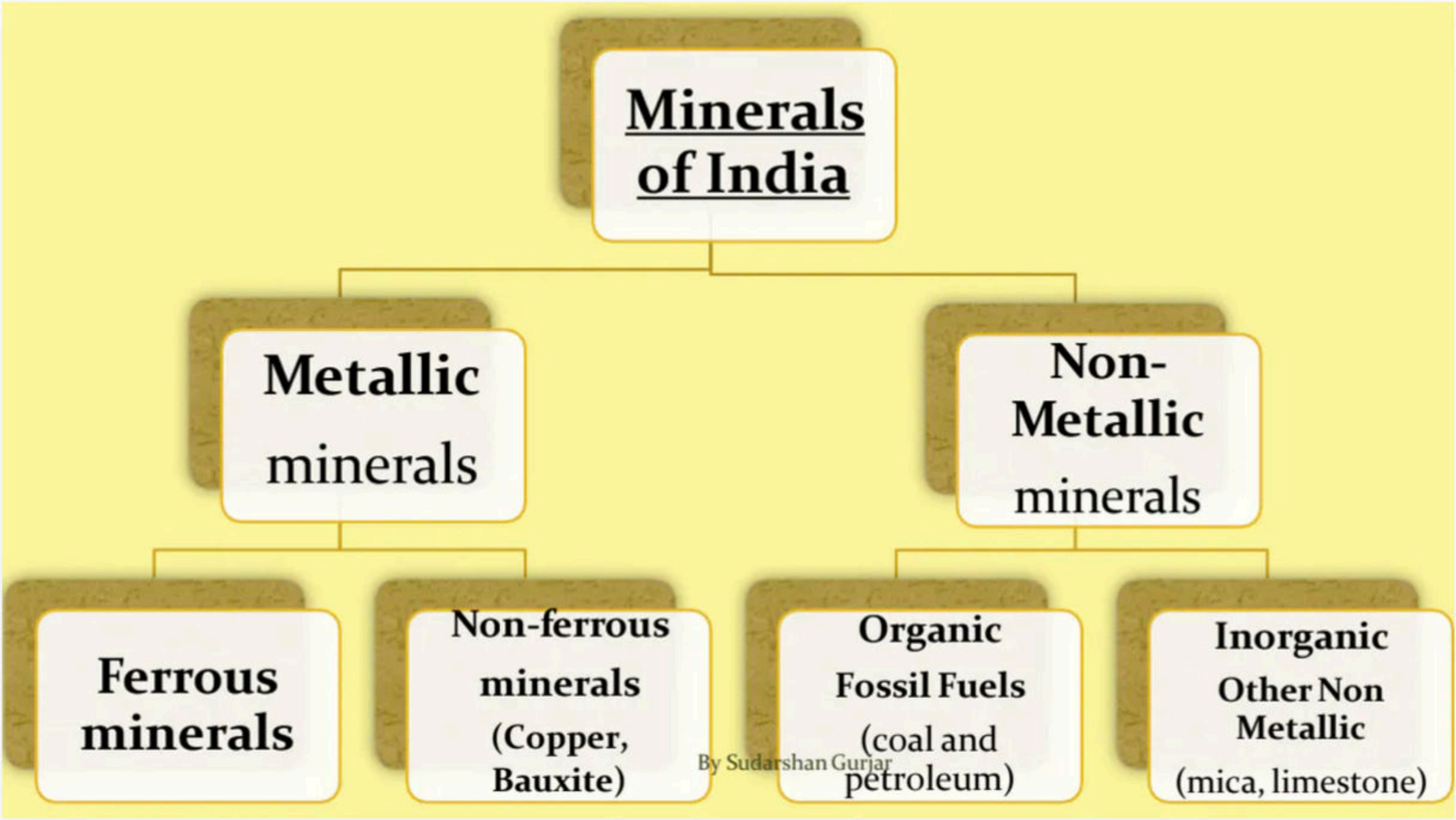
Industries of India and Doubt Clearing Session

Crash Course on Indian Geography

Sudarshan Gurjar • Lesson 7 • May 8, 2021

Minerals & Industrial Region of India - Part II

By Sudarshan Gurjar


Minerals of India
Metallic minerals
Non-Metallic minerals
Ferrous minerals
Non-ferrous minerals (Copper, Bauxite)
Organic Fossil Fuels (coal and petroleum)
Inorganic Other Non Metallic (mica, limestone)
By Sudarshan Gurjar

- **Distribution of Minerals**

- **North-Eastern Plateau Region.**
- The major areas of north-eastern plateau region are
- Chhotanagpur (Jharkhand), Odhisa, West Bengal, and parts of Chhattisgarh.
- Iron ore, coal, manganese, bauxite, and mica are the major minerals of the north-eastern plateau region.

- **South-Western Plateau Region**
- The south-western plateau region covers major parts of
- Karnataka, Goa, and contiguous Tamil Nadu uplands and Kerala.
- Major mineral resources of south-western plateau region are iron ore, manganese, and limestone.
- Kerala has deposits of monazite and thorium, and bauxite clay and Goa has deposits of iron ore.

- **North-Western Region**
- The north-western region covers the areas of Aravalli in Rajasthan and parts of Gujarat.
- Major minerals of north-western regions are copper and zinc
- other significant minerals include sandstone, granite, and marble, along with Gypsum deposits.
- In addition, Gujarat and Rajasthan, both have rich sources of salt.
- The **Himalayan belt** is also an important mineral belt, as it has rich deposits of copper, lead, zinc, cobalt, and tungsten.

Metallic Minerals

mainly reserved in Archean Formations.

Archean rocks, also known as Pre-Cambrian rocks are the oldest rocks of the earth's crust.

devoid of any form of remnants of life in them.

The Archean rocks in India are called Purana Rocks means the oldest rocks.

Aravallis mountains 2/3rd of the Deccan peninsula.

metallic minerals such as iron, copper, manganese, bauxite, lead, zinc, gold, silver.

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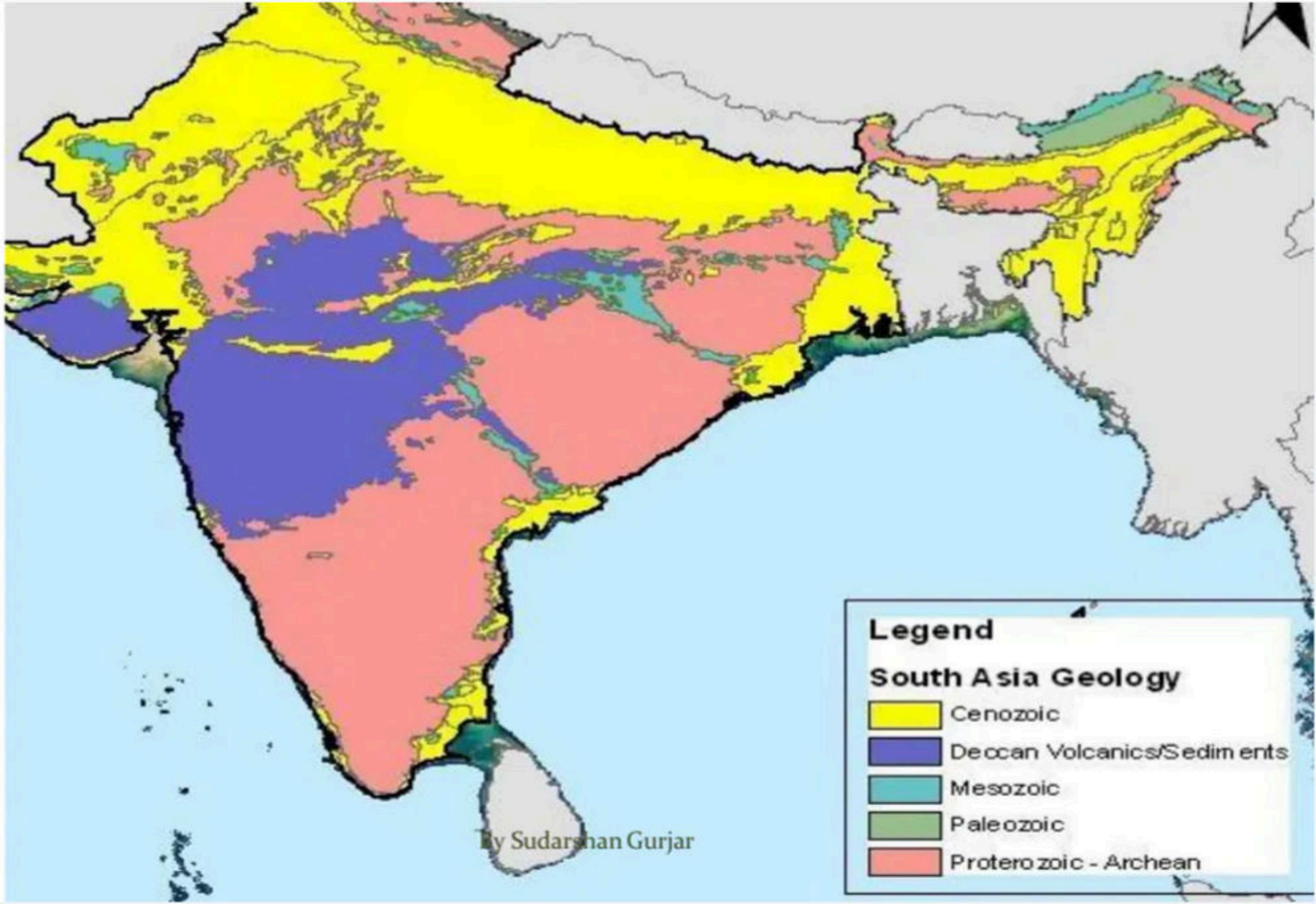
Legend
South Asia Geology
Cenozoic
Deccan Volcanics/Sediments
Mesozoic
Paleozoic
Proterozoic - Archean
By Sudarshan Gurjar

- **Metallic Minerals**
- Metallic Minerals form an important section of mining activity in India and provide solid base to metallurgical industries in the country.
- **Iron Ore**
- Iron Ore is a metal of universal use.
- It is the backbone of modern Civilisation.
- It is the foundation of our basic industry & is used all over the world.
- Following four varieties of Iron ore are generally recognised.

1) Magnetite
2) Haematite
3) Limonite
4) Siderite

- **1) Magnetite**
- This is the best quality of Iron ore & contain 72% pure Iron.
- It is found in Andhra Pradesh, Jharkhand, Goa, Kerala, Tamil Nadu and Karnataka.
- **2) Haematite**
- It contains 60% to 70% pure Iron & is found in Andhra Pradesh, Jharkhand, Orissa, Chhattisgarh, Goa, Karnataka, Maharashtra and Rajasthan.

- **3) Limonite**
- It contains 40% to 60% pure iron.
- It is of yellow or light brown colour.
- **4) Siderite**
- It contains many impurities and has just 40% to 50% pure iron.
- Due to presence of lime it is self fluxing.

Production of Iron Ore in India

- Karnataka
- Odisha
- Chhattisgarh
- Goa
- Jharkhand

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Karnataka

Karnataka is the leading producer of iron ore accounting for about one-fourth of the total iron ore production of the country.

i) Bababudan Hills :- Lying in Chikmagalur district of Karnataka.

- Kemmangundi Mines.
- They are rich in Haematite deposits with ferrous content of 60% to 65%.
- **The iron ore is mainly exported to Iran through the port of Mangalore.**

Karnataka

ii) Kudremukh Deposits :- Lie in the Chikmagalur district of Karnataka.

- They contains iron ore of the magnetic category with a metal content of 50% to 65%.
- The Kudremukh deposits were developed under an export agreement with Iron.
- The iron ore is exported through the seaport of Mangalore.

iii) Bellary - Sandur Hospet region.

Other Region Shimoga, Dharwar, Tumkur

KARNATAKA


Bidar
Bijapur
Gulbarga
Belgaum
Dharwad
Uttara
Kannada
Bellary
Shimoga
Chitradurga
Chikmagalur
Tumkur
Kolar
Dakshina
Kannada
Hassan
Banagalore
Mandya
Kodagu
Mysore
India
By Sudarshan Gurjar

Odisha

- The contribution of Odisha in the total production of iron ore in the country is about 22%.
- **i) Badampahar:-** Situated in the Mayurbhanj district of Odisha.
- Gurumahisani Mines,Sulaipat region.
- Badam Pahar has rich depositsof iron ore.
- Iron ore from Badampahar is supplied to Bokaro, Durgapur, Jamshedpur and Raurkela.

Odisha

- **ii) Bonaigarh Range:-** Situated in the district of Sundergarh.
- It is one of the most important iron ore bearing ranges.
- Iron ore is of haematite category which is suppied to Bokaro, Durgapur, Jamshedpur and Raurkela.


ORISSA
Sundargarh
Mayurbhanj
Jharsuguda
Kendu-
jhar
Deba-
garh
Sambal-
pur
Bargarh
Baleshwar
Bhadrak
Sonapur
Anugul
Dhen-
kanal
Jajapur
Baudh
Balangir
Nuapada
Cuttack
Kendrapara
Kandha-
mal
Nayagarh
Khordha
Jagatsinghapur
Puri
Kalahandi
Ganjam
Nabarangapur
Rayagada
Gajapati
Koraput
Malkangiri
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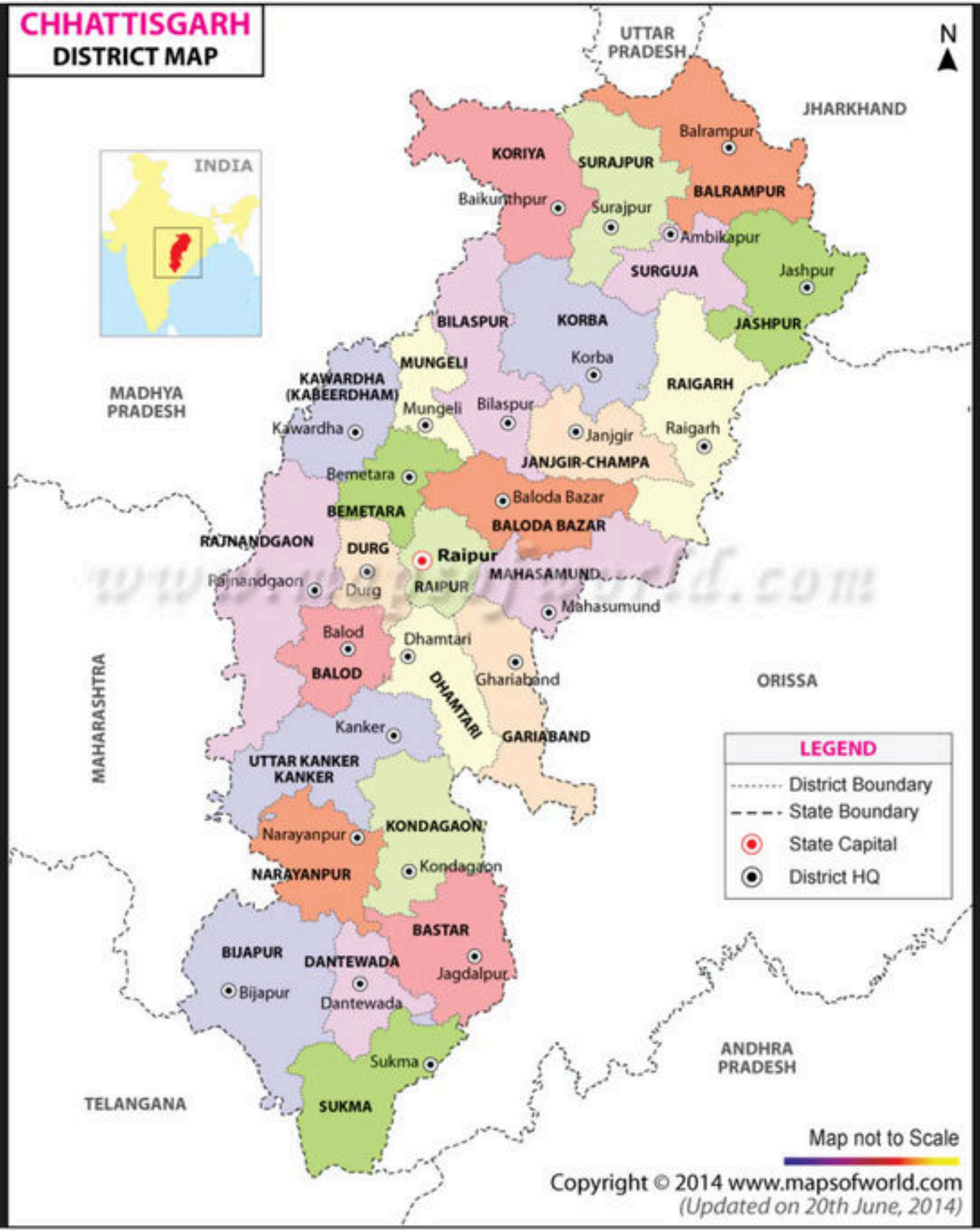
CHHATTISGARH
DISTRICT MAP
N
INDIA
UTTAR PRADESH
JHARKHAND
MADHYA PRADESH
MAHARASHTRA
ORISSA
ANDHRA PRADESH
TELANGANA
KORIYA
SURAJPUR
BALRAMPUR
SURGUJA
JASHPUR
BILASPUR
KORBA
MUNGELI
RAIGARH
KAWARDHA (KABEERDHAM)
JANJGIR-CHAMPA
BEMETARA
BALODA BAZAR
RAJNANDGAON
DURG
Raipur
RAIPUR
MAHASAMUND
BALOD
DHAMTARI
GARIABAND
UTTAR KANKER
KANKER
KONDAGAON
NARAYANPUR
BASTAR
BIJAPUR
DANTEWADA
SUKMA
Baikunthpur
Surajpur
Ambikapur
Jashpur
Korba
Mungeli
Bilaspur
Janjgir
Raigarh
Kawardha
Bemetara
Baloda Bazar
Rajnandgaon
Durg
Mahasumund
Balod
Dhamtari
Ghariaband
Kanker
Narayanpur
Kondagaon
Jagdalpur
Bijapur
Dantewada
Sukma
LEGEND
District Boundary
State Boundary
State Capital
District HQ
Map not to Scale
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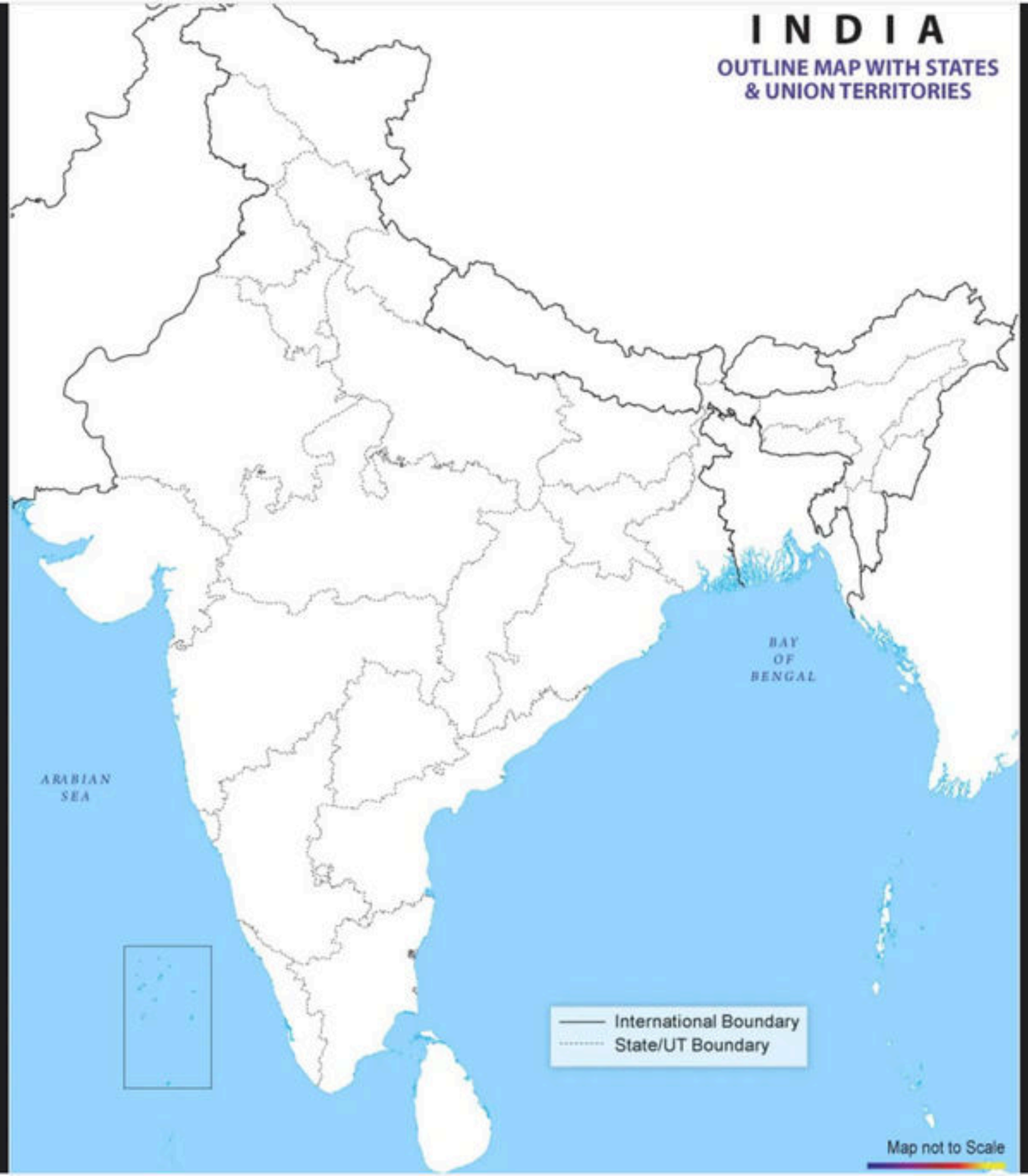
(Updated on 20th June, 2014)


