Indian Minerals Yearbook 2015

(Part- III : Mineral Reviews)

54th Edition

DIAMOND

(FINAL RELEASE)

GOVERNMENT OF INDIA
MINISTRY OF MINES
INDIAN BUREAU OF MINES

Indira Bhavan, Civil Lines,
NAGPUR – 440 001

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

July, 2017

13 Diamond

Diamond has been the most valuable among gems for more than 2,000 years. Diamond occurs in two types of deposits primarily in igneous rocks of basic or ultrabasic composition and in alluvial deposits derived from the primary sources. Its composition is pure carbon and has cubic crystal system and common form octahedron. India is known for its diamond cutting & polishing business especially for small sized diamonds. Most of the world's diamond cutting and polishing business comes to India, particularly to Surat in Gujarat. Indian Diamond Industry handles 80% of the global polished diamond market. India depends largely on imports of rough gem diamonds for its Cutting and Polishing Industry as there is no notable production except for one producer in Madhya Pradesh whose limited production is too sparse to meet the Cutting and Polishing Industry's requirements. The cut and polished diamonds are re-exported. Being the hardest natural substance known, industrial variety of diamonds are used in grinding, drilling, cutting and as polishing tools. In addition, diamond exhibits highest thermal conductivity amongst minerals and has high electrical resistivity making it suitable for application in semiconductors. The prices of gem diamonds depend upon their rarity, weight, quality, shape and flawlessness.

Diamond has a high refractive index and strong dispersion which gives it exciting brilliance when cut as a faceted stone. Gem diamonds are transparent and colourless or show faint shades of different colours. The transparent water-clear diamonds are known as "first water" or "blue-white". When yellowish or honey colour tinge is present, they are termed as off-colour stones. The industrial diamonds are dark brown in colour. Diamonds with green, blue or red shades are rare and attract higher price than the common varieties.

Flawless stones of good colour are abundantly used in gem trade while off-colour, flawed & defective stones, chips & cuttings as well as small grains & dust are used in industry. Industrial grade diamond, i.e., diamond that does not meet gem quality standards in terms of colour, clarity, size or shape and those that are produced as a by-product of mining for gem diamonds continue to be used principally as abrasives in many applications despite their initial cost. Although diamond is more expensive than the other abrasive materials, it is more cost-effective in numerous industrial processes because it lasts longer than any other material.

Broadly, industrial diamonds have three varieties viz, 'ballas' which is mass of minute diamond crystals difficult to cleave; 'bort'; is yellowish grey to black colour and massive, flawed or irregular in shape and 'carbonado' is black, very hard opaque and without cleavage.

RESOURCES

Diamond occurrences are reported since pre-historic times in the country. Presently, diamond fields of India are grouped into four regions:

1) South Indian tract of Andhra Pradesh, comprising parts of Anantapur, Cuddapah, Guntur, Krishna, Mahabubnagar and Kurnool districts;

2) Central Indian tract of Madhya Pradesh, comprising Panna belt;

3) Behradin-Kodawali area in Raipur district and Tokapal, Dugapal, etc. areas in Bastar district of Chhattisgarh; and

4) Eastern Indian tract mostly of Odisha, lying between Mahanadi and Godavari valleys.

As per the UNFC system as on 1.4.2013, all India resources of diamond are placed at around 31.86 million carats. Out of these, 0.98 million carats are placed under Reserves category and 30.88 million carats under Remaining Resources category. By grades, about 2.37% resources are of Gem variety, 2.64% of Industrial variety and bulk of the resources (95%) are placed under Unclassified category. By States, Madhya Pradesh accounts for about 90.18% resources followed by Andhra Pradesh 5.72% and Chhattisgarh 4.09% (Table-1).

EXPLORATION & DEVELOPMENT

GSI continued exploration activities for search of kimberlite, the source rock of diamond, in Andhra Pradesh,Telangana,Karnataka and Chhattisgarh . Details of exploration activities by GSI are furnished in Table - 2.

