Aravalli's - The New Definition and Conservation

Mains: GS I – Geography/ GS III – Environment

Why in News?

Recently, The Supreme Court (SC), in an order last month, settled on a uniform definition of the Aravalli hills and ranges, and paused the grant of fresh mining leases inside its areas spanning Delhi, Haryana, Rajasthan and Gujarat.

What are the significances of Aravalli's?

- **Ancient & Oldest –** It's one of the world's oldest fold mountain ranges, with origins in the Proterozoic era (over 2 billion years old).
- **Location –** Extends approximately 650 km from Delhi through Haryana, Rajasthan, to Gujarat.
- **Highest Peak –** Guru Shikhar on Mount Abu (1,722 m).
- **Climate Regulator –** Acts as a natural barrier, preventing the Thar Desert from encroaching on fertile plains and guiding monsoon clouds eastward.
- **Biodiversity Hotspot –** Rich in flora and fauna, with sanctuaries like Sariska & Ranthambore, supporting significant NCR biodiversity.
- **Mineral Wealth –** It is richly endowed with sandstone, limestone, marble, granite, and minerals such as lead, zinc, copper, gold, and tungsten.
- While historically mined for these resources, it has in the past four decades been excessively quarried for stone and sand.
- **Watershed –** A vital source for rivers like Chambal, Sabarmati, and Luni, and crucial for groundwater recharge.
- **Ecological Significance:**
  - **Desertification Barrier –** They help arrest the eastward spread of the Thar Desert into Haryana, Rajasthan and western Uttar Pradesh.
  - **Air Quality –** Reduces dust pollution in the Delhi-NCR region.
  - **Water Security –** Helps recharge groundwater for northern India.



What was the action taken against mining?

- **Rules of ministry** – The Environment Ministry, since the early 1990s, has laid down rules restricting mining to only sanctioned projects but these have been flagrantly violated.
- **Supreme court ruling** – In 2009, the SC stepped in and imposed a blanket ban on mining in the Faridabad, Gurugram, and Mewat districts of Haryana.
    - In May 2024, the SC prohibited granting of fresh mining leases and renewals in the range and directed its *Central Empowered Committee (CEC)* to undertake a detailed examination, leading to a set of recommendations submitted in March 2024.
- **Proposal of The CEC** – It proposed a comprehensive approach that included:
    - a complete scientific mapping of the Aravalli range across all States.
    - a macro-level environmental impact assessment of mining activities.
    - strict prohibition of mining in ecologically sensitive areas such as protected habitats, water bodies, tiger corridors, key aquifer recharge zones and areas within the National Capital Region.
- It urged stringent regulation of stone-crushing units.

- It also recommended that no new mining leases or renewals be permitted until proper mapping and impact assessments were completed.
- These recommendations were taken up by the Court in its order of November 2025.
- **Green wall project** – In June, 2025, the Centre started an *Aravalli 'Green Wall' project.*
- The plan is to expand green cover in the five-km buffer area around the Aravallis in 29 districts of Gujarat, Rajasthan, Haryana and Delhi.
- The government said this initiative will play a crucial role in restoring 26 million hectares of degraded land by 2030.

Why there is a need for a uniform definition?

- **Erratic criteria** – The Court found that States were using inconsistent criteria to identify Aravalli formations.
- **Contradictory definitions** – There have also been differing definitions, including by expert groups such as *the Forest Survey of India (FSI)* on what makes up 'Aravalli Hills and Ranges.'
- **FSI definition** – In 2010, the FSI had said hills with:
  - Slope >3°,
  - Foothill buffer = 100m,
  - Inter hill distance or valley width= 500m and
  - The area enclosed by above defined hills from all sides," would make up Aravalli hill and ranges.
- **Supreme court's intervention** – To resolve this, it constituted a committee comprising representatives from the Environment Ministry, the FSI, State Forest Departments, the Geological Survey of India and the CEC.
- This committee was tasked with creating a scientifically grounded, nationwide definition of the Aravallis.
- The committee submitted its findings in October 2025.
- **Recent definition –** The SC committee finally ruled that *only hills above 100 metres* would make the cut.

What are the other observations of the Supreme Court?

- **Suggestion for management plan –** The Court directed the preparation of a *detailed Management Plan for Sustainable Mining (MPSM)* covering the entire Aravalli range.
- The plan must:
  - Demarcate areas where mining must be absolutely prohibited,

    - Identify zones where limited and highly regulated mining may be permitted
    - Map sensitive habitats and wildlife corridors
    - Evaluate cumulative ecological impacts
    - Determine ecological carrying capacity
    - Articulate restoration and rehabilitation measures.
- **Approach on mining –** The Court explained that past experiences show *total bans often lead to the rise of illegal mining syndicates*, violent sand mafias and unregulated extraction.
- The Court therefore opted for a calibrated approach:
    - Existing legal mining continues under tight regulation
    - New mining is paused until a scientifically driven plan is prepared
    - Permanently sensitive areas remain off-limits.

Reference

The Hindu| Protection of Aravalli's

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