Share of Principal Minerals in the Value of Mineral Exports,
2011-12 to 2015-16**

Exports

Year	Exports of all Minerals (Rs. Crore)	Percentage Share of Principal Minerals						
		Diamond*	Granite	Alumina	Iron Ore	Emerald (Cut & Uncut)	Precious & Semi-Precious Stones (Cut & Uncut)	Others
2011-12	175310	77	4	1	13	++	1	4
2012-13	160101	79	5	1	6	2	1	6
2013-14	194784	81	5	1	5	1	1	6
2014-15	178019	83	6	2	2	1	1	5
2015-16(P)	170946	83	5	2	1	1	1	7

* Includes mostly cut, industrial and powder.

**Share of Principal Minerals in the Value of Mineral Imports,
2011-12 to 2015-16**

Imports

Year	Imports of All Minerals (Rs. Crore)	Percentage Share of Principal Minerals						
		Petroleum (Crude)	Diamond*	Coal	Natural Gas	Copper Ore & Conc.	Coke	Others
2011-12	944430	68	14	8	3	3	1	3
2012-13	1100800	71	11	8	4	3	1	2
2013-14	1215827	72	11	8	4	3	1	1
2014-15	1071733	66	12	10	5	3	++	4
2015-16(P)	738789	58	15	12	6	4	++	5

** Includes mostly cut, industrial and powder.*

Share of Principal Countries in the Value of Exports of Diamond, 2011-12 to 2015-16									
Exports of Diamond (Mostly Cut)									
Year	Value of Exports (Rs. Crore)	Percentage Share of Principal Importing Countries							
		Hong Kong	USA	Belgium	UAE	Israel	Thailand	Singapore	Others
2011-12	133881	32	18	12	22	5	2	1	8
2012-13	126568	35	22	10	19	5	2	1	6
2013-14	158005	35	23	10	17	5	3	1	6
2014-15	148056	38	27	11	10	5	3	1	5
2015-16(P)	142664	36	30	10	10	5	3	1	5

Share of Principal Countries in the Value of Imports of Diamond, 2011-12 to 2015-16 Imports of Diamond (Mostly Cut)									
Year	Value of Imports (Rs. Crore)	Percentage Share of Principal Exporting Countries							
		Belgium	UAE	Hong Kong	Russia	Israel	Saudi Arab	Botswana	Others
2011-12	132181	30	26	25	2	5	N.A.	++	12
2012-13	117568	38	25	16	3	6	N.A.	++	12
2013-14	134117	40	25	14	3	5	1	2	10
2014-15	125035	44	20	11	4	5	3	4	9
2015-16(P)	110378	39	22	11	7	6	3	3	9

**Production, Exports/Imports and Apparent Consumption
as Percentage of Total Availability, 2015-16(P)
(By Selected Minerals)**

Mineral	Total Availability* ('000 tonnes)	Percentage Share of			
		Gross Production	Imports	Exports	Apparent Consumption
Bauxite	29250	96	4	30	70
Sulphur & Pyrites	1874	24	76	34	66
Silica sand	19	0	100	4	96
Iron Ore	163009	96	4	3	97
Magnesite	384	69	31	2	98
Limestone	321002	95	5	1	99
Chromite	3082	94	6	2	98
Manganese Ore	4364	49	51	0	100
Coal	843230	76	24	0	100
Asbestos	356	0	100	0	100
Rock Phosphate	9511	15	85	0	100
Petroleum (crude)	239264	15	85	0	100

* Total Availability = Apparent Consumption + Exports = Production + Imports

Section – 5

Average Daily Employment in Mines

Average Daily Employment in Mines

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Average Daily Employment in Metallic Minerals Mines, 2015-16 (By Sectors)	: 95
Average Daily Employment in Non Metallic Minerals Mines, 2015-16 (By Sectors)	: 96
Average Daily Employment in Mines (By Category / Sector), 2015-16	: 97