Table –1 : Reserves/Resources of Diamond as on 1.4.2013
(By Grades/States)

(In carats)

State/Grades	Reserves				Remaining Resources								Total Resources (A+B)
	Proved STD111	Probable		Total (A)	Feasibility STD211	Pre-feasibility		Measured STD331	Indicated STD332	Inferred STD333	Reconnaissance STD334	Total (B)	
		STD121	STD122			STD221	STD222						
All India:Total	**984875**	**-**	**-**	**984875**	**-**	**-**	**-**	**304601**	**1524317**	**29047514**	**-**	**30876432**	**31861307**
By Grades													
Gem	-	-	-	-	-	-	-	158819	1017	596929	-	756765	756765
Industrial	-	-	-	-	-	-	-	41664	223	798936	-	840823	840823
Unclassified	984875	-	-	984875	-	-	-	104118	1523077	27651649	-	29278844	30263719
By States													
Andhra Pradesh	-	-	-	-	-	-	-	200483	1524317	98155	-	1822955	1822955
Chhattisgarh	-	-	-	-	-	-	-	-	-	1304000	-	1304000	1304000
Madhya Pradesh	984875	-	-	984875	-	-	-	104118	-	27645359	-	27749477	28734352

Figures rounded off

Table-2: Details of Exploration Activities for Diamond, 2014-15

Agency/ State/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI							
Chhattisgarh							
Gariaband	Mainpur Kimberlite field	1:50000	700	-	-		G4 stage investigations to locate kimberlite/lamproite bodies was taken up. Photogeology, Remote Sensing and Aeromagnetic studies were completed & base map was prepared. Reconnaissance mapping was carried out.
		1:5000 (DM)	700				
			5			380	Detailed mapping was also carried out. The area constitutes granites of Bundeli granitoides, sandstone of Chhattisgarh Supergroup and intrusive mafic dykes. Three hard, compact fine to medium grained dykes trending $N35^0$ W-$S35^0$ E were observed. A volcanic rock having 40 m x 30 m dimension was noticed in the vicinity of newly found ultramafic & mafic dyke. Investigation has been completed.
							G4 stage investigations to search for kimberlite clan rocks were undertaken. A base map was prepared with inputs from PGRS studies.
-do-	Gariaband	1:50000	700	-	-	410	A base map was prepared.The area predominantly exposes granitoides intrudes by mafic dykes of Meso-proterozoic Age. Quartz veins and pegmatite are the the youngest intrusives in the area. Sandstone of Devdhara Formation of Pairi Group occupies the south eastern part of the area. Field work was also carried out around Kodomali, Dhawalpur, Behradih and Parkom lamprophyre field Gariaband area to study known kimberlites/lamprophyres/lamproites. The investigation has been completed.
Jharkhand							
Simdega		-	700	-	-	195	G4 stage investigation to locate kimberlite/lamproit bodies was taken up. Reconnaissance mapping was completed. Stream samples were collected. Regional samples were collected from 4^{th} and 5^{th} order streams detailed samples were collected from 2^{nd} and 3^{rd} order streams. The samples were processed to identify heavy mineral concentrations. Total 10 nos of heavy mineralcon concentrates were scanned and minerals which are suspected to be derived from mantle were seperated for further analysis. The investigation will be continued.
Telangana							
Rangareddy, Mahbubnagar & Hyderabad		-	515	-	-	120	G4 stage investigation was taken up. Eight blocks have been identified in structurally interpreted lineament map. Total 515 km area was covered by traverses. Dolerite dykes were observed along some of the lineaments. 30 regional stream samples, 90 detailed stream sediment samples from trap sites were collected and processed to recover heavy minerals (heavies).

(conted.)

Table-2: Contd.