INDIA
OUTLINE MAP WITH STATES
& UNION TERRITORIES
BAY
OF
BENGAL
ARABIAN
SEA
International Boundary
State/UT Boundary
Map not to Scale

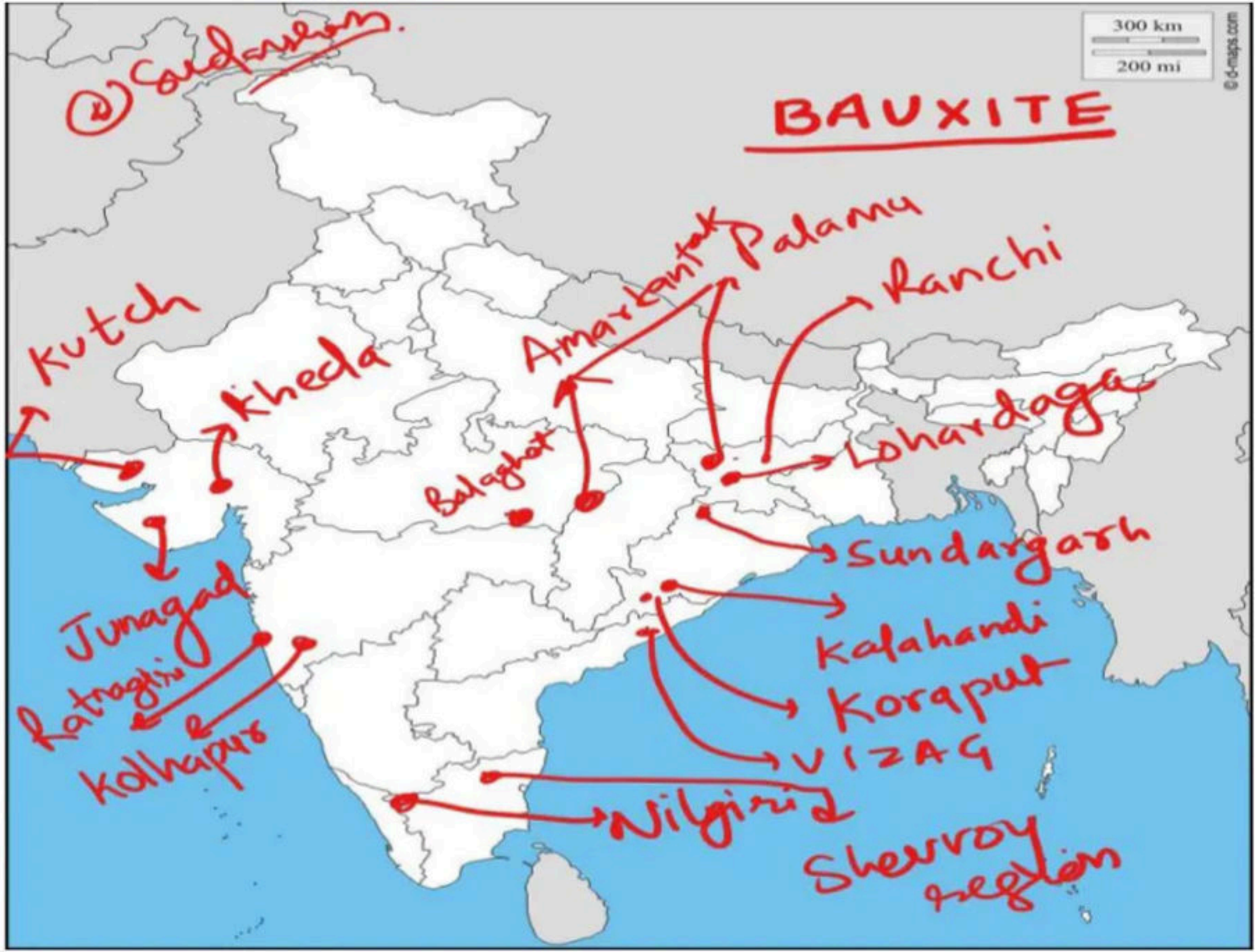
Bauxite

Bauxite

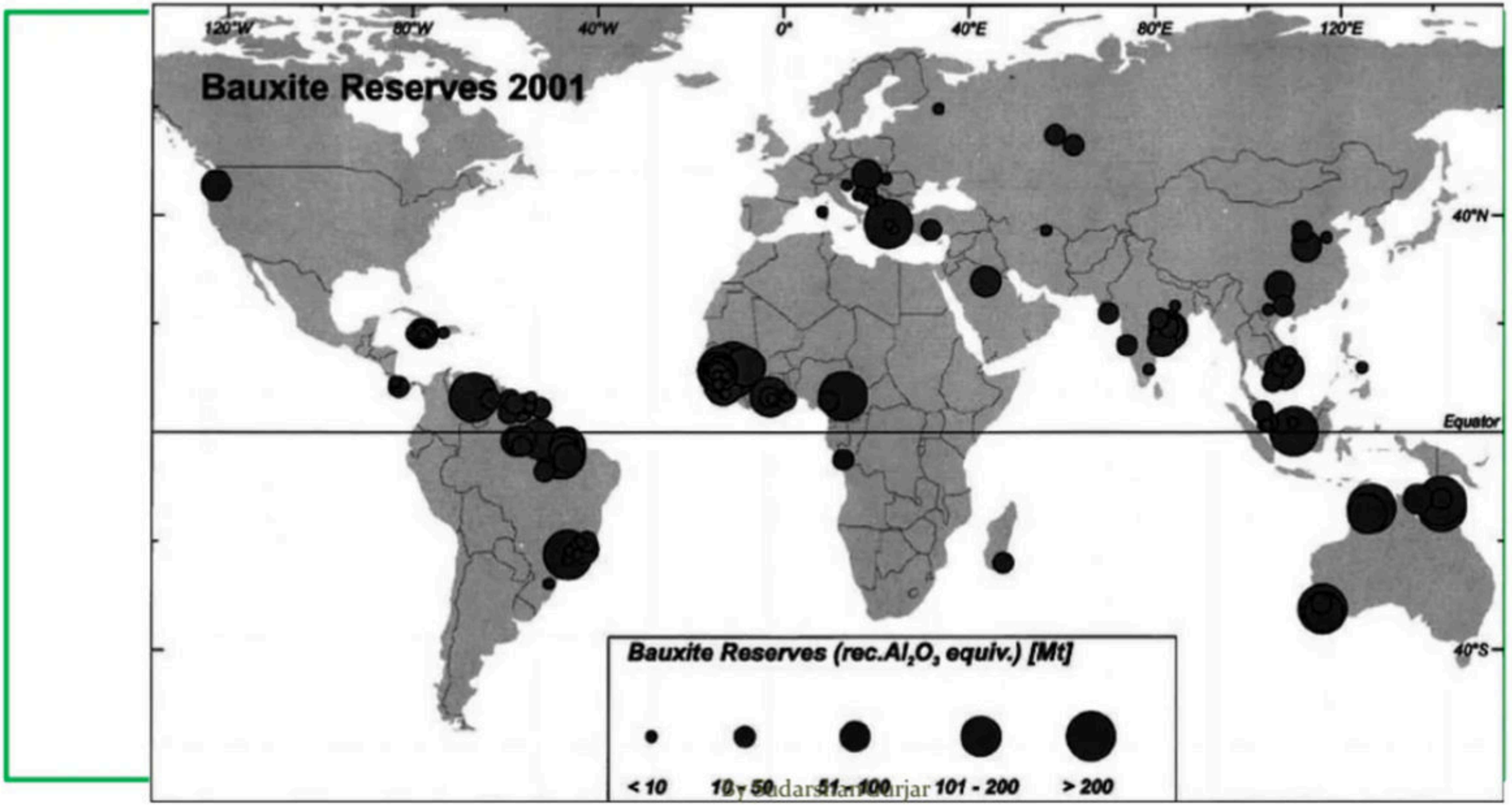
Bauxite ore is the primary source of aluminium. The ore is chemically processed to produce aluminium oxide.

Odisha	• **Largest bauxite producing state.** • **Major mines: Koraput, Kalahandi districts.** • **Others: Sundargarh, Sambalpur districts.** • **The deposits extend further into the state of Andhra Pradesh.**
Chhattisgarh	• Second largest producer. • Maikala range in Bilaspur, Durg districts and the Amarkantak plateau regions of Surguja, and Bilaspur are some of the areas having rich deposits of bauxite.
Maharashtra	• Third largest producer. • Largest deposits occur in Kolhapur district. • Kolhapur district contain rich deposits with alumina content 52 to 89 per cent. • Other districts: Ratnagiri, Thane, Satara and Pune.

Jharkhand	• Ranchi, Lohardaga, Palamu districts. • High grade ore occursin Lohardaga.
Gujarat	• The most important deposits occur in a belt lying between the Gulf of Kachchh and the Arabian sea through Jamnagar, Bhavnagar, Junagadh and Amreli districts.
Madhya Pradesh	• Amarkantak plateau area, the Maikala range in Shandol, Mandla and Balaghat districts and the Katni area of Jabalpur district are the main producers.
Tamil Nadu	• Nilgiri and Salem are the main bauxite producing districts.


BAUXITE
300 km
200 mi
Kutch
Kheda
Amarkantak
Palamu
Ranchi
Lohardaga
Bilaghat
Sundargarh
Kalahandi
Koraput
VIZAG
Nilgiri
Shevroy region
Junagad
Ratnagiri
Kolhapur

Bauxite Reserves in India		Bauxite Production in India		
State	**% share**	**State**	**Production (MT) 2017-18**	
1. Odisha	51%	1. Odisha	7.8	52%
2. Andhra Pradesh	**16%**	**2. Jharkhand**	**2.1**	**14%**
3. Gujarat	9%	3. Chhattisgarh	2	13.3%
4. Jharkhand	6%	4. Gujarat	1.6	10.7%
Total	3.9 BT	Total	15 MT	


Bauxite Reserves 2001
120°W
80°W
40°W
0°
40°E
80°E
120°E
40°N
Equator
40°S
Bauxite Reserves (rec.Al2O3 equiv.) [Mt]
< 10
10 - 50
51 - 100
101 - 200
> 200

World's Bauxite Reserves

Country	Reserves (BT)
1.Guinea	7.4
2.Australia	6
3.Vietnam	3.7
4.Brazil	2.6
Total	~ 30 BT

World's Bauxite Production

Country	Production (MT)
1.Australia	89
2.China	65
3.Guinea	47
4.Brazil	38
5.India	15

By SudarshanGurjar

Copper

- Copper is one of the few metals that **occurs in nature in directly** usable metallic form (native metals).Copper is a malleable and ductile metal with very high thermal and **electrical conductivity**.

Copper ore reserves in India				
State	**Ore Reserves (MT)**		**Metal Reserves (MT)**	**Major districts with ore reserves**
1. Rajasthan	**813**	**54%**	**4.5**	**Jhunjhunu (Khetri-Singhana)**
2. Jharkhand	295	19.5%	3.2	**Singhbhum**
3. Madhya Pradesh	283	18.8%	3.4	**Balaghat (Malanjkhand copper mines)**
Total	1.51 BT		12.1 MT	

Copper Ore and Coper Metal production in India in 2017-18		
State	**Copper Ore Production (MT)**	**Copper Metal Production (TT)**
Madhya Pradesh	**2.3**	**20**
Rajasthan	1.1	11.2
Jharkhand	0.18	1.5
Total	3.68 MT	33 TT

Escondida Mine -Chile

World's Copper Reserves in MT		World's Copper Production in MT	
Country	**Reserves**	**Country**	**2017**
1. Chile	**170**	**Chile**	**5.5**
2. Australia	**88**	**Peru**	**2.4**
3. Peru	83	China	1.7
World Total	830 MT	USA	1.3

Manganese

- Manganese is very hard and brittle in nature.
- It is always available in combination with iron, laterite and other minerals.
- Manganese is added to steel to increase its strength.