Section-5

Average Daily Employment in Mines

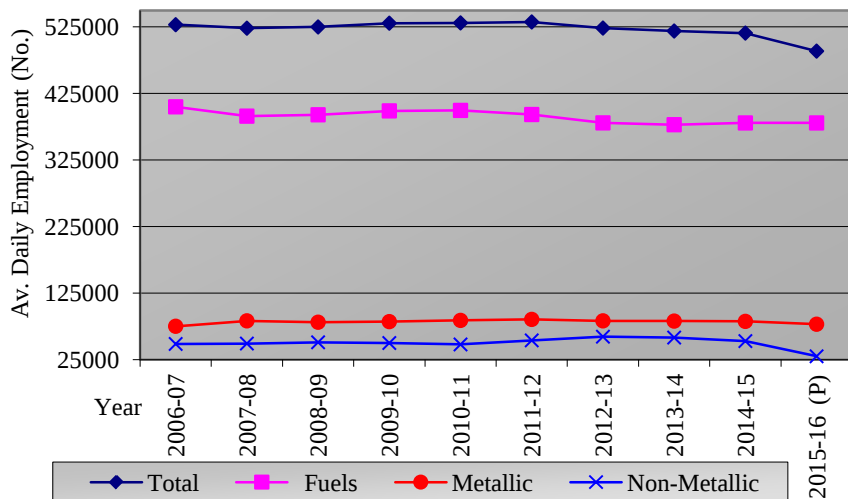
The average daily employment of labour at around 5.28 lakh persons during 2006-07 decreased to 4.88 lakh persons in 2015-16. Among the major group of minerals, fuel accounted for 78% to the total employment during 2015-16, metallic minerals 16% and non-metallic minerals about 6 percent. The average daily employment of labour in 2015-16 was 488694 which was 5% lower as compared to the preceding year.

In the case of fuel minerals, coal and lignite together accounted for 93% of the labour force engaged during 2015-16 in fuel group of minerals. In metallic group of minerals, iron ore accounted for 37% of the total employment, followed by manganese ore 11%, lead & zinc concentrates 6%, bauxite and chromite 6% each and copper concentrates and gold 3% each. The share of limestone in the labour employed in non-metallic minerals was 21% followed by garnet (abrasive) and sillimanite (2% each); magnesite and apatite & phosphorite (1% each) while remaining 73% labour were employed in other non-metallic minerals.

In the case of metallic and non-metallic minerals covered under MCDR, 1988 (which excludes fuel, atomic and minor minerals) 471 mines of category 'A'

employed 82 thousand persons while 1071 mines of 'B' category employed about 26 thousand persons in 2015-16. The contribution of category 'A' and category 'B' mines to the total value of MCDR minerals in 2015-16 was 78% and 22% respectively. About 37 thousand persons were engaged in 135 public sector mines and 71 thousand persons were engaged in 1407 private sector mines in 2015-16. The shares of public and the private sectors in the total value of (metallic and non-metallic) minerals production were 32% and 68% respectively.

Average Daily Employment in Mines (By Mineral Groups)



Average Daily Employment in Mines, 2006-07 to 2015-16 (By Groups)				
Year	Total	Fuels*	Metallic Minerals	Non-metallic Minerals
2006-07	528434	404960	75039	48435
2007-08	523171	390937	83181	49053
2008-09	525024	392988	81119	50917
2009-10	530699	398845	82000	49854
2010-11	531122	399570	83865	47687
2011-12	532552	393384	85361	53807
2012-13	523352	380815	83172	59365
2013-14	518927	378070	82820	58037
2014-15	515834	380719	82375	52740
2015-16(P)	488694	380719#	78110	29865

*: Calendar year

#: Earlier year's figures repeated as estimate.

Source: Fuel - DGMS, Dhanbad

Metallic & Non-metallic - Returns received under MCDR, 1988.

Average Daily Employment in Metallic Minerals Mines, 2015-16(P) (By Sectors)			
Mineral	Total	Public	Private
Total	78110	29666	48444
Iron Ore	39613	12676	26937
Manganese Ore	12213	7409	4804
Lead & Zinc Concentrates	6916	-	6916
Chromite	6416	2071	4345
Bauxite	6281	949	5332
Copper Concentrates	3231	3231	-
Gold	3408	3330	78
Tin Concentrates	32	-	32