Agency/ State/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI **Telangana** Mahbubnagar, Rangareddy & Hyderabad	-	-	-	-	-	100	One hundred samples were scanned under binocular microscope to identify kimberlite indicator minerals (KIMs). A lamprophyre dyke 50 m length and 30 m width was located 1.5 km north of Raghavapuram. A hornblendite 150 m x 80 m in dimension has been noticed 3 km SE of Bodijanampeta consisting of phenocrysts of 2 cm to 3 cm size euhedral crystals of amphiboles and felspars in the groundmass. A lamproite dyke 1 km long was located 1.5 km SW of Chintanapalli. Megascopically these lamproites are grey colour , fine grained and highly altered. In thin section these lamproites are highly altered mostly into carbonate and chlorites. At places pseudomorph of leucite was also observed. A hornblendite, 200 m x 120 m was located 700 m NW of village Emulnaram. It consists of phenocrysts of 2 cm to 3 cm size euhedral crystals of amphiboles and felspars in ground mass. The investigation has been completed.
Mahbubnagar & Kurnool	Somasila area	-	-	-	-	95	A G4 investigation was carried out. Field traverses and stream sediment sampling was carried out. A total of 78 no. of heavy mineral concentrates were examined under binocular microscope to identify KIMs. A few suspected KIMs (spinel) were confirmed as Cr-spinel by EPMA studies showing their kimberlite affinity. Two new lamproite clusters have been located near village Somasila, Kollapur Mandal, Mahbubnagar District. So far 7 numbers of lamproite bodies have been discovered in Somasila area. The lamproite bodies are intersected in the hills of Cuddapah sedimentry sequences and found up to the height of 320 m in the Vempalle dolomite. The lamproite bodies are covered by Banganapalli conglomerate and quartzites of Kurnool Group in many places. Besides Somasila lamproites, one more lamporite cluster has also been identified to the south of village Kollapur where lamproite dykes are emplaced in the margin of Cuddapah basin and PGC basement following WNW-ESE trend. Megascopically the lamproides are altered, brownish grey to greenish grey, hard, compact, vesicular containing pseudomorphs of megacrystic to macrocrystic olivine, serpentine and secondary calcites. In addition, disseminated

(Contd.)

Table-2: Contd.

Agency/ State/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
							sulphides are also seen occuring as rim or necklace. Limited petrological studies revealed that the rock is made up of microphenocrysts of altered olivine, pyroxene, phlogopite, and translucent to opaque minerals set in a groundmass rich in carbonate, phlogopite, serpentine and chlorite. The investigation will be continued in FS 2015-16.
Telangana Andhra Pradesh							
Mahbubnagar & Kurnool	Gurakonda Koilsagar Chillamungalchedu Manikonda & Komreddipalli	-	-	-	-	150	G4 stage investigation was taken up in five sub-blocks. Detailed ground traverses were conducted to explore for there kimberlites affinity. Numerous calcrete zones were observed and examined. The samples (SSS) were processed and examined to locate kimberlites. Suspected kimberlite zones identified in Gurakonda sub block. The calcrete chemistry of Gorakonda sub-block matches with Wajrakarur calcretes. Calcrete zones with kimberlite affinity were identified for pitting/auger drilling.The investigation has been completed.
Karnataka Chitradurga Ballari	-	-	-	-	-	-	G4 stage investigation was taken up. Digital image processing of down loaded ETM+data was done using ERDAS Imaging software to prepare lineament map on regional scales as to cover the known Wajrakarur Kimberlite Field and the area under investigation. The structural elements observed in the Wajrakarur Kimberlite Field also prevail in the area under investigation. Close space geological traverses were taken in the area where lineaments inferred are intersecting. A shear zone about 0.5 km width is found to the south-east of Vaderahalli which is characterised by stretching of quartz grains. PGRS study and study of Vasundhara lineament map reveal this to be an extension of Wajrakarur Fault. The investigation will be continued in FS 2015-16.
Chitradurga Ballari	-	-	-	-	-	-	G4 stage investigation was taken up to the northwest of Chitradurga in Ballari and Chitradurga districts. About three km NW of Chirtagunta, calcrete capping is identified over the granite. After Sample screening, fractions with 1 mm-0.5 mm and

(Contd..)

Table-2: Concld.

Agency/ State/ District	Location Area/ Block	Mapping		Drilling		Sampling (No.)	Remarks Reserves/Resources estimated
		Scale	Area (sq km)	No. of boreholes	Meterage		
GSI **Karnataka** Chitradurga Ballari							0.5 mm - 0.3 mm size were taken up for further concentration. Magnetic minerals were seperated. Samples were studied under binoculer microscope to recover kimberlite indicator minerals like ilmenite, garnet, spinel, chrome diopsite, zircon, microdiamond, olivine etc. The investigation will be continued in FS 2015-16.