India's Manganese Ore Reserves as of 2015 have been placed at 496 MT		India's Manganese Ore Production 2017-18 in TT	
State	% Share	State	Production
Odisha	44%	Madhya Pradesh	831
Karnataka	22%	Maharashtra	731
Madhya Pradesh	12%	Odisha	517
Maharashtra	7%	Karnataka	294
Goa	7%	Andhra Pradesh	167
Andhra Pradesh	4%	Total	2.6 MT

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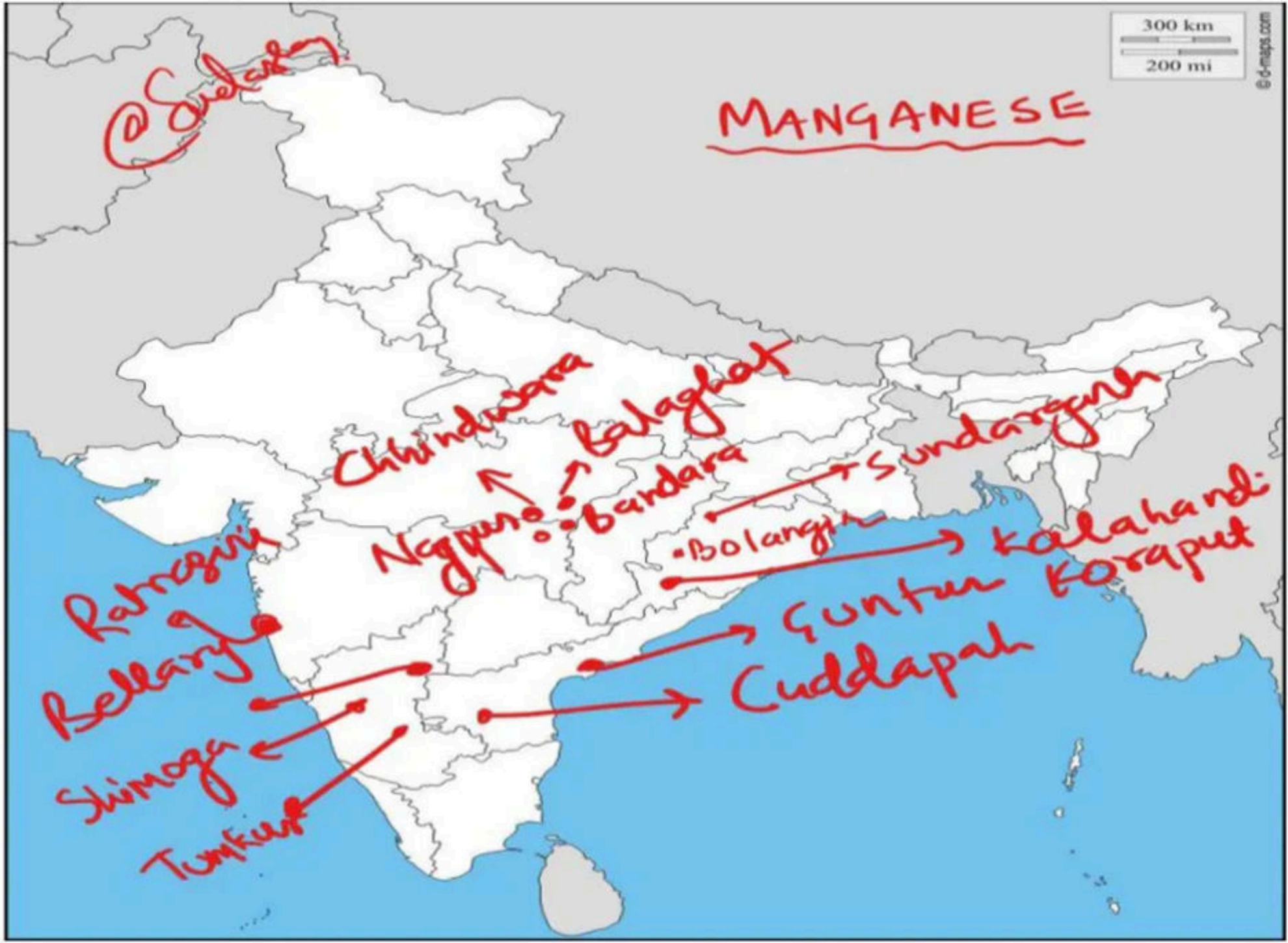
300 km
200 mi
MANGANESE
Chhindwara
Balaghat
Nagpur
Bandara
Sundargarh
Bolangir
Kalahandi
Koraput
Ratnagiri
Bellary
Guntur
Cuddapah
Shimoga
Tumkur

Madhya Pradesh (**Balaghat & Chhindwara** districts),
Maharashtra (**Bhandara & Nagpur** districts),
Gujarat (Panchmahal district)
Odisha (**Sundargarh district,Kalahandi,Koraput**

Andhra Pradesh (**Srikakulam** district).

World's Manganese Ore Reserves in MT		World's Manganese Ore Production in MT	
Country	Reserves	Country	Production
South Africa	230	South Africa	13.8
Ukraine	140	China	12.5
Brazil	110	Australia	6
Australia	99	Gabon	4
India	33	Ghana	3
World Total	760 MT	India	2.5

Gold

Karnataka	• Gold mines are located in Kolar (Kolar Gold Field), Dharwad, Hassan and Raichur (Hutti Gold Field) districts. • Kolar Gold Fields is one of the deepest mines of the world. (Usually, gold mines are the deepest mines in the world. **Mponeng Gold Mine in South Africa is one of the deepest mine in the world (3.9 km deep)**
Jharkhand	• Sands of the Subarnarekha (gold streak) river have some alluvial gold.
Andhra Pradesh	• Ramagiri in Anantapur district is the most important gold field in AP

World's Gold Reserves (in MT)		World's Production of Gold in 2017 (in TT)		
Country	Reserves	Country	Production	
Australia	9.8	China	426	13%
South Africa	6	Australia	294	9%
Russia	5.3	Russia	270	8%
USA	3	USA	237	7%
Peru	2.6	Canada	176	5%
Indonesia	2.5	Peru	151	5%
Brazil	2.4	Ghana	137	4%
Canada	2	South Africa	137	4%
China	2	Mexico	127	4%
World Total	54 MT	World Total	3.3 MT	

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Major gold mines

- The Muruntau mine, Uzbekistan
- Kalgoorlie Gold Mine, Western Australia.
- Boddington Gold Mine, Western Australia.
- Grasberg mine, Indonesia.

Lead, Zinc, Silver

- Lead is a **corrosion-resistant, ductile** (can be drawn out into a thin wire) and **malleable** (can be hammered into shape without breaking) blue-grey metal. It is a **bad conductor.**

- World-wide largest single use of lead today is in the manufacture of batteries.
- Other major uses of lead are in the manufacture of storage batteries, paints.

World's Lead Reserves (in MT)		World's Lead Production (in thousand tons)		World's Zinc Reserves (in MT)		World's Zinc Production (in thousand tons)	
Country	Reserves	Country	Year 2017	Country	Reserves	Country	Year 2017
Australia	24	China	2300	Australia	64	1.China	4300
China	18	Australia	459	China	44	2.Peru	1473
Russia	6.4	Peru	307	Peru	21	3.Australia	841
World Total	83 MT			World	230 MT	4. India	784

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State	Reserves (MT)		Major Mines in Rajasthan
Rajasthan	670	89%	• Bhilwara district • Ajmer district • Rajsamand district • Zawar group of mines (Udaipur district),
Andhra Pradesh	22.7	3%	
Madhya Pradesh	14.8	2%	
Bihar	11.4	1.5%	
Maharashtra	9.3	1.24%	

- Almost the entire production of zinc and lead comes from **Rajasthan**.

World's Silver Reserves (in TT)		World's Production of Silver in 2017 (in TT)	
Country	Reserves	Country	Production
Peru	110	3.Mexico	5.8
Poland	110	2.Peru	4.3
Australia	89	3'China	3.5
World Total	560	India	0.5 TT

Chromite

- More than 96% resources of chromite are located in **Odisha** (**Jajpur, Kendujhar and Dhenkanal** districts).
- Minor deposits are scattered over **Manipur, Nagaland , Karnataka**, etc.

World's Chromium Metal Reserves in MT		World's Chromite Production in MT	
Country	**Reserves**	**Country**	**2017**
1. Kazakhstan	**230**	**1. South Africa**	**16.5**
2. South Africa	200	2. Turkey	6.6
3. India	**100**	3. Kazakhstan	6.3
World Total	560	**4. India**	**3.4**

Mica

- Mica is a naturally occurring non-metallic mineral that is based on a collection of **silicates**.
- Mica is a very good insulator that has a wide range of applications in electrical and electronics industry.

Total resources of Mica in India in MT	
State	Reserves
Andhra Pradesh	41%
Rajasthan	21%
Odisha	20%
Maharashtra	15%
Total	110 TT

Asbestos

It is widely used for making **fire-proof** cloth, rope, etc

- **Rajasthan (59% – Ajmer, Udaipur, Bhilwara) and Karnataka (36% – Chikkamagaluru, Hassan,)** have the highest reserves.
- **Russia**, China, and Brazil have 99% of the asbestos reserves.

India's Limestone Reserves in BT			India's Production of Limestone (2017-18) in MT		
State	**Reserves**		**State**	**Production**	**Regions**
1. Karnataka	55	27%	1. Rajasthan	75	22%	Almost all districts
2. Andhra Pradesh	**24**	**12%**	**2. Madhya Pradesh**	**44**	**13%**	Jabalpur, Satna, Betul
3. Rajasthan	24	12%	3. Andhra Pradesh	37	11%	Kurnool, Guntur
4. Gujarat	20	10%	4. Chhattisgarh	37	11%	Bastar, Durg, Raipur
5. Meghalaya	18	9%	5. Karnataka	31	9%	Kalburgi, Shimoga
Total	203 BT		Total	340 MT		

Limestone

Limestone is sedimentary rock composed mainly of **calcium carbonate** ($CaCO_3$).

The most important constituents of limestone are **calcite, magnesite (magnesium carbonate)** and **dolomite (calcium magnesium carbonate)**.

India's Limestone Reserves		India's Production of Limestone (2017-18) in MT			
State	Reserves	State	Production		Regions
Karnataka	27%	Rajasthan	75	22%	Almost all districts
Andhra Pradesh	12%	Madhya Pradesh	44	13%	Jabalpur, Satna, Betul
Rajasthan	12%	Andhra Pradesh	37	11%	Kurnool, Guntur
Gujarat	10%	Chhattisgarh	37	11%	Bastar, Durg, Raipur
Meghalaya	9%	Karnataka	31	9%	Kalburgi, Shimoga

China – largest producer

Dolomite

Limestone with more than 10 per cent of magnesium is called dolomite.

State	Reserves	Production	Major Districts
Madhya Pradesh	27%	Orissa (29%)	Sundargarh, Sambalpur and Koraput districts
Andhra Pradesh	15%	Chhattisgarh (28%)	Bastar, Bilaspur, Durg and Raigarh districts
Chhattisgarh	11%	Jharkhand	Singhbhum district and Palamu district
Odisha	10%	Rajasthan	Ajmer, Alwar, Bhilwara, Jaipur, Jaisalmer district
Total	8.4 BT	Karnataka	Belgaum, Bijapur districts

- **Rajasthan** is by far the largest producer of gypsum in India (99 per cent of the total production of India).
- The main deposits occur in Jodhpur, Nagaur and Bikaner.

Uranium

Uranium is a silvery-grey metallic radioactive chemical element.

World's Uranium (U) Reserves (TT)		
Country	Reserves as of 2015	
Australia	1780	23%
Kazakhstan	941	12%
Canada	703	9%
Namibia	463	6%
India	139	2%
Total	7641 TT	

World's Uranium (U) Production (TT) in 2017		
Country/Region	Production	
Kazakhstan	23.3	39.2%
Canada	13.1	22.1%
Australia	5.8	9.9%
Namibia	4.2	7.1%
India	0.4	0.7%
World	59 TT	

- Olympic Dam and the Ranger mine in Southern Australia are important mines in Australia

Uranium deposits occur in **Jaduguda in Singhbhum Thrust Belt** and **Hazaribagh districts of Jharkhand**, **Gaya district of Bihar**, **Cuddapah basin of Andhra Pradesh**, **Aravallis**, & **Mahadek basin of Meghalaya**

- The state of **Andhra Pradesh** is the largest producer of uranium in India.
- Tummalapalle village located in the **Kadapa (Cuddapah) district of Andhra Pradesh** is considered as one of the largest uranium reserves in India.

Operational nuclear power plants in India

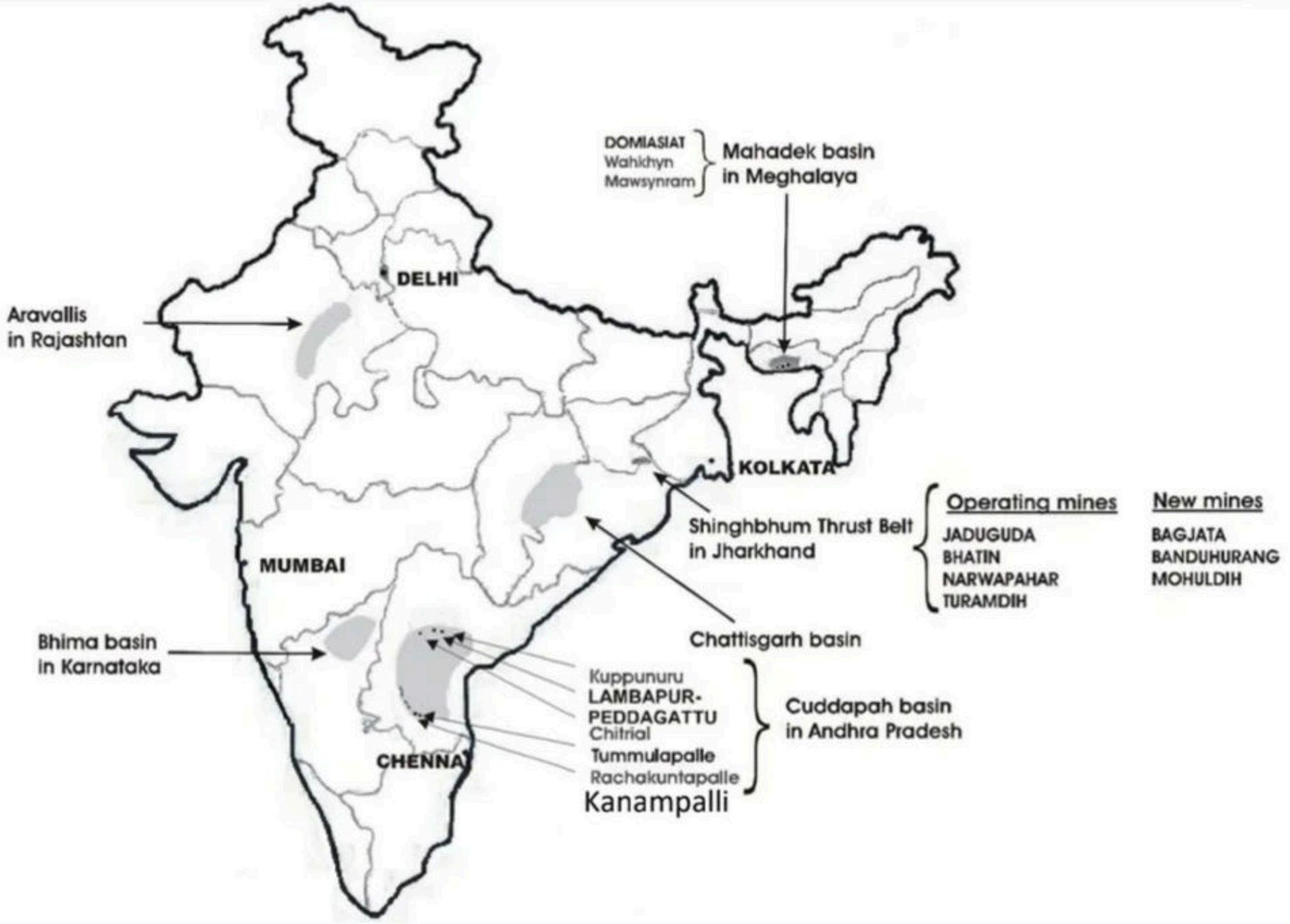
Power station	Operator	State
Kaiga	NPCIL	Karnataka
Kakrapar	NPCIL	Gujarat
Kudankulam	NPCIL	Tamil Nadu
Madras (Kalpakkam)	NPCIL	Tamil Nadu
Narora	NPCIL	Uttar Pradesh
Rajasthan	NPCIL	Rajasthan
Tarapur	NPCIL	Maharashtra