Average Daily Employment in Non-Metallic Minerals Mines, 2015-16(P) (By Sectors)			
Mineral	Total	Public	Private
Total	29865	7296	22569
Limestone	22797	2452	20345
Garnet (Abrasive)	1868	1411	457
Sillimanite	1778	1778	-
Apatite & Phosphorite	1048	944	104
Magnesite	932	399	533
Limeshell	499	-	499
Wollastonite	295	-	295
Graphite	202	20	182
Diamond	156	156	-
Vermiculite	89	42	47
Flourite(graded)	58	58	-
Others	143	36	107

Employment in Mines, 2015-16(P)
(Metallic & Non-Metallic Minerals)
(By Category/Sector)

Category/Sector	No. of Mines	Average Daily Employment for the Group	Value of Production (Rs. Crore)
Total	1542	107975	40162
Category A	471	81644	31934
Category B	1071	26331	8228
Public Sector	135	36962	12729
Private Sector	1407	71013	27433

Category 'A'

i) *Mechanised Mines*

ii) *> 150 labours in all*

iii) *> 75 labours in workings below ground*

Category 'B'

: *Other than 'A'*

Section – 6
Consumption of Minerals

Consumption of Minerals, 2006-07 to 2015-16	Iron & Steel Industry	: 101
	Cement Industry	: 102
	Refractory Industry	: 103

Section-6

Consumption of Minerals

Iron & Steel Industry

Iron ore is the basic raw material required for iron & steel industry. Besides coal, limestone, dolomite and manganese ore are also consumed.

During the year 2015-16, upward trend of mineral consumption in some of above minerals was observed in iron & steel industry. The increase in consumption was noticed in respect of iron ore (7.14%), manganese ore (12.38%) and dolomite (17.13%) while it decreased in respect of limestone (6.09%) as compared to previous year.

The consumption of coal was almost at the same level as that in the previous year.

Cement Industry

Important minerals, consumed in cement industry are limestone with other calcareous materials and gypsum, Quartz, bauxite, coal, kaolin (china clay) and iron ore are also consumed in varying amounts.

During the year 2015-16 consumption was increased in respect of lime

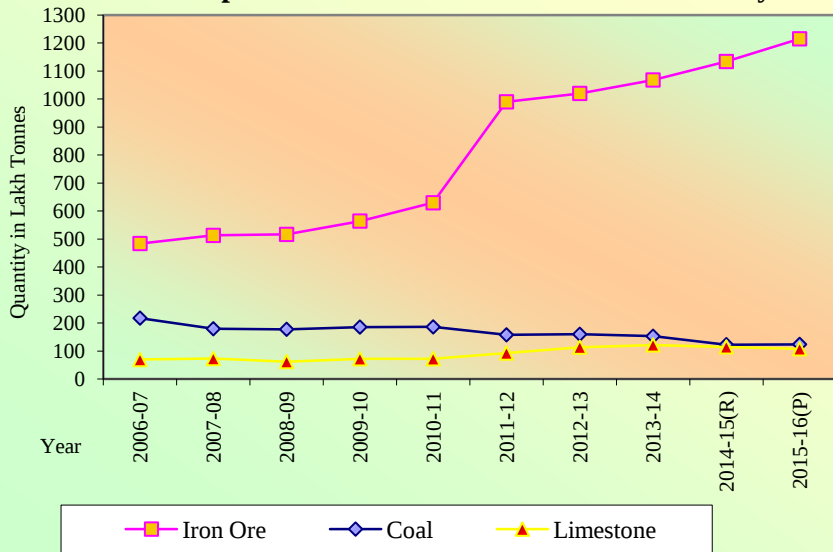
stone (3.87%), gypsum (6.19%), bauxite (23.39%) and kaolin (39.34%) while decrease in consumption was observed in case of iron ore (8.09%), quartz/silica sand & quartzite (11.26%) and coal (18.92%).

Refractory Industry

During the year 2015-16 increase in consumption was observed in respect of magnesite (2.99%), kaolin (13.73%), bauxite & diaspore (3.65%), and kyanite & sillimanite (21.43%) while decrease in consumption was in quartz/silica sand & quartzite (2.74%).

The consumption of dolomite and chromite maintained almost the same level as that in the previous year.