PRODUCTION & STOCKS

Production of diamond at 35,724 carats in 2014-15 as against 37,517 carats in the previous year showed a decline of 4.8%. There were two operating mines, both under Public Sector located in Panna district of Madhya Pradesh. The one mine out of these two mines that is operated by NMDC Ltd contributed almost the entire production of diamond.

Out of the total output, gem variety covering only rough & uncut constituted 32% and the remaining 68% was of industrial grade covering both off-colour and dark brown varieties. (Tables - 3 to 5).

Mine-head closing stocks during the year were 15,304 carats as against 15,076 carats in the previous year (Table-6).

The average daily employment of labour during 2014-15 was 176 as against 157 in the previous year.

Table – 3 : Principal Producers of Diamond, 2014-15

Name & address of producer	Location of Mine	
	State	District
National Mineral Development Corporation Ltd 10-3-311-/A, Khanij Bhavan, Castle Hills, Masab Tank, Hyderabad-500 028, Andhra Pradesh	Madhya Pradesh	Panna
Directorate of Geology & Mining, (Diamond Project) Government of Madhya Pradesh, Khanij Bhavan, 29-A, Arera Hill, Bhopal - 462 016, Madhya Pradesh.	Madhya Pradesh	Panna

Table – 4 : Production of Diamond, 2012-13 to 2014-15
(By State)

(Quantity in carats; Value in ₹'000)

State	2012-13		2013-14		2014-15 (P)	
	Quantity	Value	Quantity	Value	Quantity	Value
India /Madhya Pradesh	**31988**	**366471**	**37517**	**614087**	**35724**	**613504**

Table – 5 : Production of Diamond, 2013-14 to 2014-15
(By Sector/State/District/Grades)

(Quantity in carats; Value in ₹000)

State/District	2013-14					2014-15 (P)				
	No. of mines	Quantity			Value	No. of mines	Quantity			Value
		Gem (rough & uncut)	Industrial*	Total			Gem (rough & uncut)	Industrial*	Total	
India/Public Sector	**2**	**11598**	**25919**	**37517**	**614087**	**2**	**11435**	**24289**	**35724**	**613504**
Madhya Pradesh/ Panna	**2**	**11598**	**25919**	**37517**	**614087**	**2**	**11435**	**24289**	**35724**	**613504**

** Includes off-colour and dark-brown varieties of diamond.*

Table – 6 : Mine-head Closing Stocks of Diamond, 2013-14 & 2014-15
(By State)

(In carats)

State	2013-14	2014-15(P)
India/Madhya Pradesh	**15076**	**15304**

MINING & PROCESSING

Majhgawan in Madhya Pradesh, is a fully mechanised mine operated by National Mineral Development Corporation Ltd. It is worked by opencast method in tuff rock by deploying 4.1 cu m hydraulic shovel and 40 tonnes dumpers in combination. The mine benches have been designed with a height of about 10 m. Few benches are of 4-5 m height. Drilling is done by 4-inch diameter drills and charged with slurry explosives, and about 40-50 holes are blasted at a time with delay pattern. The capacity of the mine is about 30,000 carats per year. Diamonds are also recovered from conglomerate and gravel beds at shallow depths by small operations on the basis of annual permits granted by Diamond Officer, Government of Madhya Pradesh. At Majhgawan, kimberlite rock after mining is stockpiled for weathering action and then is fed to crushing plant. It is processed through Heavy Media Separation System in processing plant for recovery of diamond. Recently, X-ray diamond sorter has been installed for sorting of diamonds from ore and this has increased the recovery of raw diamonds to 98%.

Diamond Mining Factors

Grade: Grade is the weight of diamond expressed as carats per tonne (ct/t) of ore. It varies widely from one mine to another but generally falls somewhere between 0.3 and 1.3 ct/t. One carat is equivalent to 0.2 grams.