Nuclear power plants and reactors under construction in India

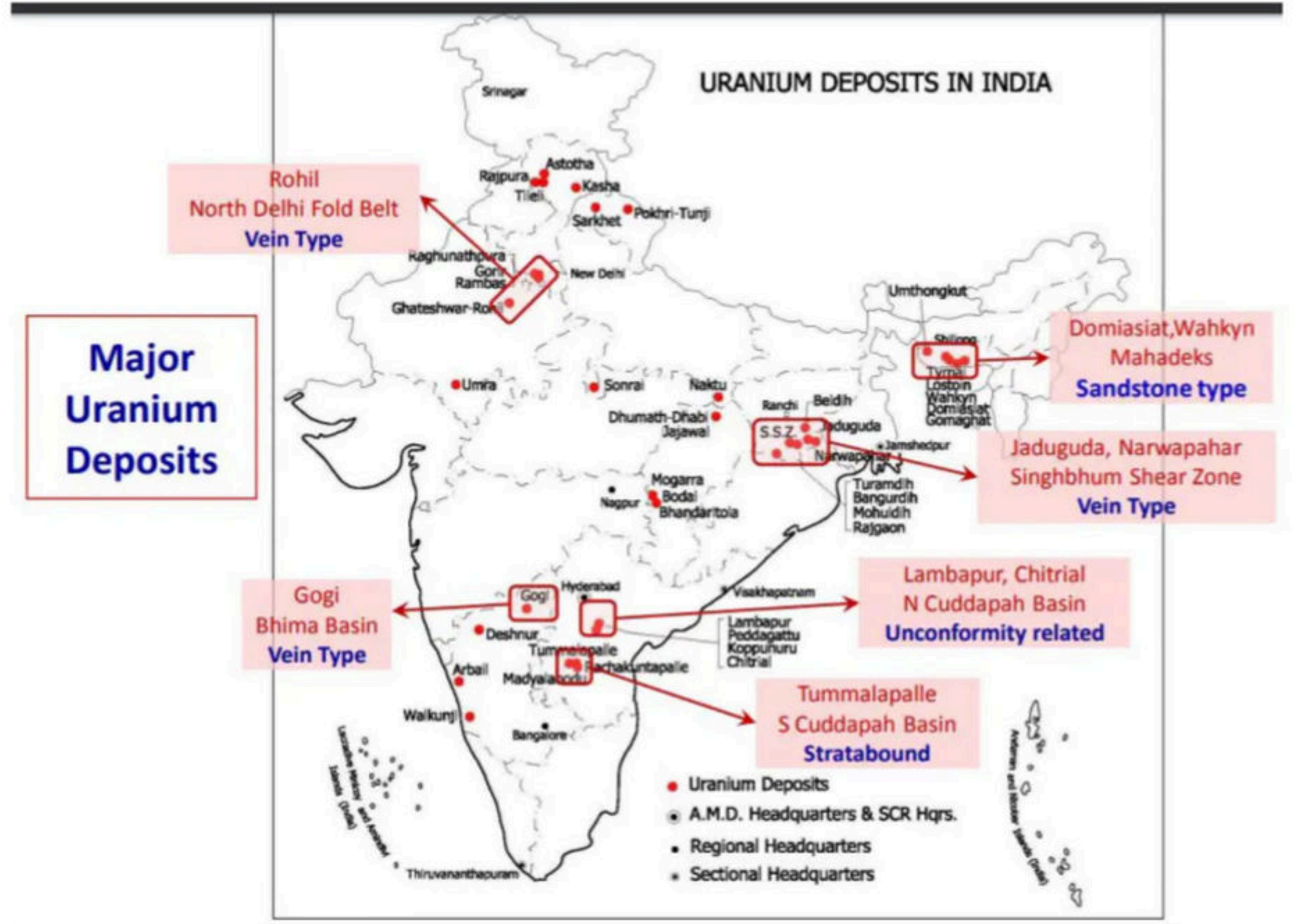
Power station	Operator	State
Madras (Kalpakkam)	Bhavini	Tamil Nadu
Kakrapar Unit 4	NPCIL	Gujarat
Gorakhpur	NPCIL	Haryana
Rajasthan Unit 7 and 8	NPCIL	Rajasthan
Kudankulam Unit 3 and 4	NPCIL	Tamil Nadu

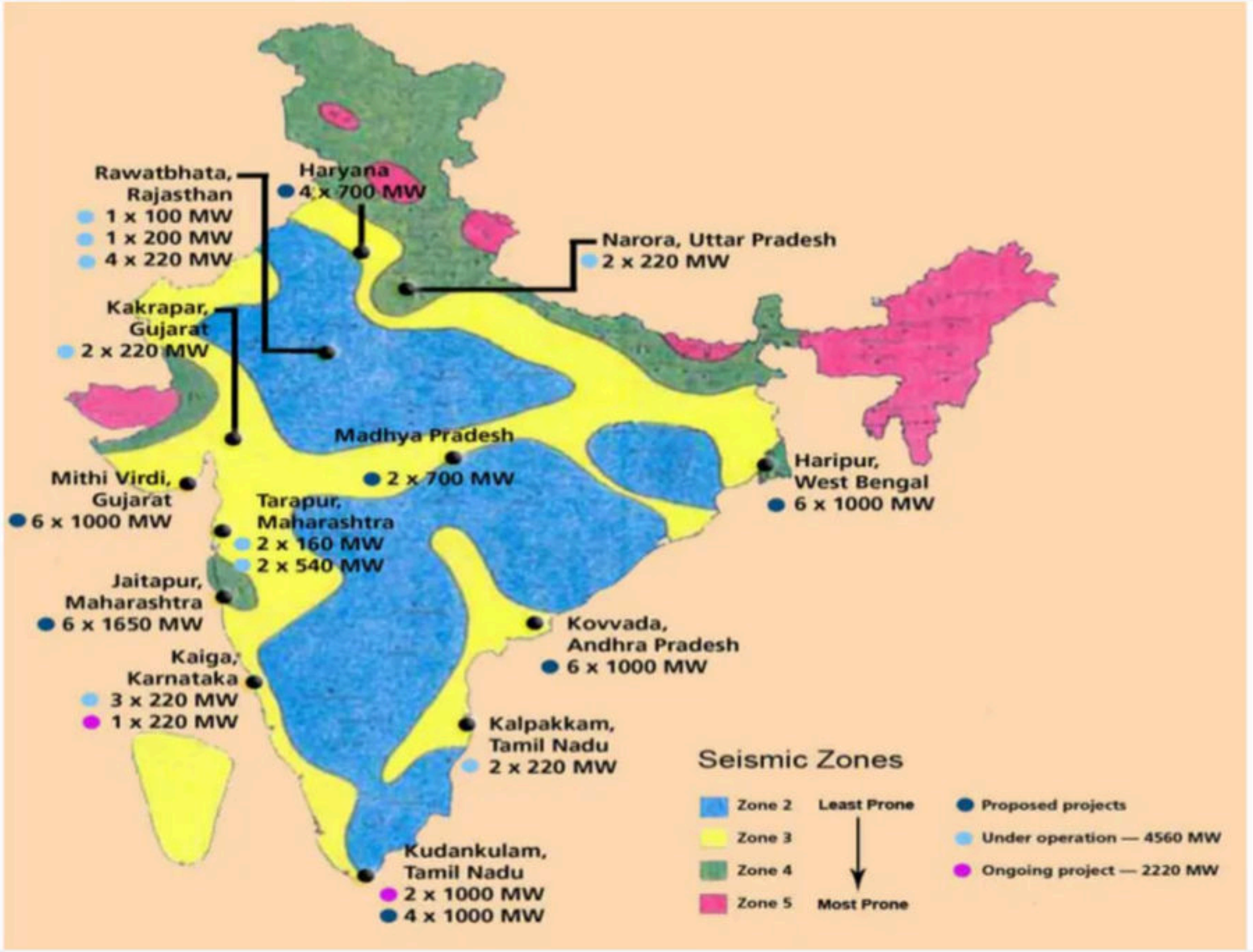
Planned nuclear power plants in India

Power station	Operator	State
Jaitapur	NPCIL	Maharashtra
Kovvada	NPCIL	Andhra Pradesh
Kavali	NPCIL	Andhra Pradesh
Gorakhpur	NPCIL	Uttar pradesh
Bhimpur	NPCIL	Madhya Pradesh
Mahi Banswara	NPCIL	Rajasthan
Kaiga	NPCIL	Karnataka
Chutka	NPCIL	Madhya Pradesh
Kudankulam Unit 5 and 6	NPCIL	Tamil Nadu
Madras	BHAVINI	Tamil Nadu
Tarapur		


DOMIASIAT
Wahkhyn
Mawsynram
Mahadek basin
in Meghalaya
DELHI
Aravallis
in Rajashtan
KOLKATA
Shinghbhum Thrust Belt
in Jharkhand
Operating mines
JADUGUDA
BHATIN
NARWAPAHAR
TURAMDIH
New mines
BAGJATA
BANDUHURANG
MOHULDIH
MUMBAI
Bhima basin
in Karnataka
Chattisgarh basin
Kuppunuru
LAMBAPUR-
PEDDAGATTU
Chitrial
Tummulapalle
Rachakuntapalle
Kanampalli
Cuddapah basin
in Andhra Pradesh
CHENNAI

Major Uranium Deposits




Rawatbhata,
Rajasthan
1 x 100 MW
1 x 200 MW
4 x 220 MW
Haryana
4 x 700 MW
Narora, Uttar Pradesh
2 x 220 MW
Kakrapar,
Gujarat
2 x 220 MW
Madhya Pradesh
2 x 700 MW
Haripur,
West Bengal
6 x 1000 MW
Mithi Virdi,
Gujarat
6 x 1000 MW
Tarapur,
Maharashtra
2 x 160 MW
2 x 540 MW
Jaitapur,
Maharashtra
6 x 1650 MW
Kovvada,
Andhra Pradesh
6 x 1000 MW
Kaiga,
Karnataka
3 x 220 MW
1 x 220 MW
Kalpakkam,
Tamil Nadu
2 x 220 MW
Kudankulam,
Tamil Nadu
2 x 1000 MW
4 x 1000 MW
Seismic Zones
Zone 2
Zone 3
Zone 4
Zone 5
Least Prone
Most Prone
Proposed projects
Under operation — 4560 MW
Ongoing project — 2220 MW

Thorium

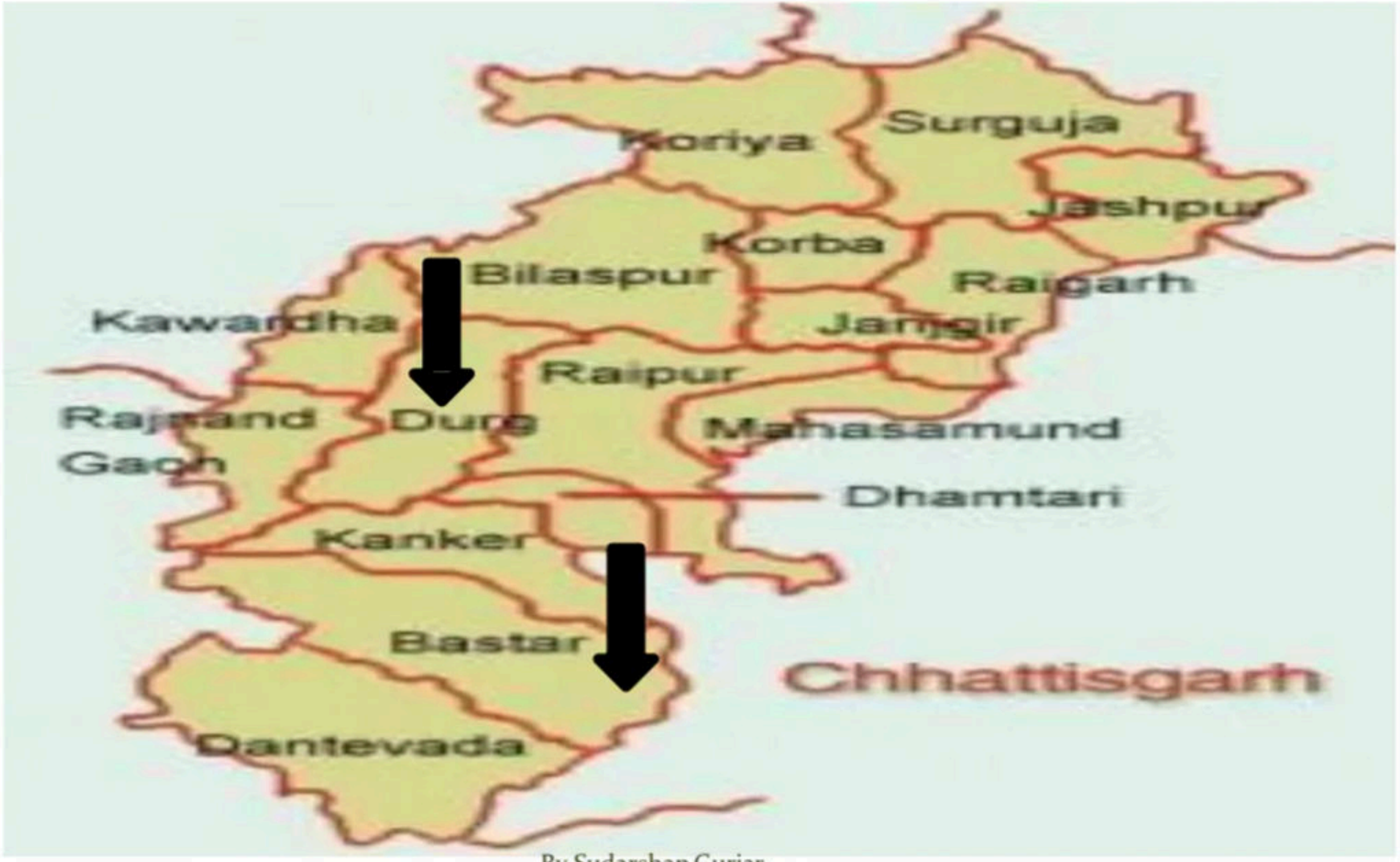
- Monazite contains 2.5% thorium and is scattered along the Kerala Coast.

World's Thorium Reserves (2011)		India's Thorium Reserves (2016)	
Country	Reserves in TT	State	Reserves
India	963	Andhra Pradesh	31%
United States	440	Tamil Nadu	21%
Australia	300	Odisha	20%
Canada	100	Kerala	16%
South Africa	35	West Bengal	10%


JHARKHAND
DISTRICT MAP
N
INDIA
BIHAR
UTTAR PRADESH
CHHATTISGARH
WEST BENGAL
ODISHA
Sahibganj
GODDA
SAHIBGANJ
Godda
Pakur
PAKUR
Koderma
KODERMA
GIRIDIH
Deoghar
DEOGHAR
DUMKA
Dumka
PALAMU
Garhwa
GARHWA
Daltonganj
Chatra
CHATRA
HAZARIBAG
Hazaribagh
Giridih
Jamtara
JAMTARA
DHANBAD
Dhanbad
BOKARO
Bokaro Steel City
LATEHAR
Latehar
Ramgarh
RAMGARH
LOHARDAGA
Lohardaga
Ranchi
RANCHI
GUMLA
Gumla
Khunti
KHUNTI
SARAIKELA-KHARSAWAN
Jamshedpur
Saraikela
EAST SINGHBHUM
Simdega
SIMDEGA
Chaibasa
WEST SINGHBHUM
Map not to Scale
Copyright © 2019 www.mapsofindia.com
LEGEND
State Boundary
District Boundary
State Capital
District Headquarter

Chhattisgarh

- This state has about 20% of the total iron ore deposits of the country.
- **Bailadila Mines** in Bastar bastar District.
- **Dalli Rajhara:-** Lies in the Durg district of Chhattisgarh.
- The Dalli Rajhara Range well known for the iron ore deposits.
- Vishakhapatnam port.



By Sudarshan Gurjar

Goa

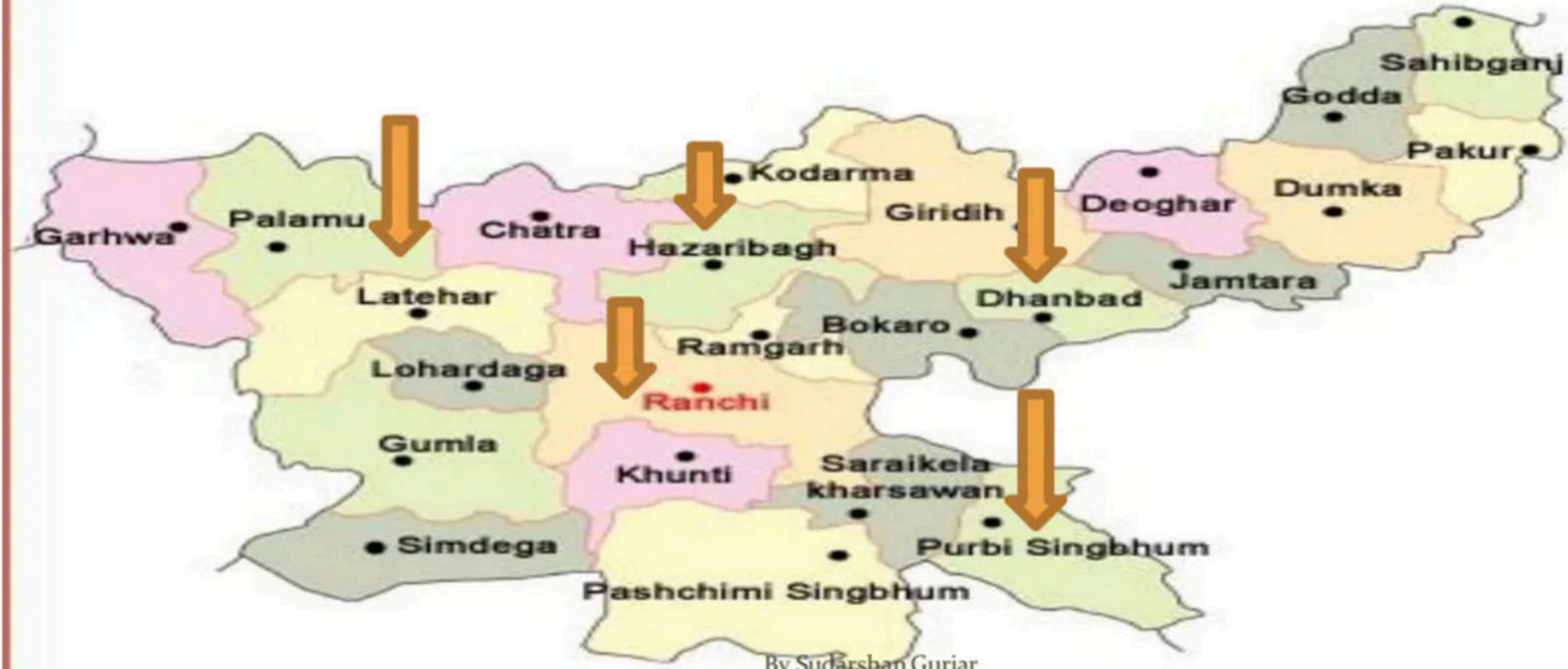
- Goa is the fourth largest producer of the iron ore of India.
- Goa produces about 18% of the total iron ore of the country.
- The main deposits & mining centres are at Pirna-Adolpale Asnora,
- Kundem-Surla
- Sirigao-Bicholim-Dalda in north Goa.
- The nearby Marmagao seaport is a big advantage to these mines for the export of iron ore.
- The iron ore is exported mainly to Japan & Iran.


