



## Mining in Aravalli Range

**For Prelims:** [Aravalli ecosystems](#), [Forest Survey of India \(FSI\)](#), [Great Indian Bustard](#), [Supreme Court](#), [Thar desert](#)

**For Mains:** Key facts about the Aravalli Range, Key concerns related to the mining in the Aravalli Range

**Source:** IE

### Why in News?

Recently, the [Supreme Court](#) has stopped the issuance of new mining licenses and renewals for existing ones in the [Aravalli ranges](#) and hills based on a report by the [Forest Survey of India \(FSI\)](#).

- **Haryana's revenue** from legal mining has **significantly increased** in the past decade (Rs 5.15 crore in 2013-14 to Rs 363.5 crore in 2023-24).

### What are the Key Facts About the Aravalli Range?

- **About:**
  - The Aravallis are **one of the oldest fold residual mountains of the world** comprised primarily of **folded rock strata**. This formation resulted from the convergence of tectonic plates during the **Proterozoic Era (2500-541 million years ago)**
  - The Forest Survey of India (FSI) report, **defined the Aravallis** to include the **hills and a uniform 100-meter-wide buffer zone** around the downsides of the hills.
  - They have an **elevation of 300m to 900m**. The mountains are divided into two main ranges - the **Sambhar Sirohi Range** and the **Sambhar Khetri Range** in Rajasthan.
  - **Guru Shikhar Peak on Mount Abu** is the **highest peak** in the [Aravalli Range](#) (1,722 m).
  - Major [tribal communities](#) include the **Bhil, Bhil-Meena, Meena, Garasia**, and others.
  - The **Supreme Court in 2009** ordered a **complete ban on mining** in the Aravalli hills of Faridabad, Gurgaon, and Nuh districts of Haryana.
- **Significance:**
  - **Rich in Biodiversity:**
    - It provides **habitat to 300 native plant species, 120 bird species** and many exclusive animals like the jackal and mongoose.
  - **Checks Desertification:**
    - The Aravallis act as a **barrier between the fertile plains** in the east and the [Thar desert](#) in the west.
    - The **excessive mining** in the Aravalli Range is linked to the spread of the Thar Desert.
      - The **presence of loess**, a desert windblown sediment, **found in Mathura and Agra** suggests that the **desert is expanding** due to the weakened ecological barrier created by the degraded Aravalli Hills.
  - **Impacts Climate:**

- The Aravalli Range plays a significant role in shaping the **climate of northwest India**. During the monsoon season, these **mountains** act as a **climatic barrier**, guiding **moisture-laden southwesterly winds** towards Shimla and Nainital.
  - This, in turn, helps **nourish the sub-Himalayan rivers** and contributes to the rainfall that replenish the vast north Indian plains.
- In the **winter months**, it **protects the fertile [alluvial river valleys](#)** from the cold westerly winds from Central Asia.

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## What are the Key Concerns Related to the Mining in the Aravalli Range?

- **Habitat Destruction and Biodiversity Loss:**
  - **Mining activities** break and destroy [Aravalli ecosystems](#), **displacing wildlife** like leopards, hyenas, and various bird species.
  - This **disrupts food chains** and **ecological balance**.
  - Mining in **Rajasthan's ecologically sensitive areas** has threatened the habitat of the [Great Indian Bustard](#), a **critically endangered** bird species.
- **Water Scarcity and Air Pollution:**
  - The Aravallis acts as a natural [water reservoir](#). Mining **disrupts natural water** flow and table recharge, leading to **water scarcity downstream**, impacting agriculture and human settlements.
  - A 2018 research paper noted a decline in spring recharge due to mining in Haryana.
  - Mining activities **generate dust** and **release harmful pollutants** like silica, affecting air quality and causing respiratory problems in nearby communities.
- **Land Degradation and Desertification:**
  - Mining **removes vegetation cover**, exposing the soil to erosion.
  - Wind and rain wash away fertile topsoil, leading to desertification.
  - A study by the **Centre for Science and Environment (CSE)** revealed a 37% decline in forest cover in the Aravalli region of Haryana between 2001 and 2016, likely linked to [mining activities](#).

## Way Forward

- Implementing **stricter regulations** and enforcing them effectively can help minimise environmental damage.
  - The [National Clean Air Programme \(NCAP\)](#) promotes stricter regulations on dust emissions from industries.

- This can be applied to mining operations as well, requiring them to **implement dust suppression techniques like water sprays and covering stockpiles.**
- Innovative solutions like **green walls and green muffler** can be utilised to reduce the environmental impacts due to mining in surrounding areas.
  - **Green walls** are **vertical structures** that have different types of plants or other greenery attached to them. These can help in isolating the desertified land areas.
  - **Green muffler** is a measure adopted to **control noise pollution**, by planting green plants.
- Mined areas should be properly reclaimed and restored to **minimise long-term ecological damage.**
- Adopting **eco-friendly mining techniques** and technologies can reduce the environmental footprint of mining activities.
  - Eco-friendly techniques like **M-sand** can be used to reduce the environmental degradation associated with mining.
- The government should **support communities dependent on mining** by creating alternative **livelihood opportunities** in sustainable sectors.

## Conclusion

The Aravalli Range is a critical ecological zone that needs comprehensive protection. Balancing economic development with environmental sustainability requires a multi-pronged approach involving stricter regulations, responsible mining practices, and exploring alternative sources of income for affected communities.

### **Drishti Mains Question:**

Q. Mention key facts about the Aravalli Range. Discuss the key concerns related to the mining in the Aravalli Range.

## UPSC Civil Services Examination, Previous Year Questions (PYQs)

### **Prelims:**

**Q. With reference to the management of minor minerals in India, consider the following statements: (2019)**

1. Sand is a 'minor mineral' according to the prevailing law in the country
2. State Governments have the power to grant mining leases of minor minerals, but the powers regarding the formation of rules related to the grant of minor minerals lie with the Central Government.
3. State Governments have the power to frame rules to prevent illegal mining of minor minerals.

**Which of the statements given above is/are correct?**

- (a) 1 and 3 only
- (b) 2 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

**Ans: (a)**

**Q. What is/are the purpose/purposes of 'District Mineral Foundations' in India? (2016)**

1. Promoting mineral exploration activities in mineral-rich districts
2. Protecting the interests of the persons affected by mining operations

3. Authorizing State Governments to issue licences for mineral exploration

**Select the correct answer using the code given below:**

**(a)** 1 and 2 only

**(b)** 2 only

**(c)** 1 and 3 only

**(d)** 1, 2 and 3

**Ans: (b)**

**Mains:**

**Q.** Despite India being one of the countries of Gondwanaland, its mining industry contributes much less to its Gross Domestic Product (GDP) in percentage. Discuss. **(2021)**

PDF Reference URL: <https://www.drishtiias.com/printpdf/mining-in-aravalli-range>