Size (weight) of rough diamonds in deposit: Individually, rough diamonds can range from microweight to stones weighing more than 1,000 carats. Depending on the mine, the average size of rough diamond recovered can weigh from 0.01 ct (about 1 mm) to more than 0.7 ct. Many mines in the world show an average of about 0.4 to 0.5 ct per tonne. It is interesting to note that the number of stones larger than 2 ct (0.4 g) produced at mines are very small (about 4,00,000 stones per year).

INDUSTRY

Indian Diamond Industry enjoys credible standing and reputation in the world market, particularly for small diamonds used in jewellery. Indian diamond manufacturing standards are reckoned as the best in the world. Workmanship & skill of Indian artisans at polishing small diamonds economically and efficiently has been widely acknowledged. Surat in Gujarat is the main centre of the Cutting and Polishing Industry.

There are over 10,000 diamond processing units in Surat. Most of them now use computerised cutting machines. With 8,00,000 strong workforce and deployment of the latest technology, India continues to be the dominant player in the world Diamond Cutting and Polishing Industry. According to India's Gem & Jewellery Export Promotion Council (GJEPC), India has further strengthened its world dominance.

India's predominance as leader in the world market is due to a combination of pragmatic policies of the Government and sustained efforts of exporters. Policy changes, such as, creation of Special Economic Zones (SEZ) is expected to boost the export prospects further. Several diamond polishing companies have already established offices in India for trading in rough & polished diamonds. India obtains rough diamonds from Belgium, UK, Hong Kong, UAE, Israel, etc. Indian diamond traders seek opportunities to establish direct trade ties with mining countries and companies. The expectations of the Indian Diamond Industry are to access rough diamonds at competitive rates directly from the producers to maintain its lead in the world market.

CONSUMPTION

Industrial diamonds are mostly consumed by manufacturers of drill bits, grinding tools and stone cutting & polishing machines and demand of industrial diamonds is mostly met by imports. There are many small-scale sector units that operate in cutting & polishing trade.

SUBSTITUTES

Synthetic Diamond

Today, market for industrial diamond is dominated by synthetic stones, first developed in 1950s. Synthetic diamonds, manufactured using high pressure and high temperature methods compete as an abrasive mineral with natural industrial diamonds and also with manufactured materials like silicon carbide (SiC), alumina (Al_2O_3), tungsten carbide (WC) and carbide boron nitrate (CBN). Synthetic diamonds being marketed are mostly 0.6 - 0.8 mm and smaller in size. Synthetic Diamond Abrasives (SDA) are used for sawing, drilling or milling hard stones, concrete aggregate, refractory materials, masonry and asphalt. In general, large crystals are used for cutting softer materials and smaller crystals for tougher jobs. Synthetic diamonds now account for bulk supply of industrial diamonds and are preferred over natural diamonds because their quality can be controlled to suit customer's requirements.

Synthetic diamonds were produced earlier by using graphite with a metal catalyst under very high pressure & temperature.

Of late a new process, such as,chemical vapour deposition (CVD) has been evolved which require relatively low pressure for production of synthetic diamonds. This process involves depositing tiny crystals of diamond on a film which can be built in complicated shapes and used at desired places or instruments such as machine part, heat conductors in micro circuit, shortwave UV, microwave sources and radiation detectors. In future, CVD can be a substitue for silicon in Computer Industry. In USA, developments have taken place in CVD method of growing 100% pure diamond using microwave plasma technology. This method is more economical, and also enables production of larger crystals.

TRADE POLICY

Import of diamond under HS Code 7102, whether or not worked, but not mounted or set, fall under free' category as per the Export-Import Policy 2015-2020. Foreign Direct Investment (FDI) in diamond mining up to 100% is admissible for automatic approval of Reserve Bank of India.

WORLD REVIEW

The world reserves of industrial diamond are about 700 million carats located mainly in Australia (31%),Congo (Kinshasa) (21%), Botswana (19%), South Africa (10%) and Russia (6%). The world reserves of diamond are furnished in Table-7.

The total world production of diamond decreased by 4% from 131 million carats in 2013 to 126 million carats in 2014.