MAHARASHTRA
KARNATAKA
PERNEM
BICHOLIM
BARDEZ
SATARI
North Goa
TISWADI
PONDA
MORMUGAO
GOA
SANGUEM
SALCETE
South Goa
QUEPEM
CANACONA
ARABIAN SEA
By Sudarshan Gurjar

Jharkhand

- Iron ore mining was first of all started at Singhbhum in 1904.
- The main iron ore deposits lie in Bonai Range extending for about 50Km.
- The famous mines are Naomandi, Daltenganj(Palamu district).
- Iron ore is also mined at Dhanbad, Hazaribagh, Ranchi and Santhal Pargana.

JHARKHAND



By Sudarshan Gurjar

Iron Ore in other states

- Andhra Pradesh : (Kurnool, Guntur, Khammam, Cuddapah, Ananthapur, Nellore)
- Maharashtra : (Chandrapur, Ratnagiri and Sindhudurg)
- Madhya Pradesh (0.66%).
- Tamilnadu : (Salem, North Arcor, Tiruchirapalli, Coimbatore, Madurai, Tirunelveli, Ambedkar)
- Rajasthan : (Jaipur, Alwar, Sikar, Bundi, Bhilwara, Udaipur)
- Uttar Pradesh: (Mirzapur)
- Uttarakhand : (Garhwal, Almora, Nainital)
- Himachal Pradesh: (Kangra and Mandi)

Iron Ore in other states

- Haryana: (Mahendragarh)
- West Bengal: (Burdwan, Birbhum, Darjeeling)
- Jammu and Kashmir: (Udhampur and Jammu)
- Gujarat: (Bhavnagar, Junagadh, Vadodara)
- Kerala: (Kozhikode)

Manganese

- It is used mainly for the manufacturing of iron and steel, bleaching powder, insecticides, pesticides, paints, dry-batteries, photography etc.

- **Odisha**
- **Maharashtra**
- **Madhya Pradesh**
- **Karnataka**
- **Andhra Pradesh**

Odisha

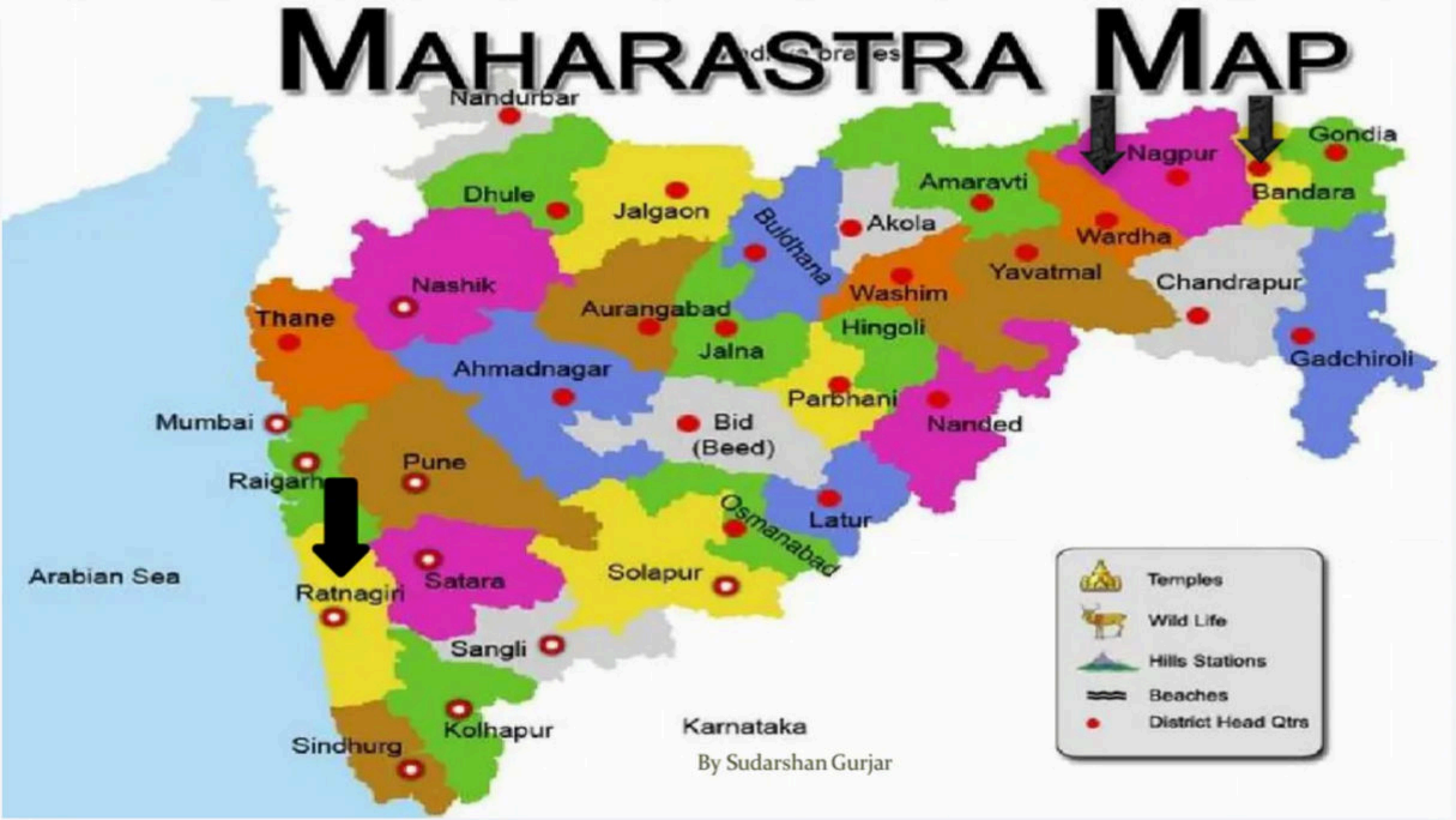
- The Gondite deposits in Sundargarh
- deposits in Kalahandi and Koraput are rich in manganese.
- Manganese is also mined in Balangir and Sambhalpur districts of Odisha.

By Sudarshan Gurjar

Maharashtra

- Maharashtra is the second largest producer of Manganese.
- Manganese is found in Bhandara, Nagpur and Ratnagiri districts.

MAHARASTRA MAP



By Sudarshan Gurjar

Madhya Pradesh

- Balaghat and Chhindwara are the main district in which it is mined.
- **Bharveli mines**
- About 20% of the total manganese production comes from the state of Madhya Pradesh.

MADHYA PRADESH

By Sudarshan Gurjar

Karnataka

- The state of Karnataka produces about 13% of the total production of manganese of the country.
- Its main deposits are in the districts of North Kannada, Shimoga, Bellary, Chitradurga and Tumkur.

KARNATAKA

By Sudarshan Gurjar

Andhra Pradesh

- About 4.5% of the total manganese production of India is done in Andhra Pradesh.
- Srikakulam and Vishakhapatnam are the leading producer districts of manganese in Andhra Pradesh.
- It is also mined in Cuddapah, Guntur

- Other State Manganese is also mined in small Quantities in Goa,
- Gujarat : (Panchmahal and Vadodara)
- Rajasthan : (Banswara and Udaipur)
- Jharkhand : (Dhanbad and Singhbhum)

Non- Ferrous Minerals

By Sudarshan Gurjar

NICKEL

- Nickel does not occur free in nature and is found in association with copper, uranium and other metals.
- It is used as an important alloying material.
- When alloyed with iron, rust proof stainless steel of superior quality is obtained from which utensils are made.
- Nickel-aluminium alloys are used for manufacturing aeroplanes and internal combustion engines.
- Metallic nickel is used for making storage batteries and as a catalyst for hydrogenation or hardening of fats and oils intended for use in soap and foodstuffs and in making vanaspati ghee.

By Sudarshan Gurjar

- Odisha : (Cuttack, Keonjhar & Mayurbhanj)
- Jharkhand : (Singhbhum)
- Rajasthan : (Khetri-Jaipur region)
- Karnataka : (Hassan and Kolar)
- Nagaland
- Jammu & Kashmir
- Kerala

By Sudarshan Gurjar

COPPER

- Copper is highly ductile, strong and good conductor of electricity.
- It is mainly used in electrical machinery, automobile, stainless steel.
- Rajasthan has the largest deposits of copper ore followed by Madhya Pradesh and Jharkhand.

Madhya Pradesh

- The state of Madhya Pradesh is the largest producer of copper in India.
- The state has a large deposits of copper in Taregaon in Malanjkhand belt of Balaghat district.
- It is also found in Bargaon of the Betul district.

MADHYA PRADESH

By Sudarshan Gurjar

RAJASTHAN

- Copper is found at Khetri-Singhana belt in Jhunjhunu district.
- It is also mined in Ajmer, Alwar, Bhilwara, Chittorgarh, Dungarpur, Jaipur, pali, Sikar and Sirohi districts.
- The Koh-Dariba(mountain), about 48km to the south-west of Alwar city and Delwara-kirovli area about 30 km from Udaipur are the other important producers of copper ore.

RAJASTHAN


GANGANAGAR
HANUMANGARH
BIKANER
CHURU
JHUNJHUNU
SIKAR
ALWAR
BHARATPUR
JAISALMER
NAGAUR
JAIPUR
DAUSA
DHAULPUR
JODHPUR
AJMER
KARAULI
TONK
SAWAI MADHOPUR
BARMER
PALI
BHILWARA
BUNDI
JALORE
RAJSAMAND
KOTA
BARAN
SIROHI
CHITTAURGARH
UDAIPUR
PRATAPGARH
DUNGARPUR
BANSWARA

JHARKHAND

- This state is the third largest producer of copper in the country.
- Copper is mined in Hazaribagh, Palamu districts.
- Gaya (Bihar).

JHARKHAND

By Sudarshan Gurjar

LEAD

- Lead is a widely used metal due to its malleability, softness, heaviness and bad conductivity of heat.
- Lead oxide is used in lead sheeting, cable covers, ammunition, paints, glass, making and rubber industry.
- It is also made into sheets, tubes and pipes which are used in buildings, especially as sanitary fittings.
- It is now increasingly used in automobiles, aeroplanes, typewriters and calculating machines.

- Lead nitrate is used in printing.
- Ores of lead occur at a number of places in the Himalayas,
- Tamil Nadu,
- Rajasthan,
- Andhra Pradesh and
- Jharkhand.

TUNGSTEN

- It is a valuable metal of which the chief ore is wolfram.
- Steel containing the requisite proportion of tungsten is mainly used in manufacturing amunitions, armour plates, heavy guns, hard cutting tools etc.
- Tungsten is easily alloyed with chromium, nickel, molybdenum, titanium etc. to yield a number of hard facing, heat and corrosion resistant alloys.
- It is also used for various other purposes such as electric bulb filaments, paints, ceramics, textiles etc.

By Sudarshan Gurjar

- Deposits of wolfram, the chief ore of tungsten are found in Degana(near Rawat Hills) in Rajasthan and Chendpathar in Bankura district of west bengal.
- Seven mineralized zones in Sakoli basin in Bhandara and Nagpur districts of Maharashtra have also been identified.

Bauxite

- Bauxite is an important ore which is used making aluminium.
- It is an oxide of aluminium(name derived after Le Beaux in France).
- It is not a specific mineral but a rock consisting mainly of hydrated aluminium oxides.
- It is a clay like substance which is pinkish, whitish or reddish in colour depending on the amount of iron content.

Orissa

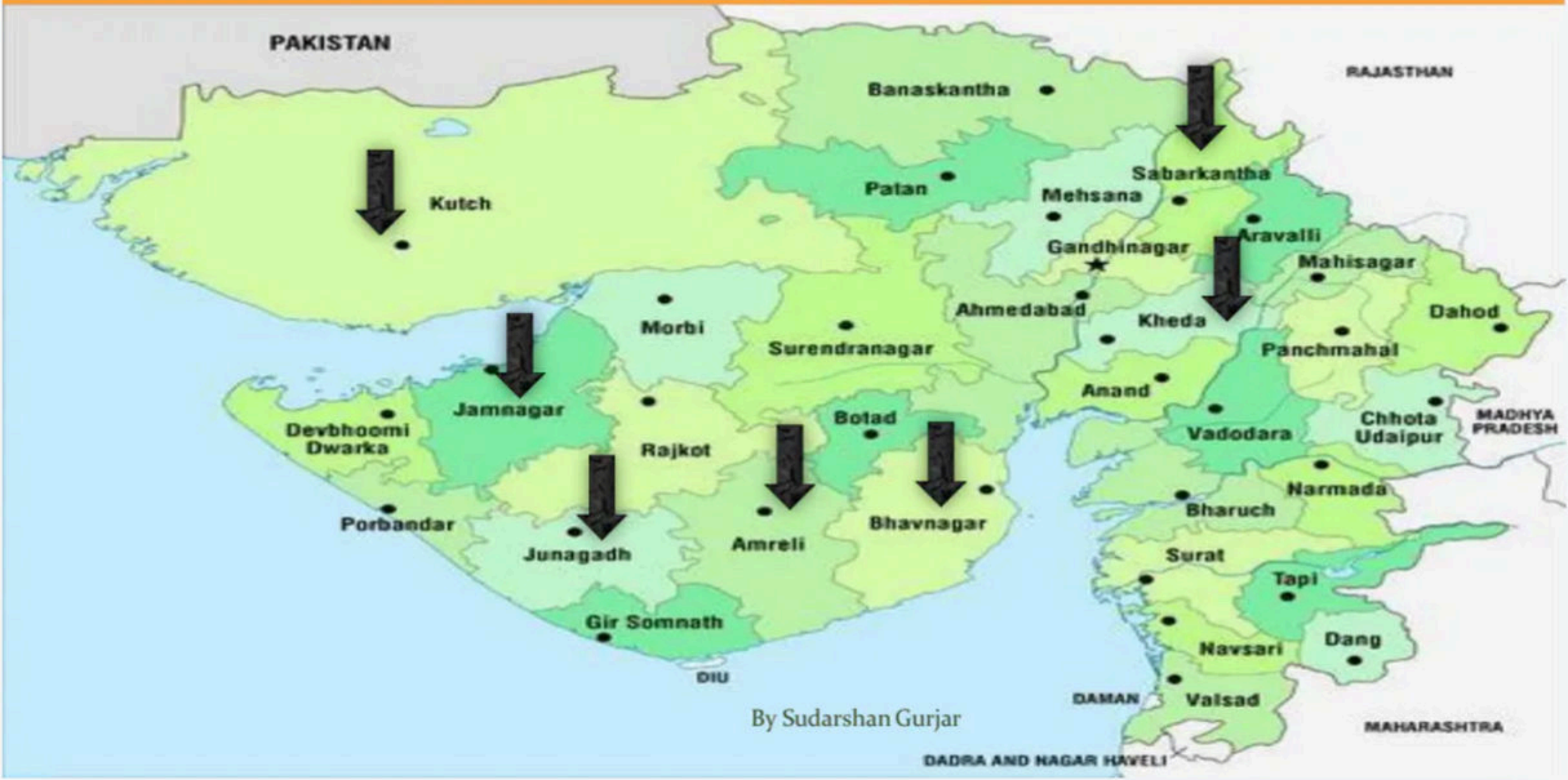
- Orissa is the largest bauxite producing state accounting for more than half of the total production of India.
- The main bauxite belt is in Kalahandi and Koraput districts and extends further into Andhra Pradesh.
- The main deposite occur in Kalahandi, Koraput, Sundargarh, Bolangir and Sambalpur districts.
- The important mining areas include Chandgiri, Baphalimoli Parbat, Kathakal, Manjimali, Pasenmali, Kunnumali, Kodingandi, Pottangi and Karalput in Kalahandi & Koraput districts.
- The new aluminium plant at Damanjodi provides ready market for bauxite of this area.

By Sudarshan Gurjar

Gujarat

- Gujarat is the second largest producer and produces over 15% of the total bauxite of India.
- The mainly found in Jamnagar, Junagadh, Kheda, Kutch, Sabarkantha, Amreli and Bhavnagar.
- The most important deposits occur in a belt lying between the Gulf og Kachcha and the Arabian sea through Bhavnagar, Junagadh and Amreli districts.

Gujarat


PAKISTAN
RAJASTHAN
Banaskantha
Patan
Sabarkantha
Mehsana
Aravalli
Gandhinagar
Mahisagar
Kutch
Morbi
Ahmedabad
Kheda
Dahod
Surendranagar
Panchmahal
Jamnagar
Anand
Devbhoomi Dwarka
Botad
Chhota Udaipur
MADHYA PRADESH
Vadodara
Rajkot
Narmada
Bharuch
Porbandar
Junagadh
Amreli
Bhavnagar
Surat
Tapi
Gir Somnath
Dang
Navsari
DIU
DAMAN
Valsad
By Sudarshan Gurjar
MAHARASHTRA
DADRA AND NAGAR HAVELI

Jharkhand

- These reserves are found in extensive areas of Ranchi, Lohardaga, Palamu and Gumla districts.
- Some bauxite is also found in Dumka and Munger districts.

JHARKHAND

By Sudarshan Gurjar

Maharashtra

- Maharashtra accounts for about 10% of the total bauxite produced in India.
- The largest deposits occur in Kolhapur district capping the plateau basalts.
- Udgeri, Dhangarwadi, Radhanagari and Inderganj in Kolhapur district contain rich deposits with alumina content 52% to 89%.
- The other districts with considerable deposits are Thane, Ratnagiri, Satara and Pune.