Consumption of Minerals in Iron & Steel Industry



Consumption of Minerals in Iron & Steel Industry, 2006-07 to 2015-16 ('000 tonnes)									
Year	Iron Ore ^{*^}	Coal ^{*@}	Lime-stone [*]	Dolomite	Manganese Ore	Ferro-Alloys	Bauxite	Fire clay	Fluorite
2006-07	484	217.7	69.6	4330	139	418	1	20	3
2007-08	513.0	179.7	73.2	4580	108	449	1	21	2
2008-09	516.6	177.7	62.3	4790	148	538	1	35	3
2009-10	564.2	185.7	72.5	4360	135	574	1	35	1
2010-11	629.5	186.3	72.5	5290 ^{\$}	151	571	1	29	3
2011-12	990	158	93	5313	254	630	1	11	2
2012-13	1020	160	114	5355	255	416	1	11	2
2013-14	1068	153	122	5544	262	406	1	11	2
2014-15(R)	1134	123	115	5669	517	415	N.A.	N.A.	N.A.
2015-16(P)	1215	124 [#]	108	6640	581	N.A.	N.A.	N.A.	N.A.

^{*} Lakh tonnes. @ Relates to despatches of coal. (R) Revised (P) Provisional

[#] Source: CoalDirectory of India,2015-16.

^{\$} The figures for iron & steel and pelletisation (iron & steel) added.

[^] Iron & steel industry including sponge iron.

Consumption of Minerals in Cement Industry, 2006-07 to 2015-16 ('000 tonnes)								
Year	Limestone**	Coal*@	Gypsum*	Quartz \$	Bauxite	Iron Ore	Kaolin	Fireclay
2006-07	1570	147	57	293	693	1066	243	262
2007-08	1680	152.7	59.5	293	615	1022	270	247
2008-09	1720	131.2	65.6	298	1144	1074	339	245
2009-10	2030	131.2	69.8	279	1043	1294	642	245
2010-11	2320	141.8	82.1	332	1082	1494	665	286
2011-12	2399	129	86	356	1041	1548	665	276
2012-13	2533	128	92	382	535	1586	695	253
2013-14	2558	116	92	334	561	1455	663	294
2014-15(R)	2790	111	97	879	1039	1186	755	281
2015-16(P)	2898	90 [#]	103	780	1282	1090	1052	N.A.

* Lakh tonnes. +: Limestone and other calcareous material. (R) Revised (P) Provisional

@ Relates to despatches of coal. \$:Includes Quartz, Quartzite and Silica Sand.

[#] Source: CoalDirectory of India,2015-16.

Consumption of Minerals in Refractory Industry, 2006-07 to 2015-16 (’000 tonnes)								
Year	Dolomite	Fire clay	Magnesite	Quartz & Quartzite	Bauxite & Diaspore	Chromite*	Kyanite & Sillimanite	Kaolin
2006-07	373	179	239	59	295	23	28	23
2007-08	63	182	239	53	304	23	20	28
2008-09	63	182	312	54	318	24	17	28
2009-10	63	163	229	65	128	24	18	33
2010-11	213	171	163	43	118	45	15	34
2011-12	213	182	112	46	280	25	15	35
2012-13	375	181	91	69	313	42	21	33
2013-14	321	176	58	68	295	41	22	34
2014-15(R)	350	172	67	73	301	20	28	51
2015-16(P)	350	N.A.	69	71	312	20	34	58

* Includes consumption in iron & steel industry.

(R) :Revised

(P): Provisional

Section – 7

Production of Mineral-Based Products

Production of Mineral-based Products, 2006-07 to 2015-16	Cement and Asbestos-Cement Products	: 106
	Ceramic Products	: 107
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Section – 7

Production of Mineral-Based Products

Cement and Asbestos-Cement Products

The output of cement in the country has increased by about 77% during 2015-16 at 2739 lakh tonne as compared to 1547 lakh tonnes in 2006-07 and it was nearly 5% higher as compared to the level of previous year.

Ceramic Products

The total production of ceramic products consisting of glazed tiles and insulators showed increasing trend from 1381 thousand tonnes in 2006-07 to a highest level of 2656 thousand tonnes in the year 2015-16 except for the year 2012-13. The output of glazed tiles at 1340 thousand tonne in 2006-07 recorded an increasing trend till 2011-12 and was at 2584 thousand tonne during 2015-16. Production of insulators had a fluctuating trend during the decade and was at the level of 72 thousand tonne during 2015-16.