The principal producers were Russia (31%), Botswana (20%), Congo Dem. Rep. (12%), Canada (10%), Australia & Angola (7% each) and South Africa (6%). During the year, increase in diamond production was observed in Canada (14%), Botswana (9%) and Angola (2%) while the production in Zimbabwe (54%), Australia (19%), Congo Dem. Rep.(12%) reported declined (Table-8).

Natural diamonds are cut in 52 countries. The major diamond cutting centres in the world are Antwerp in Belgium, Ramat Gan in Israel, New York in USA, Surat in India and Guangzhou & Shenzhen in China.

Table – 7 : World Reserves of Diamond (Industrial) (By Principal Countries)

(In million carats)

Country	Reserves
World : Total (rounded)	**700**
Australia	220
Botswana	130
Congo (Kinshasa)	150
Russia	40
South Africa	70
USA	NA
Other countries	90

Source: *Mineral Commodity Summaries, 2016*

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Table – 8 : World Production of Diamond (By Principal Countries)

(In '000 carats)

Country	2012	2013	2014
World: Total	**126315**	**131052**	**125514**
Angola	8331	8602	8791
Australia	8626	11482	9288
Botswana	20478	22597	24658
Canada	10529	10562	12082
China[e]	1100	1100	1100
Congo, Dem.Rep.of	19154	16653	14663
Ghana	215	159	241
Guinea	267	202	164
Lesotho	479	414	346
Namibia	1667	1776	1941[e]
Russia	34928	37884	38304
Sierra Leone	533	605	517
South Africa	7245	8168	8060
Zimbabwe	12060	10412	4772
Other countries	703	436	586

Source: *World Mineral Production, 2010-2014.*

Botswana

The government of Botawana established a new diamond trading company named the Oakvango Diamond Trading Co , which was wholly owned by the Government. The Government's portion of Debswana Diamond Co (Pty) Ltd's production was to be marketed through Okavango. Under the Government's agreement with De Beers, Okavango had the right to market 12% of Debswana's production in 2013; its share would increase to 15% by 2016.

Botswana's diamond trade increased as it became established as De Beers' new sorting center. Most of the diamonds were exported before cutting and polishing.

Debswana produced more than 22.7 million carats at the Damtshaa, the Jwaneng, the Letlhakane and the Orapa Mines in 2013. Debaswana's production for 214 was expected to be more than 24 million catats.

The Jwaneng Cut-8 project was likely to extend the life of the Jwaneng Mine at least up to 2028 with an additional 95 million carats of diamond to be mined.

Lucara Diamond Corp. of Canada operated Karowe Mine, which produced diamond from the AK6 kimberlite project.

Mantle diamonds Ltd of the United Kingdom held the Lerala Mine, which was on care-and-maintenance status in 2013. Kimberley Diamonds Ltd of Australia Purchased Mantle. Kimberley planned to reopen Lerala in 2014 and to produce more than 400,000 carats per year during the estimated 7 year life of the mine. Reserves were estimated to be 20.6 million tonnes of ore that contained nearly 5.6 million carats.

Gem Diamonds Ltd of the United Kingdom started construction on the new Ghaghoo Mine in 2011; planned opening of the mine was delayed until August 2014 due to heavy rains. It was planned to produce about 200,000 carats per year at Ghaghoo in the first phase. Indicated resources at Ghaghoo were estimated to be about 15.5 million carats of contained diamond.

Pangolin Diamond Corp. of Canada explored for diamond at Tsabong North in southwestern Botswana in 2013. Botswana Diamonds of United Kingdom explored for diamond near Gope. Firestone Diamonds plc's BK11 Mine remained on care-and-maintenance status in 2013.

In 2013, Botswana had 25 diamond cutting and polishing companies that employed nearly 3,000 workers. The growth of Botswana's diamond cutting and polishing industry was limited by high production cost per carat as compared with production cost per carat in India and China.

Canada

Canada's diamond was produced mainly in the Northwest Territories. Three major producers -De Beers Canada Inc, Diavik Diamond Mines Inc and Dominion Diamond Corp accounted for 99% of the Canada's total output. BHP Billiton completed the sale agreement with Dominion Diamond Corp on the Ekati Mine in the Northwest Territories. The Ekati Mine consisted of 282 mining leases that covered an area of 262,175 hectares. The area had 150 known kimberlites and had indicated mineral resources of 105.7 Mt containing an estimated 127.5 million carats of diamond.