MAHARASTRA MAP

By Sudarshan Gurjar

Chhattisgarh

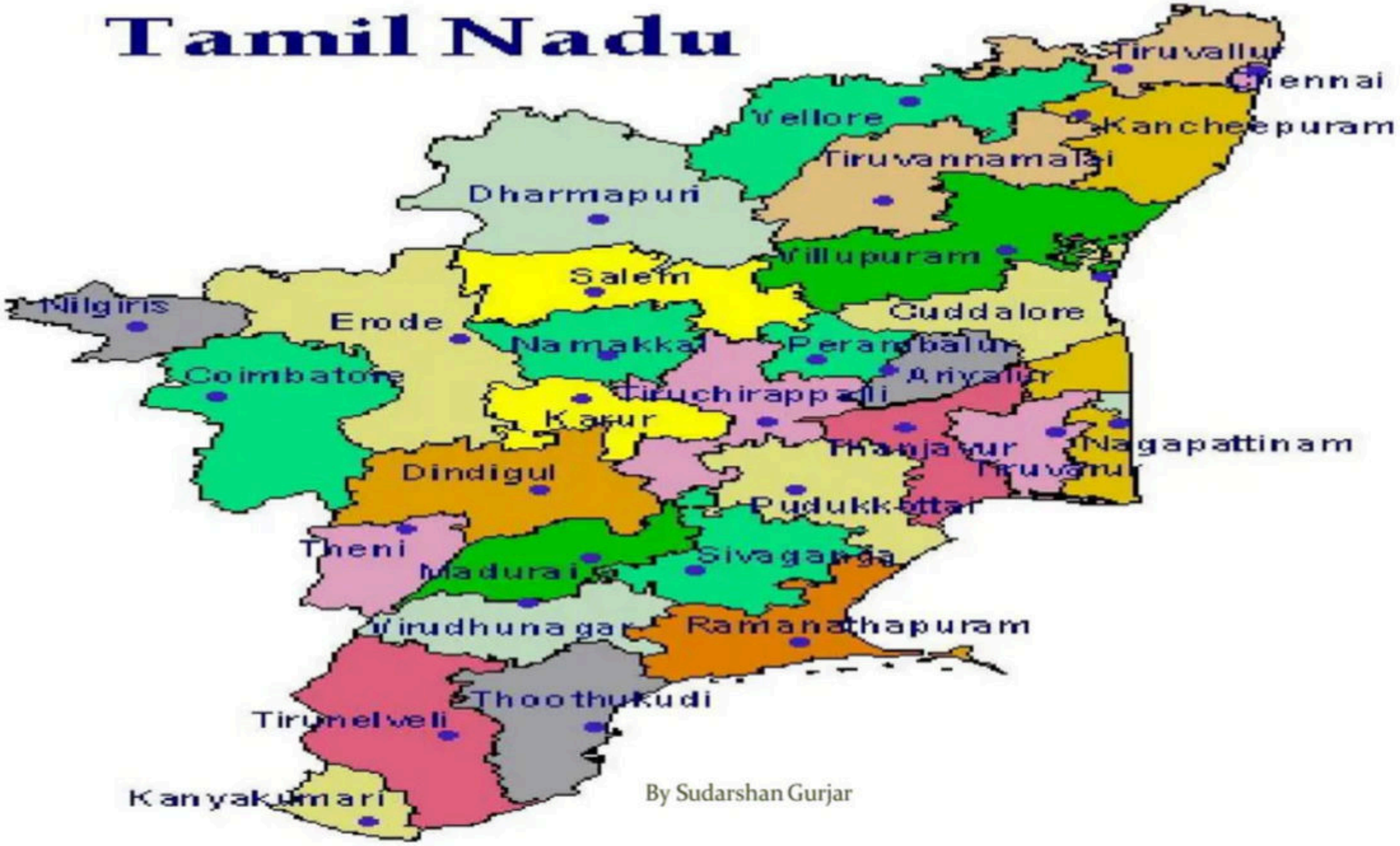
- Chhattisgarh produces more than 6% bauxite of India.
- The Maikala nrange in Bilaspur, Durg districts and the Amarkantak plateua region of Surguja, Raigarh and Bilaspur are some of the areas having rich deposits of bauxite.


Koriya
Surguja
Jashpur
Korba
Bilaspur
Raigarh
Kawardha
Janjgir
Raipur
Rajnand Gaon
Durg
Mahasamund
Dhamtari
Kanker
Bastar
Chhattisgarh
Dantevada
By Sudarshan Gurjar

Tamil Nadu

- Tamil Nadu mainly found in Nilgiri, Salem and Madurai districts.
- Nilgiri and Salem are the main bauxite producing districts enabling Tamilnadu to contribute slightly more than 2% of the India's bauxite

Tamil Nadu


Tiruvallur
Chennai
Vellore
Kancheepuram
Tiruvannamalai
Dharmapuri
Villupuram
Salem
Nilgiris
Erode
Cuddalore
Namakkal
Perambalur
Coimbatore
Ariyalur
Tiruchirappalli
Karur
Thanjavur
Nagapattinam
Tiruvarur
Dindigul
Pudukkottai
Theni
Sivaganga
Madurai
Virudhunagar
Ramanathapuram
Thoothukudi
Tirunelveli
Kanyakumari
By Sudarshan Gurjar

Madhya Pradesh

- Amarkantak plateau area, the Maikala range in Shahdol, Mandla and Balaghat districts and the katni area of Jabalpur district are he main producers.

MADHYA PRADESH

By Sudarshan Gurjar

Bauxite other Region

- Andhra Pradesh(Vishakhapatnam, East Godavari & West Godavari)
- Kerala(Kannur, Kollam & Thiruvanthapuram)
- Rajasthan(Kota)
- Uttar Pradesh(Banda, Lalitpur & Varanasi)
- Jammu & Kashmir(Jammu, Poonch, Udhampur)
- Goa.

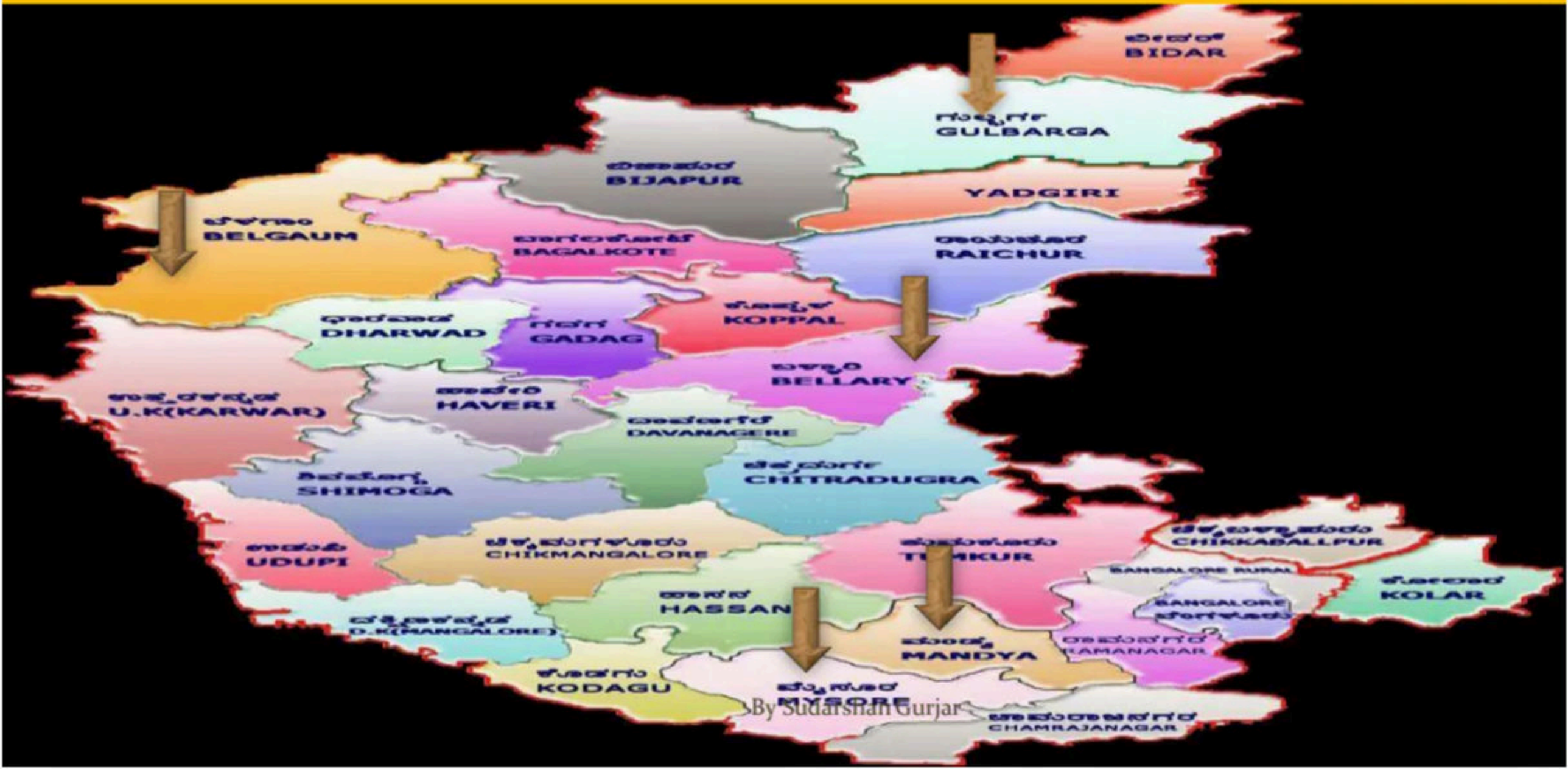
GOLD

- It is a valuable metal which occurs in auriferous lodes and some of it is found in sands of several rivers.
- It is used for making ornaments and is known as international currency due to its universal use.
- There are three gold fields in the country, namely
- i) Kolar Gold Field, Kolar district(Karnataka)(First Mining 1871)
- ii) Hutti Gold Field in Raichur district(Karnataka)
- iii) Ramgiri Gold Field in Anantpur district(Andhra Pradesh)

Karnataka

- Karnataka is the largest producer of gold in India.
- The gold mainly found in Kolar, Dharwad, Hassan and Raichur district.
- Some gold reserves are also reported in Gulbarga, Belgaum, Bellary, Mysore, Mandya, Chikmagalur and Shimoga districts.

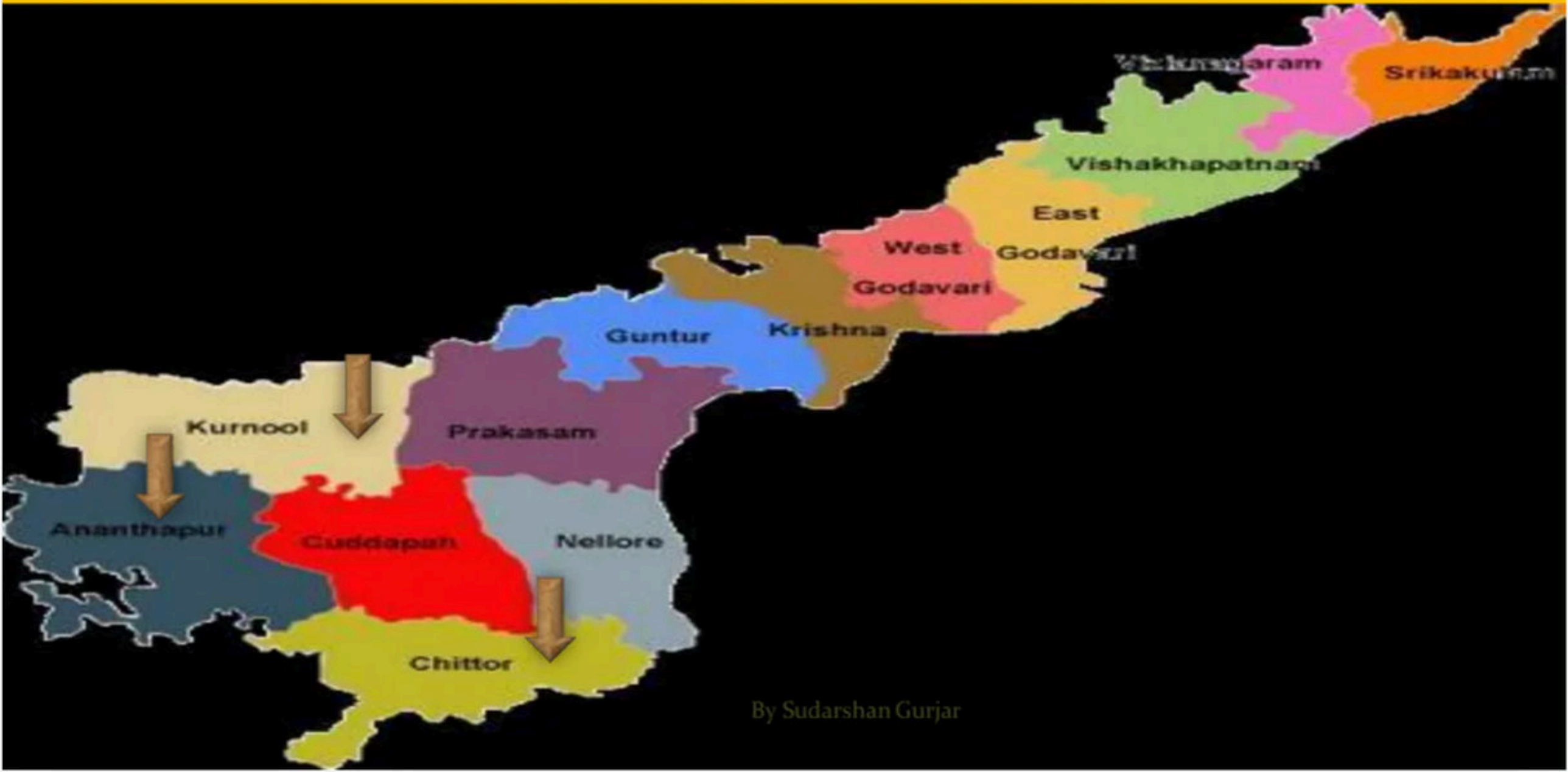
Karnataka


BIDAR
GULBARGA
BIJAPUR
YADGIRI
BELGAUM
BAGALKOTE
RAICHUR
KOPPAL
DHARWAD
GADAG
BELLARY
U.K(KARWAR)
HAVERI
DAVANAGERE
CHITRADUGRA
SHIMOGA
UDUPI
CHIKMANGALORE
CHIKKABALLPUR
BANGALORE RURAL
KOLAR
HASSAN
D.K(MANGALORE)
MANDYA
KODAGU
MYSORE
CHAMRAJANAGAR
By Sudarshan Gurjar

Andhra Pradesh

- Andhra Pradesh is the second largest producer of gold in India.
- The main deposits are found in Ramagiri in Anantapur distric.
- The other areas of gold deposits are bisanattam and Palachchur in Chittoor district and Junnagiri in Kurnool district.

Andhra Pradesh

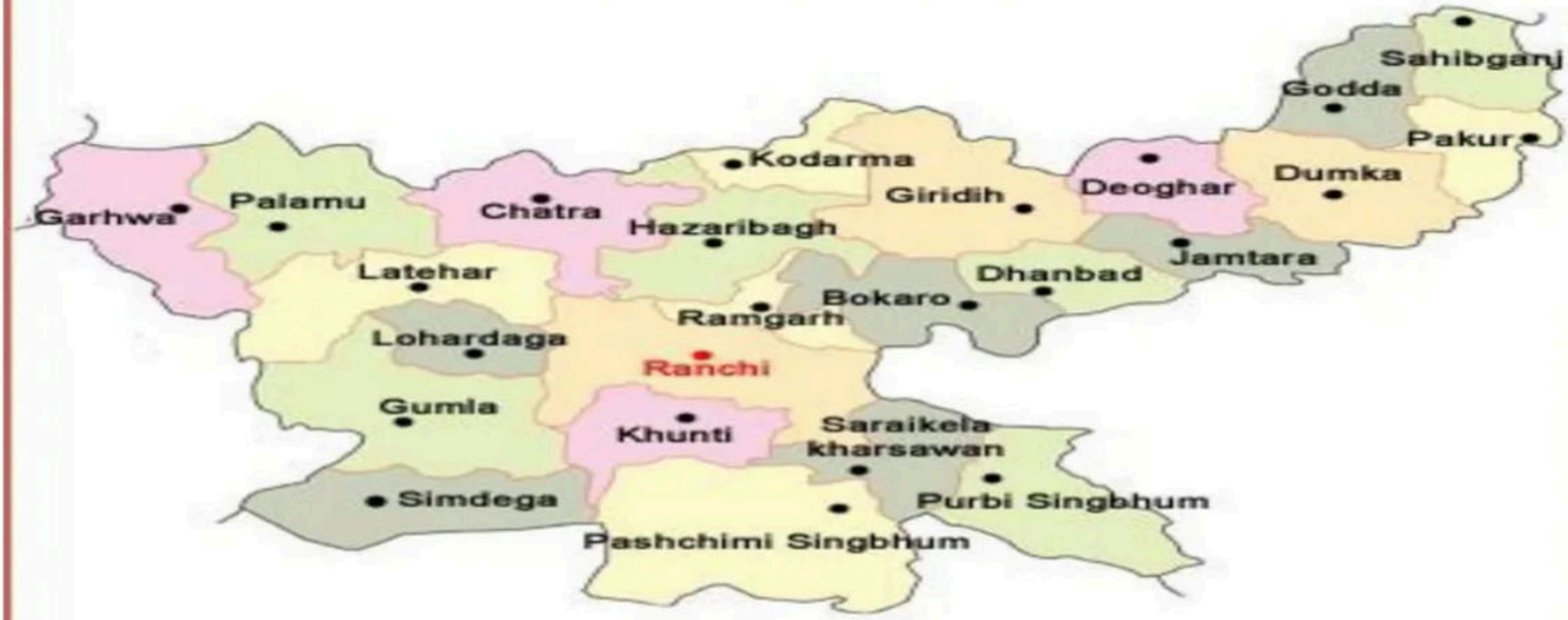


By Sudarshan Gurjar

Jharkhand

- Jharkhand is an important producer of gold in India.
- Jharkhand has both alluvial and native gold.
- Alluvial gold is obtained from the sands of the Subarnarekha river, Sona nadi in Singhbhum district and the steams draining the Sonapat vally.
- Native gold is found near Lowa in Singhbhum district and in some other parts of Chota Nagpur plateau

JHARKHAND



By Sudarshan Gurjar

Silver

- The major production comes from Zawar minesin Udaipur district of Rajasthan.
- Dhanbad district of Jharkhand is another important producer of silver as a by product of lead.
- Some silver is produced by Kolar Gold Fields and Hutti Gold mines in Karnataka during refining of gold.
- Silver is also produced by Vizag Zinc smelter in Andhra Pradesh from the lead concentrates.
- Traces of silver occur in Hazaribag, Palamu, Ranchi and Singhbhum district of jharkhand.