Fertilisers and Sulphuric Acid

The output of fertilisers witnessed fluctuations during the decade and reported the production of 16.7 million tonnes in 2014-15. The production of fertilizers is not available for the year 2015-16.

**Production of Cement and Asbestos-Cement Products,
2006-07 to 2015-16[@]**

Year	Cement	Asbestos-Cement Products*
	Production (Lakh tonnes)	Production ('000 tonnes)
2006-07	1547	2232
2007-08	1676	2448
2008-09	1814	2382
2009-10	2007	2606
2010-11	2097	2468
2011-12	2235	N.A.
2012-13	2406	N.A.
2013-14	2498	N.A.
2014-15	2613	N.A.
2015-16(P)	2739	N.A.

* Includes the production of asbestos cement sheets and
Asbestos cement pressure & building pipes, etc.

Source: Department of Industrial Policy and Promotion.

@ Production figures pertain to the units included in the sample/frame for Index of Industrial Production with base year 2004-05/2011-12.

Production of Ceramic Products, 2006-07 to 2015-16[@] ('000 tonnes)		
Year	Glazed Tiles	Insulators (H.T. and L.T.)
2006-07	1340	41
2007-08	1365	55
2008-09	1381	56
2009-10	1452	61
2010-11	1478	68
2011-12	1573	61
2012-13	1464	56
2013-14	2350	68
2014-15	2501	71
2015-16(P)	2584	72

Source: Department of Industrial Policy and Promotion.

@ Production figures pertain to the units included in the sample/frame for Index of Industrial Production with base year 2004-05/2011-12.

Production of Fertilisers, 2006-07 to 2015-16 ('000 tonnes)		
Year	Phosphatic	Nitrogenous
2006-07	4517	11578
2007-08	3807	10900
2008-09	3464	10870
2009-10	4321	11900
2010-11	4222	12156
2011-12	4101	12259
2012-13	3541	12194
2013-14	3714	12378
2014-15	4017	12683
2015-16*	N.A.	N.A.

Source: Annual Report 2014-15,
Department of Fertilisers,
Ministry of Chemicals and Fertilisers.

* :Figures are not available..

Production of Sulphuric Acid, 2006-07 to 2015-16[@] ('000 tonnes)	
Year	Production
2006-07	7156
2007-08	6569
2008-09	6395
2009-10	7444
2010-11	5670
2011-12	5870
2012-13	5730
2013-14	5061
2014-15	5407
2015-16(P)	5804

Source: Department of Industrial Policy and Promotion.

@ Production figures pertain to the units included in the sample/frame for Index of Industrial Production with base year 2004-05/2011-12.

Section – 8

Mining Machinery

Mining	Dipper Shovels	: 112
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2015-16	Bulldozers	: 114
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	Locomotives	: 120
	Back Hoes	: 121
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Section – 8

Mining Machinery

During the reporting year, 2015-16, a total number of 747 opencast mechanised mines were covered for compilation for preparation of statement on population of mining machinery as against 493 mines covered during 2014-15. Hence, there is an increase of 55.5% on the coverage of mines during the year.

Like last year, the majority of the mechanised mines covered are of limestone, iron ore, bauxite, gypsum, manganese ore, chromite and others. Conventional method of deep-hole blasting with Shovel – Dumper combination are mostly found.

It has been observed that there is a increase in the population of mining machinery like Hauler/Dumper and Crusher; where as there is an decrease in the population of Front-End Loader, Bull Dozer, Back Hoe, Blast Holes Drills, Dipper Shovel (Mech.), Cranes and Locomotives, Drills/Blast Holes, Motor Grader, Dipper Shovel (Hydraulic), Surface Miner and Air Compressor during the reporting year. But in overall, there is a decrease in the mining machinery population to the extent of 44.45 percent.

