



Distribution of Coal & Petroleum in India

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Occurrence of Coal in India

The coal bearing strata of India are geologically classified into two main categories, viz.,: **Gondwana coal fields & Tertiary coal fields**

Gondwana Coal Fields:

- Gondwana coal comprises about 98 percent of the total reserves and 99 percent of the production of coal in India. In this system there are 113 major coal fields found all over India. Gondwana coal is said to be about 250 million years old.

Tertiary Coal Fields:

- The tertiary coal share only about 1% of the total production in India. coal is mainly confined to the extra- Peninsula. The tertiary rock systems bear coals of younger age; from 15 to 60 million years.
- **Lignite Coal Fields:** Tertiary coal is the lignite coal. Western and southern India. The coal is of inferior quality with around 30 to 50% carbon. India's largest ignite deposits are at Neyveli in Tamil Nadu.

DISTRIBUTION AND PRODUCTION OF GONDWANA COAL

1. Chhattisgarh:

- This state has 16 percent of the coal reserves and produces over 21 percent coal of India. Most of the coal fields of Chhattisgarh are located in the northern part of the state.
- Other coal field include: The Korba, Birampur, Hasdo-Arand, Chirmir, Lakhanpur, Jhilmil, Johilla, Sonhat, Tatapani-Ramkota, Tatapani coalfield.

2. Jharkhand:

- Jharkhand has over 28 percent of the coal reserves and produces more than 20 percent coal of India. There are 21 prominent coal fields in Jharkhand of which 8 are in Dumka (Santhal Parganas), 7 in Hazaribagh and 3 each in Dhanbad and Palamu.
- Amongst these, Jharia, Bokaro, Girdih and Karanpura are outstanding.
- Other Coalfields include The Karanpura and Ramgarh, Auranga, Hutar, The Deltenganj, Devgarh, Jayanti and Rajmahal coalfields.

DISTRIBUTION AND PRODUCTION OF GONDWANA COAL

3. Odisha:

- Odisha is the second largest state with regard to coal reserves possessing 24.64 percent of the total reserves of India but is the third largest producer of coal contributing about 19 percent of the total coal production of the country.
- Most of the deposits are found in Dhenkanalin Sambalpur and Sundargarh districts.
- The Talcher field ranks second in reserves (24,374 million tonnes) after Raniganj.
- The Rampur-Himgir coalfields is another important coalfield in the districts of Sambalpur and Sundargarh

DISTRIBUTION AND PRODUCTION OF GONDWANA COAL

➤ 4. Madhya Pradesh:

- Madhya Pradesh has about 7.77 percent of the coal reserves but contributes about 13.27 percent of the total coal production of India. Currently Madhya Pradesh is the fourth largest coal producing state of India.
- Singrauli (Waidhian) coalfield in Sidhi and Shahdol districts is the largest coalfield of Madhya Pradesh. Jhingurda, Panipahari, Khadia, Purewa and Turra are important coal seams. Jhingurda with a total thickness of 131 m is the richest coal seam of the country.
- Other coalfield include PENCH-KANHAN-TAWA, SOHAGPUR, UMARIA coalfield.

DISTRIBUTION AND PRODUCTION OF GONDWANA COAL

5. Andhra Pradesh and Telangana:

- With only 7.07 percent of the reserves Andhra Pradesh and Telangana produce about 9.69 percent of India's coal. Most of the coal reserves are in the Godavari in districts of Adilabad, Karimnagar, Warangal Khammam, East Godavari, and west Godavari,

6. Maharashtra:

- Though Maharashtra has only 3 percent reserves, the state accounts for over 7 percent of the production of coal in India. Most of the coal deposits are found in the Kamptee coalfields in Nagpur District; Wardha valley, Ghughus. Ballarpur and Warora in Chandrapur district and the Wun field in Yavatmal district. Coal has also been located in Umrer, Nand, Makardhokra and Bokhara areas.

DISTRIBUTION AND PRODUCTION OF GONDWANA COAL

7. West Bengal:

➤ Although West Bengal produces just over 4 percent of India's coal, the state has over 11 percent of the coal reserves of the country. Bardhaman, Bankura, Purulia, Birbhum, Darjeeling and Jalpaiguri are the chief producing districts. Raniganj is the largest coalfield of West Bengal. In fact, it is at Raniganj that coal-mining started in India in 1,774. In Darjeeling district, coal reserves are found in Dalingkot coalfield. In Jalpaiguri district, a few seams are located near the Duars area.