.

Silver

- Cuddapah, Guntur and Kurnool districts of Andhra Pradesh.
- Vadodara in Gujarat.
- Bellary district of Karnataka.
- Baramula district of Jammu & Kashmir
- Almora district of Uttarakhand.

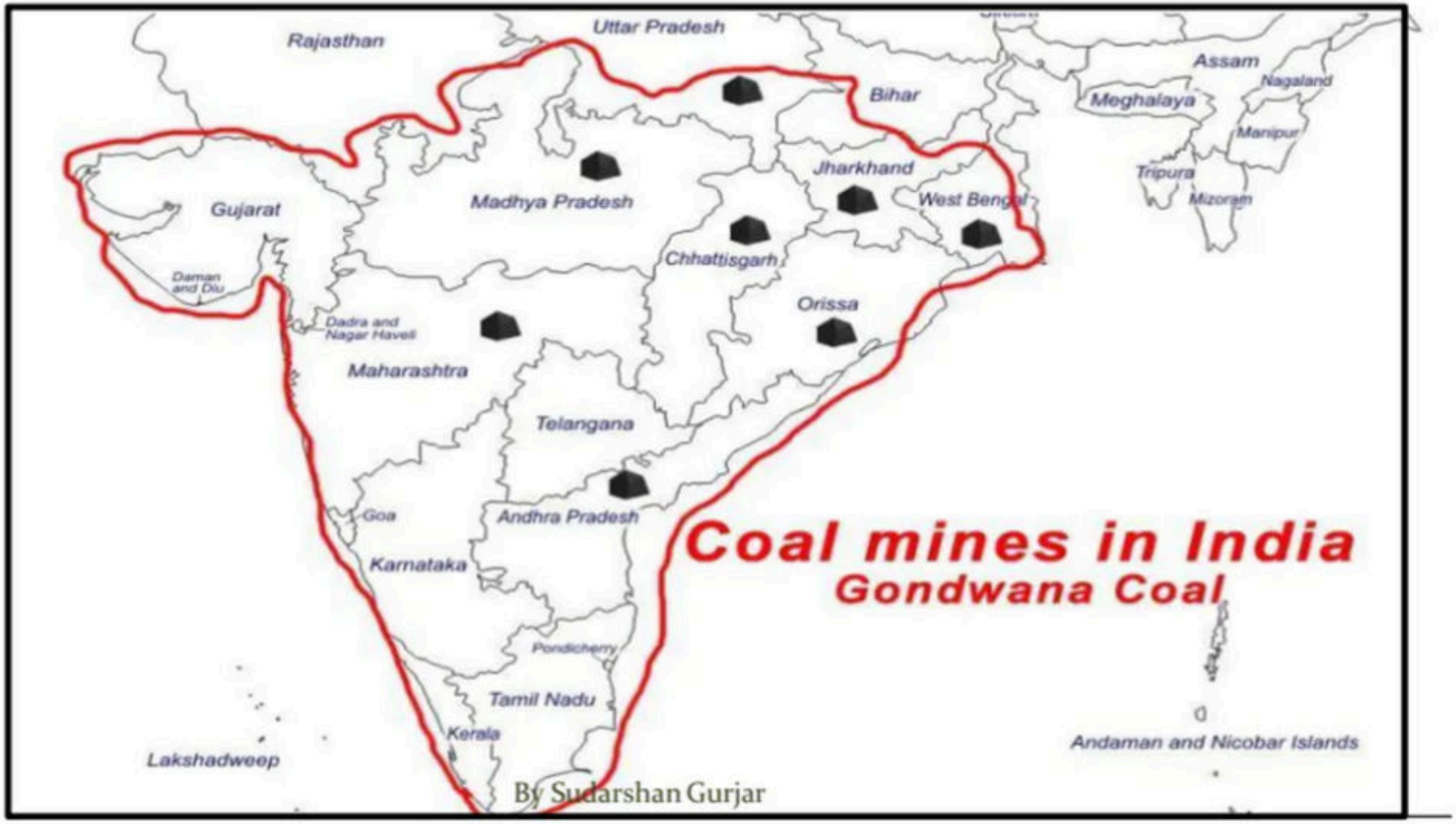
Important Coal Regions

(Gondwana Times)

By Sudarshan Gurjar

- **Coal mining in India** began in 1774
- John Sumner and Suetonius Grant Heatly of the East India Company commenced commercial exploitation in the Raniganj Coalfield along the Western bank of Damodar river.
    - **Anthracite coal - 80-90% carbon**
    - **Bituminous Coal 40-80%**
    - **Lignite -55%**
    - **Peat - less than 40%**

Gondwana coal fields [250 million years old]



Jharkhand

- Jharia coal field - SW of Dhanbaad
- Jayanti - Dhanbad
- Bokaro coal field Hazaribagh
- Girdih Coal fields also known as Karharbari.
- Karanpura & Ramgarh Coal Fields -West of Bokaro.
- Auranga Coal Fields - Palamu
- Hutar Coal Field Palamu
- Daltengunj Coal Fields
- Devgarh Coal Fields Dumka

By Sudarshan Gurjar


JHARKHAND
Sahibganj
Godda
SAHIBGANJ
GODDA
Pakur
PAKUR
Kodarma
KODARMA
GIRIDIH
Devghar
DEVGHAR
Dumka
GARHWA
Garhwa
Chatra
CHATRA
Hazaribag
Giridih
Daltenganj
PALAMU
HAZARIBAG
SANTHAL PARGANA
DHANBAD
Bokaro
Bokaro
Dhanbad
LOHARDAGA
Lohardaga
RANCHI
RANCHI
Gumla
GUMLA
Jamshedpur
Chaibasa
PURBA SINGHBHUM
PASCHIM SINGHBHUM
By Sudarshan Gurjar

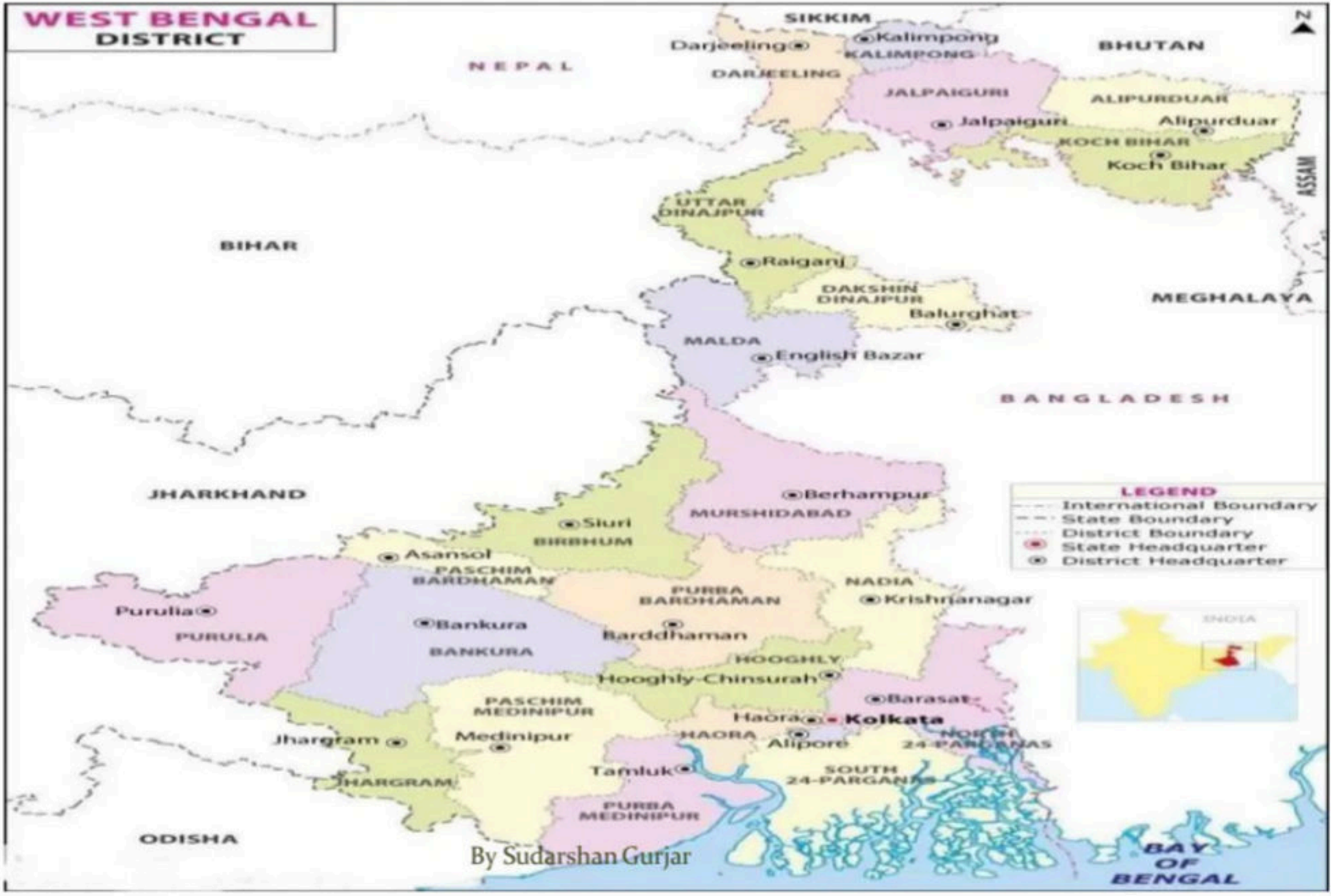
Madhya Pradesh

- Singrauli (Waidhian) coalfield Sidhi and Shandol districts
- Pench-Kanhan-Tawa Chhindwara district
- Sohagpur coalfield Shandol district
- Umaria coalfield


MORENA
BHIND
GWALIOR
SHEOPUR
DATIA
SHIVPURI
TIKAMGARH
CHHATARPUR
NEEMUCH
GUNA
ASHOKNAGAR
SATNA
REWA
PANNA
SIDHI
SINGROLI
MANDSAUR
RAJGARH
VIDISHA
SAGAR
DAMOH
KATNI
RATLAM
UJJAIN
SHAJAPUR
BHOPAL
RAISEN
UMARIA
SHAHDOL
JABALPUR
JHABUA
SEHORE
ANOOPPUR
NARSINGHPUR
INDORE
DEWAS
DHAR
HOSHANGABAD
DINDORI
MANDLA
ALIRAJPUR
HARDA
SEONI
CHHINDWARA
BARWANI
KHANDWA
BETUL
By Sudarshan Gurjar

West Bengal

- **Darjeeling** and **Jalpaiguri** are the chief producing districts.
- **RANIGANJ** is the largest coalfield of West Bengal.
- Raniganj Coal Fields Barddhaman, Bankura and Purulia districts


WEST BENGAL
DISTRICT
SIKKIM
Darjeeling
Kalimpong
KALIMPONG
DARJEELING
BHUTAN
NEPAL
JALPAIGURI
Jalpaiguri
ALIPURDUAR
Alipurduar
KOCH BIHAR
Koch Bihar
ASSAM
UTTAR DINAJPUR
BIHAR
Raiganj
DAKSHIN DINAJPUR
Balurghat
MEGHALAYA
MALDA
English Bazar
BANGLADESH
JHARKHAND
Berhampur
MURSHIDABAD
Siuri
BIRBHUM
Asansol
PASCHIM BARDHAMAN
PURBA BARDHAMAN
NADIA
Krishnanagar
Purulia
PURULIA
Bankura
BANKURA
Barddhaman
HOOGHLY
Hooghly-Chinsurah
Barasat
PASCHIM MEDINIPUR
Haora
Kolkata
HAORA
Alipore
NORTH 24-PARGANAS
Jhargram
Medinipur
JHARGRAM
Tamluk
SOUTH 24-PARGANAS
PURBA MEDINIPUR
ODISHA
BAY OF BENGAL
LEGEND
International Boundary
State Boundary
District Boundary
State Headquarter
District Headquarter
INDIA
By Sudarshan Gurjar

Odisha

- Talcher field Talcher in Angul ,Dhenkanal and Sambalpur districts

- Rampur-Himgir coalfields Sambalpur and Sundargarh
- Ib river coalfield Sambalpur and Jharsuguda district

ODISHA MAP

By Sudarshan Gurjar

Chhattisgarh

- Korba coalfield Korba district.
- Birampur coalfield Surguja district.
- Hasdo-Arand coalfield Surguja district
- Chirmiri coalfield Surguja district
- Lakhanpur coalfield Surguja district
- Jhilmili coalfield Koriya district
- Johilla coalfield Johilla valley
- Sonhat coalfield Surguja district
- Tatapani-Ramkota coalfields Surguja district


Chhattisgarh
KORIYA
SURAJPUR
BALRAMPUR
SURGUJA
JASHPUR
KORBA
MUNGELI
BILASPUR
RAIGARH
JANJGIR
CHAMPA
KABIRDHAM
BAMETARA
BALODA BAZAR
MAHASAMUND
RAJNANDGAON
DURG
RAIPUR
BALOD
DHAMTARI
GARIYABAND
KANKER
BASTAR
NARAYANPUR
KONDAGOAN
BIJAPUR
DANTEWADA
SUKMA
By Sudarshan Gurjar

- **Lignite in Tamil Nadu**

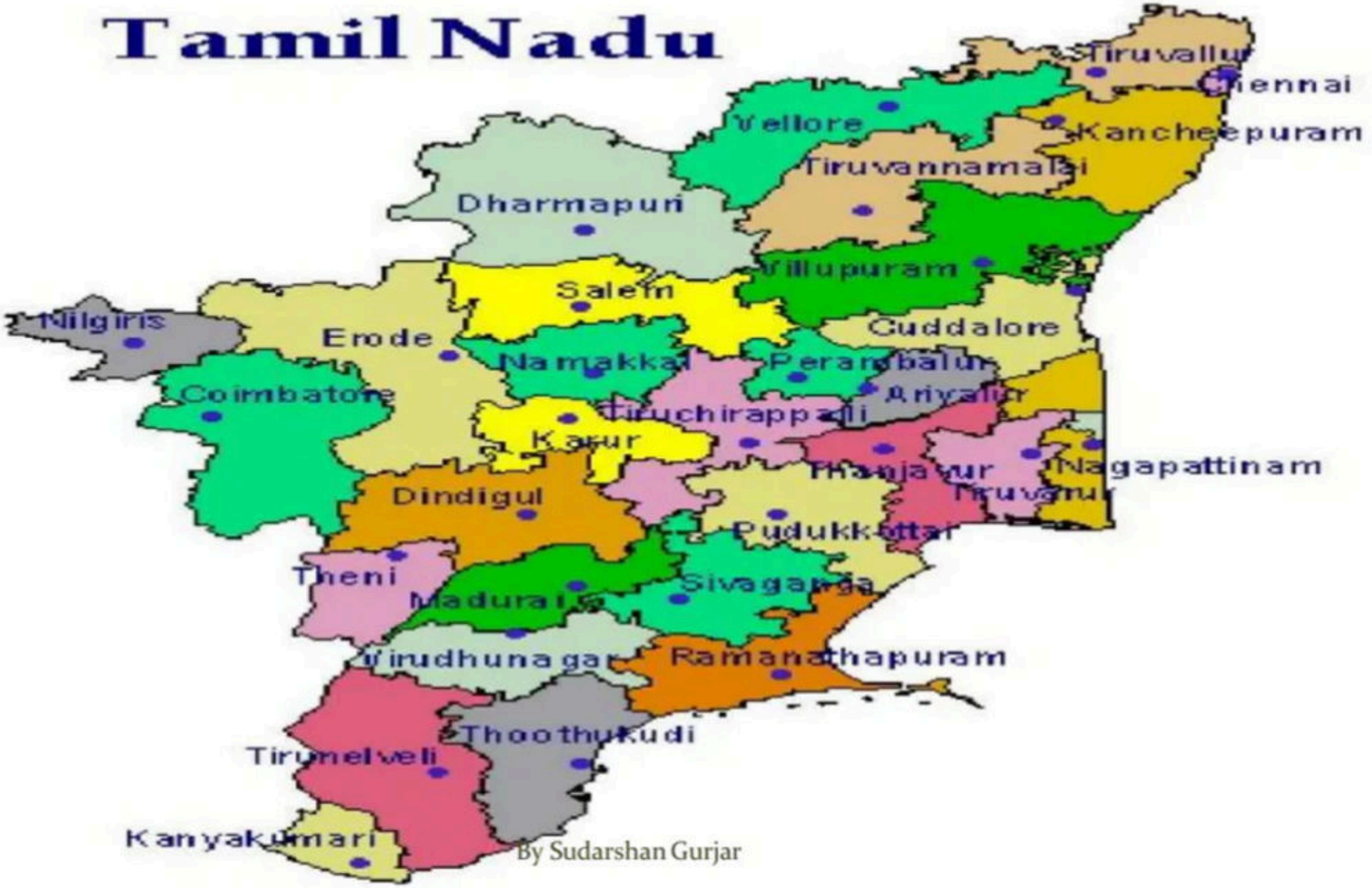
  90 per cent of the reserves.