FOREIGN TRADE

Exports

Value of exports of diamond decreased about 6% to ₹ 1,48,102 crore in 2014-15 against ₹ 1,58,135 crore in the previous year. Diamond (mostly cut) alone accounted for almost cent-percent exports in terms of value. The share of industrial diamonds and diamond powder was about ₹ 17 crore and ₹ 29 crore, respectively in 2014-15. Exports were mainly to Hong Kong (38%), USA (27%), Belgium (11%), UAE (10%) and Israel (5%) (Tables-9 to 12).

Imports

In 2014-15 imports value of diamond decreased by about 7% to ₹ 1,25,214 crore from ₹ 1,34,916 crore in the previous year. Uncut diamond shared the bulk, i.e., almost cent-percent of the imports. Imports of industrial diamond and diamond powder were about 0.52 million carats and 351 million carats respectively valued at ₹ 30 crore and ₹ 149 crore respectively. Imports were mainly from Belgium (44%), UAE (20%), Hong Kong (11%), Israel (5%) and Botswana (4%) (Tables-13 to 16).

Table – 9 : Exports Value of Diamond : Total (By Countries)

Country	2013-14	2014-15 (P)
	Value (₹'000)	Value (₹'000)
All Countries	**1581348137**	**1481024677**
Hong Kong	554371692	562796247
USA	368032951	393506812
Belgium	159182995	160742386
UAE	272548864	155041337
Israel	79096296	71911495
Thailand	41901434	37262011
Japan	18633829	15597579
Switzerland	15406276	13135361
Australia	10034595	10066613
Singapore	14608865	9881402
Other countries	47530340	51083434

Note : *Quantity not given due to partial coverage; value figures, however, have full coverge.*

Table – 10 : Exports of Diamond (Industrial) (By Countries)

Country	2013-14		2014-15(P)	
	Qty (carats)	Value (₹'000)	Qty (carats)	Value (₹'000)
All Countries	**2121451**	**126895**	**4351127**	**168693**
USA	854209	27133	910824	45844
Belgium	340468	23681	498302	40761
UK	156035	12689	813817	27041
Israel	219235	12522	1659447	26744
Ireland	121716	6810	139410	9124
China	165243	11012	62905	5342
Hong Kong	111758	25219	64500	4597
Germany	22267	1279	101300	3620
Chinese Taipei/Taiwan	-	-	140	753
Unspecified	4850	860	88960	3543
Other countries	125670	5690	11522	1324

Table – 11 : Exports of Diamond (Mostly Cut) (By Countries)

Country	2013-14		2014-15 (P)	
	Qty (carats)	Value (₹'000)	Qty (carats)	Value (₹'000)
All Countries	**83850627**	**1580049655**	**70928812**	**1480560658**
Hong Kong	24397990	554027999	15015300	562757037
USA	7080312	367666163	6822107	393373221
Belgium	10341362	159013709	12460414	160674217
UAE	26899702	272441509	29068312	155031605
Israel	2098255	79073945	1596422	71860524
Thailand	1712489	41891958	1492592	37261962
Japan	1462152	18584685	817992	15587986
Switzerland	466407	15387922	261664	13128862
Australia	146959	10025933	123447	10066613
Singapore	640939	14607748	402462	9880970
Other countries	8604060	47328084	2868100	50937661

Table – 12 : Exports of Diamond (Powder) (By Countries)

Country	2013-14		2014-15 (P)	
	Qty ('000 carats)	Value (₹'000)	Qty ('000 carats)	Value (₹'000)
All Countries	**13532**	**1171587**	**18736**	**295326**
USA	4240	339655	3384	87747
UK	1070	48560	909	38776
Hong Kong	1957	318474	10389	34613
Belgium	1421	145605	753	27408
Israel	231	9829	967	24227
Ireland	242	10229	588	23252
Germany	409	19772	520	20766
UAE	1383	103736	225	9732
Japan	890	48970	59	8922
Switzerland	320	18334	181	6499
Other countries	1369	108423	761	13384