8. Uttar Pradesh:

➤ Most parts of Uttar Pradesh are covered with sediment brought by rivers and do not possess coal reserves. But some of the coal seam of Madhya Pradesh project into the territory of the state. A small portion of the Singrauli field Madhya Pradesh falls within Mirzapur district of Uttar Pradesh. A high grade coal seam, about 1 to 1.5 m thick occurs near Kotah.

DISTRIBUTION AND PRODUCTION OF TERTIARY

Tertiary coal-fields mainly occur in association with limestone and slates of either Eocene or oligocene-Miocene age. The statewise distribution of tertiary coal is as follows:

1. Assam:

- The major coalfields in Assam are the Makum, Nazira, Mikir Hills, Dilli-Jeypore and Lakhuni. The total reserves of all types of coal in this field are estimated to be 235.6 million tonnes, down to a depth of 600 m.

2. Meghalaya:

- Garo, Khasi and Jaintia hills are believed to have deposits of tertiary coal belonging to lower Eocene. The total reserves of all types of coal in Meghalaya are estimated to be 459 million tonnes. The Garo hills have important coalfields near Darrangiri. In the Khasi and Jaintia hills, Siju, Cherrapunji, Liotryngew, Maolong and Langrin coalfields are important.

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3. Arunachal Pradesh: The Upper Assam Coal belt extends eastwards as Namchick-Namrup coalfield in the Tirap district of Arunachal Pradesh. The seams of this coalfield are 4 to 19 metre thick. The coal is generally high in volatiles and in sulphur.

➤ The other tertiary coalfields include the Kalakot, Jangali, Chinkah, Metka, Maholgala and Ladde areas of Jammu and Kashmir and the Chamba district of Himachal Pradesh.

DISTRIBUTION AND PRODUCTION OF LIGNITE COAL

- That there has been a phenomenal increase in the production of lignite in India. Although lignite deposits are found in Tamil Nadu, Gujarat, Jammu and Kashmir, Kerala, Rajasthan, West Bengal and
- Pondicherry; Tamil Nadu excels all other states regarding reserves and production of lignite.

1. Tamil Nadu:

- Tamil Nadu accounts for 90 percent of the reserves and about 57 percent of the production of lignite in India.
- The Neyveli Lignite fields of Cuddalore district, are the largest deposits of lignite in south-east Asia. Geological reserves of about 1,168 million tonnes of lignite have been identified in Jayamkondacholapuram of Trichy district of Tamil Nadu.

DISTRIBUTION AND PRODUCTION OF LIGNITE COAL

2. Gujarat:

Lignite occurs in Kachchh district at Umarsar, Lefsi, Jhalrai and Baranda and also in Bharuch district.

In 2011-12 Gujarat produced over 14.7 million tonnes of lignite which amounted to over 34 percent of the total lignite production of India.

3. Rajasthan:

Lignite deposits occur at Palana in Bikaner and Barmer district. In 2011-12, Rajasthan produced 3,544 thousand tonnes of lignite which amounted to 8.26 percent of total lignite produced in the country in that year.

4. Jammu and Kashmir:

Lignite deposits belonging to Pliocene or even a newer age have been found here in sufficient quantity. The main lignite fields occur in the Shaliganga river.

DISTRIBUTION AND PRODUCTION OF LIGNITE COAL

5. Kerala:

Irregular seams of lignite occur in Alappuzha, Thiruvananthapuram and Kollam district.

6. West Bengal:

Good quality lignite is reported to occur on the western side of the Jainti river and in Buza hills north-west of Jainti. Darjeeling and Jalpaiguri districts have small pockets of lignite. Beds of lignite also occur in the Ganga delta.