  57 per cent of the production

  Neyveli Lignite fields of Cuddalore district.

  These are the largest deposits of lignite in south – east Asia

Tamil Nadu



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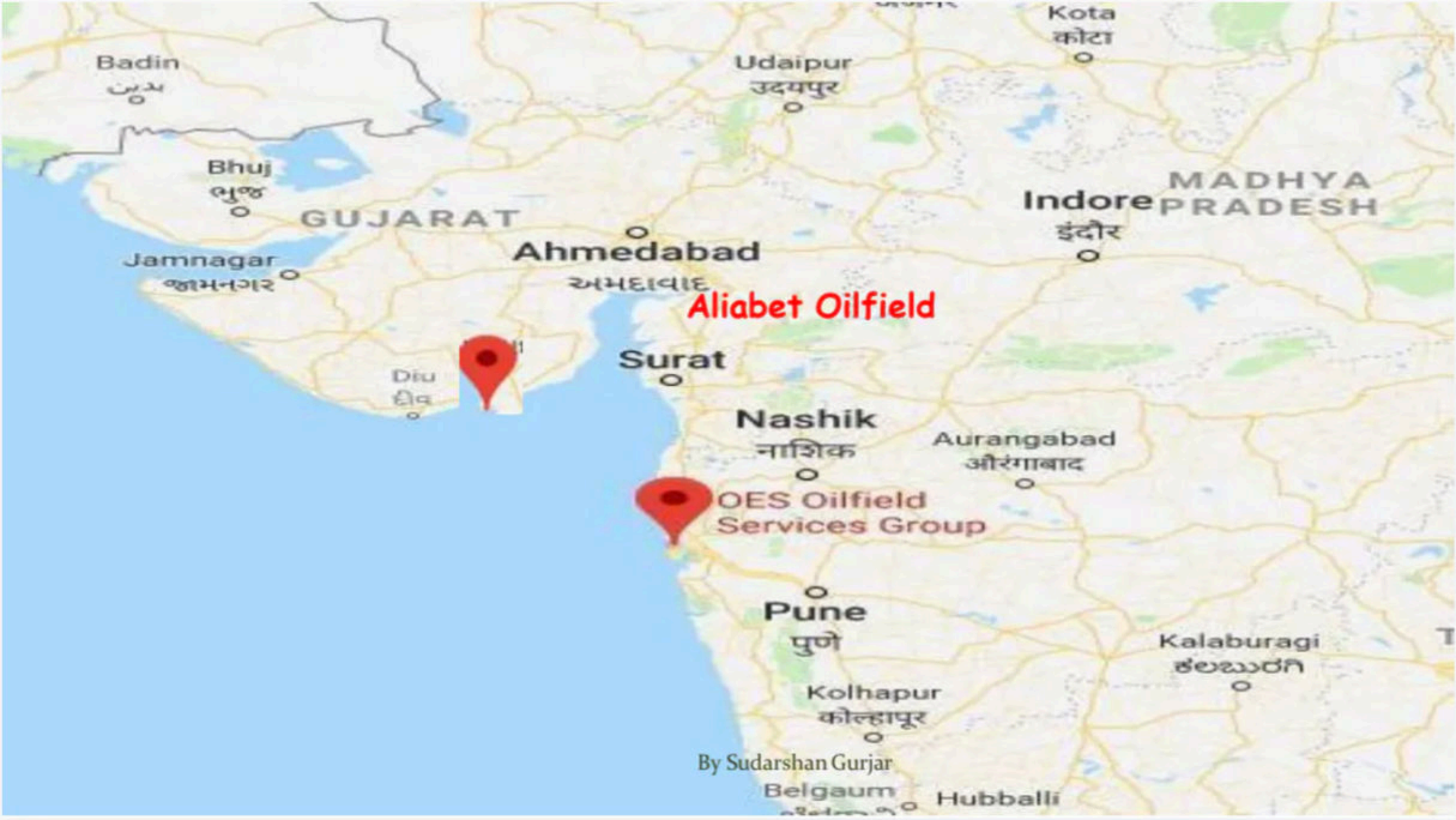
Crude Oil Producing Regions

1. The Western Coast Offshore Oilfields

- **i) The Bombay High Oilfields :-** This is the largest petroleum production oilfield contributing over 65% of the total production of crude oil.
- **ii) Bassein Oilfield :-** This oilfield lies to the south of Bombay High.
- **iii) Aliabet Oilfield :-** The Aliabet oilfield is located about 45km to the south of Bhavnagar.


Badin
Udaipur
उदयपुर
Kota
कोटा
Bhuj
भुज
GUJARAT
MADHYA
PRADESH
Indore
इंदौर
Ahmedabad
અમદાવાદ
Jamnagar
જામનગર
Aliabet Oilfield
Surat
Diu
Nashik
नाशिक
Aurangabad
औरंगाबाद
OES Oilfield
Services Group
Pune
पुणे
Kalaburagi
Kolhapur
कोल्हापूर
By Sudarshan Gurjar
Belgaum
Hubballi

- **2. The Gujarat Coast**
- **i) Ankleshwar:-** Situated in the district of Bharauch, it stretches over an area of about 30 sq km.
- **ii) Cambay- Luni Region:-** This oilfield lies about 60km to the west of Vadodara.
- **iii) The Ahmadabad Kalol Region:-** This crude oil region lies to the north of Gulf of Khambat(Cambay) around the city of Ahmadabad.


The Ahmedabad Kalol
Cambay Luni Region
Ankleshwar
Bhuj
ભુજ
GUJARAT
Rajkot
રાજકોટ
Jamnagar
જામનગર
Ahmedabad
Surat
Diu
Udaipur
MADHYA PRADESH
Indore
इंदौर
Nashik
नाशिक
Aurangabad
औरंगाबाद
Mumbai
मुंबई
MAHARASHTRA
Pune
पुणे
Kalaburagi
Kolhapur
कोल्हापूर
By Sudarshan Gurjar

- **3. The Brahmaputra Valley**
- **i) The Digboi Oilfield:-** Stretching over an area of about 15 sqkm.
- The Digboi oilfield is one of the oldest oil fileds of the country.
- **ii) The Naharkatiya Oilfield:-** This oilfield lies about 35km to the south west of Digboi.
- **4. The Eastern Coast Oilfield**
- Petroleum and natural gas have been discovered in marine delta regions of Mahanadi, Godavari, Krishna and Kaveri rivers.


拉萨市
ARUNACHAL
PRADESH
Digboi
Oilfield
Naharkatiya
Oilfield
Kathmandu
काठमाडौं
SIKKIM
Bhutan
Siliguri
Nalbari
ASSAM
Kishanganj
Guwahati
Patna
पटना
BIHAR
NAGALAND
MEGHALAYA
By Sudarshan Gurjar

India- Refineries & their Production Capacity

Refinery	State
Digboi, IOC	Assam
Trombay, HPCL	Maharashtra
Trombay, BPCL	Maharashtra
Vishakhapatnam, HPCL	Andhra Pradesh
Noonamati, IOC	Assam
Barauni, IOC	Bihar
Koyali, IOC	Gujarat
Pachpadra HPCL	Rajasthan

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Refinery	State
Kochi, CRL	Kerala
Chennai, MRL	Tamil Nadu
Haldia, IOC	West Bengal
Bongaigaon, BRPL	Assam
Mathura, IOC	Uttar Pradesh
Numaligarh, IOC	Assam
Jamnagar, RP	Gujarat
Karnal, IOC	Haryana
Mangalore, HPCL	Karnataka
Panagundi, IOC	Tamil Nadu

Atomic Power Stations of India

Power Stations	State
Tarapur(1969)	Maharashtra
Rawatbhata	kota, Rajasthan
Kalpakkam	Tamil Nanu
Narora	Uttar Pradesh
Kakrapara	Gujarat
Kaiga	Karnataka
Kudankulam	Tamil Nadu
Jaitapur	Maharashtra
Haripur	West Bengal

Power Stations	State
Bargi-Chutka	Madhya Pradesh
Kawada	Andhra Pradesh
Maithi-Verdi	Kathiawad(Gujarat)
Kumharia or Gorakhpur	Haryana

Iron & Steel Plants in India

- 1) The Tata Iron & Steel Company(Jamshedpur)
- 2) Barnpur Indian Iron & Steel Company(IISCO)
- 3) The Bhadravati Iron & Steel Plant(VISL)
- 4) Bhilai Iron & Steel Plant(HSL)
- 5) Raurkela Iron & Steel Plant(Hindustan Steel Limited)
- 6) Durgapur Iron & Steel Plant(HSL)
- 7) Bokaro, Bharat Steel Limited(BSL)
- 8) Salem Steel Plant
- 9) Vishakhapatnam Steel Plant

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1) The Tata Iron & Steel Company(Jamshedpur)

- TISCO plant is located at the confluence of Subernrekha & Kharkai rivers about 240 Km North-West of Kolkata in the Singhbhum district of Jharkhand.
- It was established in 1907 the production of pig Iron started here in 1908 and that of steel in 1911.
- The Jamshedpur Steel Plant has an ideal location at which the transportation cost is the least.
- It obtains the supply of iron ore from Badam Pahar(Mayurbhanj,Odisha), Noamundi(Singhbhum district of Jharkhand),

1) The Tata Iron & Steel Company(Jamshedpur)

- Coking coal from Jharia and Bokaro,
- Manganese from Keonjhar(Odisha),
- Limestone and fire clay from Sundargarh district(Jharkhand)
- Fresh water from the Subernrekha & Kharkai rivers.
- Being Situated in the tribal belt, cheap labour is also available and the finished products can be exported through the port of Kolkata.

- ## 2) Barnpur Indian Iron & Steel Company(IISCO)
- The Indian Iron & Steel Company founded in 1918 and the Steel Corporation of Bengal founded in 1927 were merged under the former name in 1952.
- It has three separate plants at Burnpur (about 5Km South-West of Asansol), Hirpur(about 6Km South of Asansol) and Kulti(about 16Km West of Asansol).
- The Management of these steel plants was taken over by the government in 1972.
- These steel plants obtain iron ore from their mines at Goa.
- Manganese is obtainted from Bihar, Jharkhand, MAdhya Pradesh and Odisha, fire clay from Singhbhum.

- **3) The Bhadravati Iron & Steel Plant(VISL)**
- The Visveswaraya Iron & Steel Limited at Bhadravati formerly known as Mysore Iron & Steel Limited was established in 1823.
- The plant was taken over by the Central Government in 1962.
- It obtains iron ore from Kudermukh, Baba Budan Hills(Chikmaglur district of Karnataka).
- Manganese, limestone, dolomite, and fire clay are also available within a distance of 50 Km.
- Electricity is available from the Jog and Shravati Power Projects.

- ## 4) Bhilai Iron & Steel Plant(HSL)
- The Bhilai Iron & Steel Plant was established with the technical co-operation of Russian Government (erstwhile SovietUnion) in the Durg district of Chhattisgarh in 1959.
- It obtains its ironore from the Dhalli-Rajhara mines about 95Km South of the plant, coal from Korba(Chhattisgarh), Bokaro & Jharia(Jharkhand) Manganese from BAlaghat & Bhandara, Limestone from Nandani mines only 18Km from Bhilai, Water from Tandula Canal & Reservoir, Electricity from the Korba Thermal Power Station.
- It is located in the tribal belt of Chhattisgarh, cheap labour is locally available.
- The finished products are exported through the port of Vishakhapatnam.
- Bhilai steel plant specialises in the production of pig iron, crude steel & plates for ship building industry.

- **5) Raurkela Iron & Steel Plant(Hindustan Steel Limited)**
- The Raurkela Iron & Steel Plant is located in the Sundargarh district of Odisha along the Kolkata-Nagpur railway line.
- It was built with the technical co-operation from the German firm, Krupps & Demang in 1959.
- The plant obtains its iron ore from MAyurbhanj, Coal from Bokaro, Jharia, Talcher & Korba, Manganese from Sundargarh, Water from the Sankha & Koel rivers(Tributaries of Brahmani) and hydro-power from the Hirakhund Dam.
- It specialise in the production of flat products.
- The main products of this steel plant are cold rolled sheet, hot rolled sheet, galvanised sheet and electrical steel plates.

6) Durgapur Iron & Steel Plant(HSL)

- The Durgapur Iron and Steel plants was established with the help of British companies in 1956, production stated in 1962.
- The city of Durgapur is located along the Damodar River.
- It obtain iron ore from Singhbhum(Jharkhand), and Kendujhar(Odisha), coal from Raniganj, Manganese from Balaghat(M.P.), Water from the Damodar river.
- It produces ingot steel.

7) Bokaro, Bharat Steel Limited(BSL)

- The Bokaro Steel Plant was located with the help of the Soviet collaboration in 1964.
- It obtains its iron ore from Keonjhar district, Coal from Bokaro, Jharia and Kargali coal mines, Lime from Daltonganj in Palamu district, Dolamite from Bilaspur district and Water from the Tenu Dam across the Damodar river.
- Bakaro is essentially a flat product plant and the hot and cold rolling mills are its main production units.
- Its sludge and slag are being used in making fertilisers at Sindri.

- ## 8) Salem Steel Plant
- This steel plant was commissioned in 1982.
- It obtains iron ore from the neighbouring areas, manganese, dolomiteand limestone are also available within a distance of 60Km.
- It produces iron and steel of special grade.

- **9) Vishakhapatnam Steel Plant**
- This steel plant is located near Hosepet in the Bellary district of Karnataka.
- It obtains iron ore from Hosepet, Coal from KAnhan valley(Chhattisgarh) & Singareni(Andhra Pradesh), Limestone & Dolomite are also available within a distance of 150Km, Water from the Tungbhadra Reservoir(about 35Km) and cheap hydel power from the Tungbhadra project.
- In this plant steel produced with the Corex process which makes use of non-coking coal.

- **Important Aluminum Plants**
- 1) The Indian Aluminium Company Ltd. (INDAL) Hirakud
- 2) The Aluminium Corporation of India, Jaykaynagar(near Asansol)
- 3) The Hindustan Aluminium Corporation Ltd. (HINDALCO), Renukoot
- 4) The Madras Aluminium Company Ltd. (MALCO), Mettur
- 5) The Bharat Aluminium Company Ltd. (BALCO), Korba
- 6) The National Aluminium Company Ltd. (NALCO), Koraput

- **1) The Indian Aluminium Company Ltd. (INDAL) Hirakud**
- This company started production in 1938 as a private company and was converted into public company in 1944.
- It is an integrated plant having three units at five different places for the production of alumina & aluminium sheets.
- the plant for the extraction of alumina from bauxite are located at Muri(Jharkhand), near the bauxite mines.
- Its three smelting units are located at Alupuram(Alwaye in Kerala), Hirakud (Odisha) and Belgaum(Karnataka).
- The rolling mill at Belur(West Bengal) Manufactures aluminium sheets, rod, aluminium paste, electrical condutors and domestic utensils.
- The plant gets bauxite from the Bagru Hills near Lohardaga, coal from Damodar valley and hydro- electricity from Hirakud.

- **2) The Aluminium Corporation of India, Jaykaynagar(near Asansol)**
- The production from this plant was started in 1942.
- The plant gets bauxite from Ranchi(Jharkhand) and Unchera (MP).
- It has its own coal mine , a thermal power plant and an alumina plant, areduction plant, a sheet rolling plant and a utensils producing plant.

- **3) The Hindustan Aluminium Corporation Ltd. (HINDALCO), Renukoot**
- This plant was set up at Renukoot, about 160Km south of MIezapur in 1958.
- It obtains bauxite from Lohardaga(Jharkhand & Amarkantak regiom of MP)and power from the Rihand Dam.
- Its installed capacity is 1.26 lakh tonnes of ingots per annum, manufacturing mainly aluminium sheets and wires.

- **4) The Madras Aluminium Company Ltd. (MALCO), Mettur**
- This company set up its plant at mettur near Salem in 1965.
- It obtains bauxite from the Shevaroy Hills and electricity from the Mettur hydel project.
- Its installed capacity is 25,000 tonnes of aluminium ingots.

5) The Bharat Aluminium Company Ltd. (BALCO), Korba

- This is a public sector company which set up its plant at Korba(Bilaspur district, Chhattisgarh) in 1965.
- It obtains bauxite from the Amarkantak(Shahdol district of MP) and electricity from the Korba Thermal Power Plant.
- The govt. has disinvested its share to a private company namely , Sterlite Industries, India(March 2001)

- **6) The National Aluminium Company Ltd. (NALCO), Koraput**
- Located at Koraput.
- It is the largest aluminium plant of the country.
- The company was incorporated in 1981.
- It obtains bauxite from the bauxite mines at Panchpatmali(district Koraput).
- There is an alumina refinery at Damonjodi(district Koraput) and alumina smelter at Angul.
- The Central Government has disinvested about 45% of NALCO's shares.