Table – 13 : Imports Value of Diamond : Total (By Countries)

Country	2013-14	2014-15 (P)
	Value (₹'000)	Value (₹'000)
All Countries	**1349155094**	**1252140913**
Belgium	537692327	547561423
UAE	334240597	246212415
Hong Kong	198835837	135493143
Israel	72285440	66438542
Botswana	22645728	55940629
Russia	45269387	46933908
Saudi Arabia	9476423	37070845
USA	38365580	36268140
Canada	5495755	18349497
Other countries	84848020	61872371

Note: *Quantity not given due to partial coverage; value figures, however, have full coverge.*

Table – 14 : Imports of Diamond (Industrial) (By Countries)

Country	2013-14		2014-15 (P)	
	Qty (carats)	Value (₹'000)	Qty (carats)	Value (₹'000)
All Countries	**3135870**	**6755910**	**520983**	**298568**
Russia	129324	32212	334276	125124
Belgium	6566	11209	32507	38783
Zimbabwe	-	-	6754	33164
Congo, D. Rep.of	1484	1782	28339	27611
Congo, P. Rep.of	-	-	40749	27561
USA	255	1202	13146	14486
Botswana	-	-	40247	12991
South Africa	110	1176	20441	11498
Guinea	-	-	660	2960
UK	47099	66334	2242	3129
Other countries	2951032	6641995	1622	1261

Table – 15 : Imports of Diamond (Powder) (By Countries)

Country	2013-14		2014-15 (P)	
	Qty ('000 carats)	Value (₹'000)	Qty ('000 carats)	Value (₹'000)
All Countries	**168540**	**1228132**	**351378**	**1494388**
China	151967	952187	313840	1151011
Ireland	4065	72924	5405	72024
USA	3830	52168	5933	60129
Turkey	-	-	15	56489
Hong Kong	2464	27710	19432	43704
Belgium	1587	33660	2207	39669
Korea, Rep. of	2895	36109	2698	35328
Switzerland	295	8737	725	16244
UAE	791	21305	462	7633
Germany	246	7155	244	5509
Other countries	400	16177	417	6648

Table – 16 : Imports of Diamond (Mostly Uncut) (By Countries)

Country	2013-14		2014-15 (P)	
	Qty (carats)	Value (₹'000)	Qty (carats)	Value (₹'000)
All Countries	**146612350**	**1341171052**	**150487349**	**1250347957**
Belgium	67478578	537647459	72213876	547522640
UAE	35812794	334219292	34460027	246212415
Hong Kong	16954793	192243841	10301636	135493143
Israel	4513544	72285440	4566305	66437968
Botswana	2523592	22645728	5626424	55927638
Russia	6314607	45237175	7727040	46808784
Saudi Arabia	929941	9476423	2680462	37070845
USA	3395774	38312210	4806933	36253654
Canada	1947309	5495755	2693723	18349497
Unspecified	32837	4579563	73844	14641849
Other countries	6708581	79028166	5337079	45629524

FUTURE OUTLOOK

Private companies like De Beers India and Rio Tinto India, based on the geological database provided by GSI, were granted RPs for diamond exploration. The total area covered under RP is 1,40,000 sq km. The major focus was in the States of Andhra Pradesh, Chhattisgarh, Karnataka and Madhya Pradesh. Further, PLs were granted to these companies. Based on PL, Rio Tinto India, has applied for ML in Madhya Pradesh.

The Diamond Industry in the country currently employs over 8 lakh artisans who are experts in cutting and polishing of small diamonds and are now in a position to process full range of sizes and qualities of gemstones using latest technology.

The Indian Cutting & Polishing Sector is facing growing competition from China due to the fact that the diamond producing African countries are demanding a greater share for processing of roughs within their countries. Thus, according to a KPMG analysis, by 2015, India's share in value terms will come down to 49.3% of the world diamond roughs from the present 65%. In the same period, China's share is expected to grow to 21.3%, Russia to 7.1%, South Africa to 5.5%, Israel to 4.7% and USA to 1.4%.