**Mining Machinery in Metalliferrous Opencast
Mechanised Mines in India, 2015-16**

Dipper Shovels (Mechanical and Hydraulic)

Capacity (Cu.m)	Total			Mechanical			Hydraulic		
	Total	Public	Private	Total	Public	Private	Total	Public	Private
In Use (Nos.)									
< 1.16	93	19	74	2	-	2	91	19	72
1.16-2.30	59	7	52	-	-	-	59	7	52
2.31-3.45	42	7	35	-	-	-	42	7	35
3.46-4.60	125	23	102	5	5	-	120	18	102
>4.60	97	36	61	13	13	-	84	23	61
Total	416	92	324	20	18	2	396	74	322
In Reserve (Nos.)									
< 1.16	2	2	-	-	-	-	2	2	-
1.16-2.30	1	-	1	-	-	-	1	-	1
2.31-3.45	4	1	3	-	-	-	4	1	3
3.46-4.60	16	5	11	2	2	-	14	3	11
>4.60	8	1	7	-	-	-	8	1	7
Total	31	9	22	2	2	-	29	7	22

**Mining Machinery in Metalliferrous Opencast
Mechanised Mines in India, 2015-16**

Front End Loaders

Capacity (cu.m.)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 1.16	71	12	59	1	-	1
1.16 – 2.30	254	39	215	11	4	7
2.31 – 3.45	75	18	57	5	-	5
3.46 – 4.60	44	9	35	2	-	2
> 4.60	52	10	42	6	-	6
Total	496	88	408	25	4	21

**Mining Machinery in Metalliferrous Opencast
Mechanised Mines in India, 2015-16**

Bulldozers/Ripper Dozers

Capacity (h.p.)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 100	37	3	34	2	1	1
100-200	67	12	55	3	-	3
201-300	47	5	42	4	-	4
301-400	106	17	89	7	2	5
> 400	93	60	33	3	2	1
Total	350	97	253	19	5	14

**Mining Machinery in Metalliferrous Opencast
Mechanised Mines in India, 2015-16
Motor Graders**

Capacity (h.p.)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 100	12	6	6	2	-	2
100-200	40	6	34	2	-	2
201-300	25	15	10	2	-	2
301-400	7	4	3	2	1	1
> 400	5	4	1	-	-	-
Total	89	35	54	8	1	7

**Mining Machinery in Metalliferrous Opencast
Mechanised Mines in India, 2015-16**

Haulers/Dumpers

Capacity (tonnes)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 10	1838	1284	554	45	14	31
10-20	1522	711	811	63	39	24
21-30	682	185	497	23	7	16
31-40	381	202	179	32	10	22
41-60	404	160	244	26	2	24
61-100	197	145	52	12	1	11
101-150	41	7	34	5	2	3
> 150	661	183	478	23	8	15
Total	5726	2877	2849	229	83	146

**Mining Machinery in Metalliferrous Opencast
Mechanised Mines in India, 2015-16**

Drills/Blast Holes

Capacity in diameter of the hole/bit (m.m.)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 50	150	46	104	19	8	11
50-100	74	18	56	11	2	9
101-150	311	60	251	31	3	28
151-200	73	19	54	6	-	6
> 200	14	14	-	-	-	-
Total	622	157	465	67	13	54

**Mining Machinery in Metalliferrous Opencast
Mechanised Mines in India, 2015-16**

Crushers

Capacity (tonnes/hour)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 10	13	1	12	1	-	1
10-50	22	5	17	4	1	3
51-100	42	1	41	1	-	1
101-300	160	16	144	2	2	-
301-500	38	4	34	-	-	-
> 500	111	43	68	10	3	7
Total	386	70	316	18	6	12

Mining Machinery in Metalliferrous Opencast Mechanised Mines in India, 2015-16									
Air Compressors (Diesel & Electric)									
Capacity (cu.m./min.)	Total			Diesel			Electric		
	Total	Public	Private	Total	Public	Private	Total	Public	Private
In Use (Nos.)									
< 5	119	18	101	85	11	74	34	7	27
5.0 – 10	73	8	65	64	5	59	9	3	6
10.1 – 15	163	31	132	148	31	117	15	-	15
15.1 – 50	62	7	55	54	4	50	8	3	5
50.1 – 100	23	6	17	19	4	15	4	2	2
> 100	76	7	69	64	2	62	12	5	7
Total	516	77	439	434	57	377	82	20	62
In Reserve (Nos.)									
< 5	11	3	8	5	3	2	6	-	6
5.0 – 10	8	2	6	4	-	4	4	2	2
10.1 – 15	20	4	16	20	4	16	-	-	-
15.1 – 50	4	1	3	3	-	3	1	1	-
50.1 – 100	-	-	-	-	-	-	-	-	-
> 100	2	-	2	2	-	2	-	-	-
Total	45	10	35	34	7	27	11	3	8