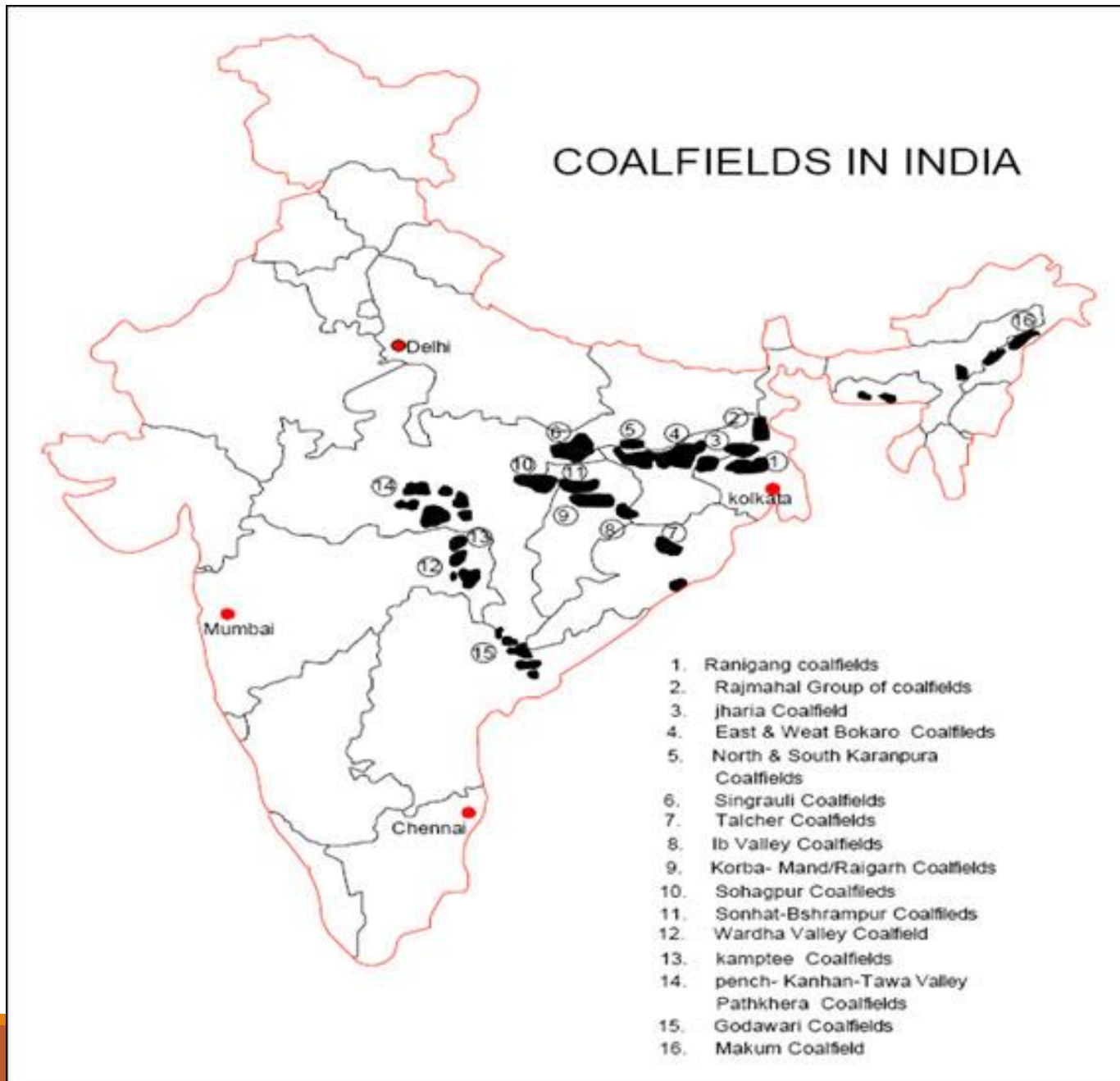
7. Puducherry:

The total reserves of lignite in Puducherry are estimated at 250 million tonnes. The main deposits are reported from near Bahur, Araganur, Kanniyankovil, Pudukaddai and Vadapuram.

Distribution of Coal in India



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Coalfields	Locations	
	State	Area
Tertiary Coalfields	Meghalaya	Cherrapunji, Mawlong and Shillong
	Assam	Mikir Hills
	Arunachal Pradesh	Namchik and Namphuk fields
	Nagaland	
Gondwana Coalfields	West Bengal - Jharkhand	Raniganj, Jharia, Bokaro and Karanpur coalfields of Damodar valley
	River valleys in south India	Mahanadi valley, Son Valley, Godavari valley and Wardah Valley

a) Lower Gondwana Coalfields in India:

State	Sub division	Coalfields
West Bengal		Raniganj (Trans Barakar), Bankura
	Darjeeling District	Bagrakote, Tindharia
Bihar		Raniganj (Cis Barakar), Jharia, Bokaro, Chandrapura, South Karampura, , Ramgarh
	Rajmahal Area	Hura, Gilhuria and Jilbari, Chuparbhitia, Pachwara, Brahmini
	Deogarh Area	Kundit Kuria, Sahajuri, Jainti
	Hazaribagh District	Giridhi, Chope, Itkhori.
	Palamu Region	Anuranga, Daltongunj, Hutar
Madhya Pradesh	South Rawa Region	Singrauli, Korar, Johilla river, Umaria, Sohagpur
	North Chattisgarh Region	Jhilmili, Tatapani-Ramkola, Sanhat, Jharkhand, Chirimiri-Kurasia, Koreagarh, Bassar, Bisrampur, Lakhanpur, Panchbhaini, Dambhamunda, Sendargarh
	South Chattisgarh Region	Hasdo -, Korba, Raigarh, , Kankani.
	Satpura Region	MOhpani, Sonada, Sahrpur (Tawa), Dulhara (Tawa), Pathakera, Bamhanwara, , , .
Maharashtra	Mahanadi Valley	Kamptee, Bandar, Warora, Rajur (Wun), Ghugus – Telwasa, Chanda, Ballarpur, Wamanapalli, Antargaon – Aksapur, Sasti – Rajpura.
Orissa		Talcher, Ib river (– Hingir).
Andhra Pradesh	Pranhita –Godavari Valley	Tandur Kanala, North Godavari, South Godavari, Jangam, Chinur-Sendrapalli, Kamavaram, Bandala – Alapalli, Singareni (yellendu), Lingala, Kothagudium, Damar-cherla, Kannergiri, Beddadanuru.
Uttar Pradesh		(in Mirzapur District)
Assam		Abor, Aka and Daphla Hills
Sikkim		Ranjit Valley

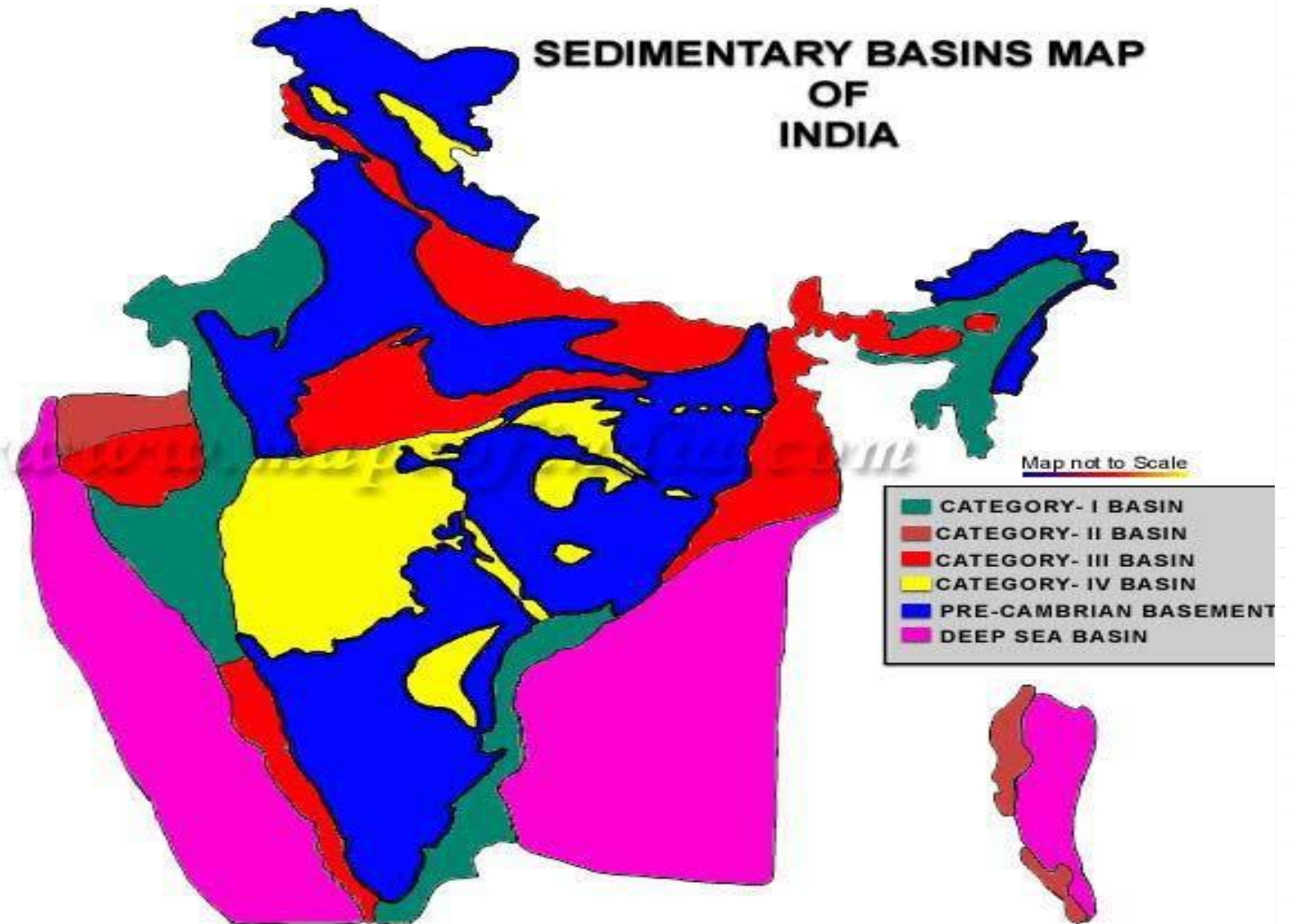
b) Upper Gondwana Coalfields in India:

State	Sub Division	Coalfields
Gujrat		Ghunker
Madhapradesh	Satpura Region	Hard River Valley
Maharastra		Kota, Chikiyala

C) Tertiary Coalfields in India:

State	Sub Division	Coalfields
		Namphuk, Namchik, Makum, Jaipur, Nazira, Janji, Disai
	Mikir Hills	Longloi Hills, , , Koilapahar
Assam	Khasi and Jaintia Hills	Langrin, Barsoura, Wah, , Lakma, Umasur, Charigaon, Cherrapunji, Um Rileng, Mawlong, Mawbehlarkar, Rangsonoba, Lairango, Jarain, Lakadong, Satunga
	Garo Hills	Karaibari, Rongreggiri, Daranggiri, Tura, Sogring, Waimong
Jammu and Kashmir		Kalakoath, Methka, Mahogala, Chakar, Dhanswal-Sawalkot, Ladda, Chinkah, lignites
Rajasthan		Palana (in Bikanir)
Chennai		Neyveli (South Arkot), Cuddalore – Area
Kerala		Varkala, Quilon
Gujrat		Umarsar (in)

SEDIMENTARY BASINS MAP OF INDIA



On-shore Oil Production In India

- **Brahmaputra valley of north-east India.**
- **Barmer area of Rajasthan.**
- **Gujarat coast in western India.**
- **Cauvery on-shore basin in Tamil Nadu.**
- **Andhra Pradesh has both on-shore and offshore oil reserves.**

On-shore Oil Production In India

Assam Oilfields

- Oldest oil producing state in India
- The main oil bearing strata extend for a distance of 320 km in upper Assam along the Brahmaputra valley.
- Oilfields of Assam are relatively **inaccessible** and are **distantly located** from the main consuming areas.
- Oil from Assam is therefore, refined mostly in the refineries located at **Digboi, Guwahati, Bongaigaon, Barauni** and

The Digboi field	Tipam hills, Dibrugarh district	Oldest oil field of India
The Naharkatiya field	Left bank of Burhi Dihing river	32 km southwest of Digboi Oil from this area is sent to oil refineries at Noonamati in Assam (443 km) and Barauni in Bihar (724 km) through pipeline.
The Moran-Hugrijan field	40 km south-west of Naharkatiya	

On-shore Oil Production In India

Gujarat Oilfields

- Ankleshwar, Khambhat or Lunej, Ahmedabad and Kalol, Nawgam, Kosamba, Kathana, Barkol, Mahesana and Sanand are important oilfields of this region.
- Ankleshwar: Oil from this field is sent to refineries at Trombay and Koyali.

Rajasthan Oilfields

- One of the largest inland oil discoveries was made in Banner district of Rajasthan.
- Other important discoveries == Mangala oil field, Sarswati and Rajeshwari.
- Rajasthan is the largest on shore oil producing state of India.

Off-Shore Production in India

Western Coast

- **Mumbai High, Bassein** and **Aliabet**.
- Mumbai High: 1974; rock strata of Miocene age.
- Sagar Samrat, Bassein: south of Mumbai High.
- Aliabet: Aliabet island in the Gulf of Khambhat.

Eastern Coast

- The basin and delta regions of the **Godawari, the Krishna and the Cauvery** rivers hold great potential for oil and gas production.
- The **Rawa field** in Krishna-Godawari off-shore basin is an important one.
- The Narimanam and Kovilappal oilfields in the Cauvery on-shore basin are also important.

Any Questions??

Thank You !!!