**Mining Machinery in Metalliferrous Opencast
Mechanised Mines in India, 2015-16**

Locomotives

Pay load capacity (tonnes)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 50	6	6	-	-	-	-
50-100	-	-	-	-	-	-
101-150	4	4	-	-	-	-
151-200	1	-	1	-	-	-
> 200	18	18	-	-	-	-
Total	29	28	1	-	-	-

**Mining Machinery in Metalliferrous Opencast
Mechanised Mines in India, 2015-16**

Back Hoes

Capacity (cu.m.)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 1.16	380	46	334	15	2	13
1.16 – 2.30	343	44	299	21	3	18
2.31 – 3.45	141	12	129	8	-	8
3.46 – 4.60	58	3	55	6	-	6
> 4.60	21	11	10	1	-	1
Total	943	116	827	51	5	46

**Mining Machinery in Metalliferrous Opencast
Mechanised Mines in India, 2015-16**

Cranes

Lifting capacity (tonnes/hour)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 10	46	21	25	2	-	2
10-20	40	17	23	2	-	2
21-50	20	17	3	1	-	1
51-75	13	1	12	-	-	-
> 75	-	-	-	-	-	-
Total	119	56	63	5	-	5

**Mining Machinery in Metalliferrous Opencast
Mechanised Mines in India, 2015-16**

Surface Miners

Capacity (tonnes/hour)	In Use (Nos.)			In Reserve (Nos.)		
	Total	Public	Private	Total	Public	Private
< 150	17	-	17	-	-	-
150-200	4	1	3	-	-	-
201-250	7	3	4	-	-	-
251-300	7	-	7	1	-	1
> 300	6	3	3	3	-	3
Total	41	7	34	4	-	4

Appendix - I

Decennial Growth in Production of Important Minerals

Mineral	Unit	1955	1965	1975	1985	1995-96	2005-06	2015-16 (p)
Fuels								
Coal	'000 t	38810	67162	95911	149712	273415	407039	639230
Lignite	'000 t	29	2300	2822	7921	22144	30066	43842
Natural Gas (Utilised)	m.cu. m.	-	325	1243	4688	20929	32202	32249
Petroleum (Crude)	'000 t	347	3022	8283	29860	34517	32190	36950
Metallic Minerals								
Bauxite	'000 t	92	707	1274	2341	5565	12596	28134
Chromite	'000 t	91	60	500	569	1700	3714	2894
Copper Concentrates	'000 t	-	37	109	234	256	125	143
Copper Ore	'000 t	359	468	1838	4211	4737	2643	3908
Gold	Kg.	6559	4063	2825	1853	1661	3047	1323
Gold Ore	'000 t	729	471	476	456	453	479	535
Iron Ore	'000 t	6964	23874	41794	44090	67418	165230	155910
Lead Concentrates	'000 t	3	5	15	35	62	96	262
Zinc Concentrates	'000 t	5	10	39	87	289	889	1474
Lead & Zinc Ore	'000 t	59	162	711	1487	2387	4801	10453
Manganese Ore	'000 t	1745	1647	1605	1269	1837	1906	2148
Silver	kg.	4788	5235	2616	25587	35531	27961	426443

(Contd.)

Decennial Growth in Production of Important Minerals (Concl'd.)

Mineral	Unit	1955	1965	1975	1985	1995-96	2005-06	2015-16(p)
<i>Non-Metallic Minerals</i>								
Apatite & Phosphorite	'000 t	6	7	486	949	1319	2058	1474
Diamond	th. carats	2	4	20	16	30	44	36
Kyanite	'000 t	12	37	53	31	9	9	3
Sillimanite	'000 t	2	11	8	17	9	33	70
Limestone	'000 t	7485	19957	26519	49306	96832	170029	303815
Magnesite	'000 t	58	239	313	421	345	341	265

* Relates to dressed mica.

Appendix – II

Decennial Mineral Production

Mineral	Unit	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 (p)
Fuels											
Coal	'000 t	430832	457082	492757	532042	532694	539950	556400	565765	609179	639230
Lignite	'000 t	31285	33980	32421	34071	37733	42332	46500	44271	48270	43842
Natural Gas(Ut.)	m. cu. m.	31747	32417	32845	47496	52219	47559	40679	35407	33657	32249
Petroleum(Crude)	'000 t	33988	34118	33508	33690	37684	38090	37862	37788	37461	36950
Metallic Minerals											
Bauxite	t	15732535	22624960	15460202	14124093	12722820	13599566	16507960	22319148	22493671	28133516
Chromite	t	5295551	4872684	4073479	3425580	4325699	2923435	2833895	2878320	2164163	2893997
Copper Ore	t	3273906	3242371	3452406	3271169	3601984	3479189	3635751	3777772	3505348	3907823
Copper Conc.	t	149584	150187	137514	124577	136856	130456	123654	139307	107604	142649
Gold Ore	t	512609	681243	587215	517520	741522	491562	502831	420429	447278	534907
Gold	kg	2488	2969	2438	2084	2399	2194	1588	1564	1441	1323
Iron Ore	'000 t	187696	213250	212960	218553	207157	168582	136618	152183	129321	155910
Lead & Zinc Ore	t	5139915	5783099	6680698	7101872	7539999	8041881	8633411	9281807	9362659	10453037
Lead Conc.	t	107334	125755	133768	133921	147625	161854	184486	194426	197668	261858
Zinc Conc.	t	947387	1035828	1224077	1279880	1427231	1414009	1492781	1490662	1489374	1473812
Manganese Ore	t	2115507	2696980	2789025	2491950	3056385	2411871	2342169	2626291	2369481	2147629
Silver	kg	53271	80697	105284	138780	148303	207144	374046	349774	327647	426443
Tin Conc.	kg	100835	63218	59778	59016	60643	48765	47774	34862	24685	13541

Decennial Mineral Production (Contd.)

Mineral	Unit	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 (p)
Non-Metallic Minerals											
Apatite	t	9464	6691	6415	5992	3846	3053	572	1300	930	150
Phosphorite	t	1993468	1849188	1803954	1605489	2097490	2259726	1941158	1453580	1607215	1473722
Asbestos	t	390	269	315	243	268	276	389	172	-	-
Diamond	crt	2180	586	536	16891	11222	18490	31988	37517	36107	36070
Fluorite (Graded)	t	2053	3970	3176	105232	59954	5010	3092	2487	2946	2333
Fluorite (Conc.)	t	-	3794	6814	-	-	-	-	-	-	-
Flint Stone	t	-	-	-	-	-	708	633	459	244	253
Garnet (Abrasive)	t	865618	1275919	1151241	1580617	2126337	1717904	768248	483559	91394	81794
Garnet (Gem)	kg	-	-	-	-	-	-	-	-	-	-
Graphite (R.O.M.)	t	162293	170813	117767	124625	115697	153339	134735	146390	116712	134568
Iolite	kg	-	-	-	758	4	-	-	-	-	-
Kyanite	t	8059	5102	4620	5495	5954	4064	1048	3679	6255	2901
Sillimanite	t	26366	40537	33702	33687	48784	59206	43736	67265	66273	70447
Limestone	'000 t	196695	193089	221573	232950	246336	262882	285030	280863	293273	303815
Limeshell	t	103548	128250	97856	62215	30410	33225	24044	18750	16353	10029

Decennial Mineral Production (Concl'd.)

Mineral	Unit	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15	2015-16 (p)
Magnesite	t	238981	252849	252880	301070	235762	224104	224315	196940	285009	265022
Marl	t	-	4155925	4167452	5908226	4399379	4140577	4337009	3254486	2179488	2389706
Perlite	t	68	-	-	-	-	-	-	-	-	-
Moulding Sand	t	-	-	-	-	-	30	3118	29963	6383	25852
Salt (Rock)	t	1714	1216	2011	1836	1200	-	-	-	-	-
Selenite	t	-	3864	15224	14598	6736	13047	7577	531	207	3103
Sulphur	t	204186	227311	269572	263124	236998	381146	449004	390325	429258	441153
Vermiculite	t	11827	8910	12647	11662	19234	10194	7947	11851	19336	23267
Wollastonite	t	131572	118666	111581	132385	183381	184445	145667	192712	186524	175348