

The Conservation of the Aravallis

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ABSTRACT: The Haryana legislative assembly amended the Punjab Land Preservation Act (PLPA) which was effectuated in 1900 for “conservation of sub-soil water” and “prevention of erosion,” by giving the state the power to “regulate, restrict or prohibit” certain activities, including “clearing or breaking up” of land. This amendment also removed several hills of the Aravalli range from the category of “restricted area,” making around 63,000 acres of the Aravalli range available for construction and mining activities. By the same amendment, the Haryana government also attempted to legitimise several illegal constructions in the range. However, the Supreme Court, through an order, promptly nullified the amendment.

KEYWORDS: Aravalli, mountains, preservation, conservation, orogenic, amendment, government

I. INTRODUCTION

The Aravallis act as a barrier between the fertile plains in the east and the sandy desert in the west. Historically, it is said that the Aravalli range checked the spread of the Thar desert towards the Indo-Gangetic plains, serving as a catchment of rivers and plains. The Aravalli is rich in biodiversity and provides habitat to 300 native plant species, 120 bird species and many exclusive animals like the jackal and mongoose. Aravallis have an impact upon the climate of northwest India and beyond. During monsoons, it provides barrier and monsoon clouds move eastwards towards Shimla and Nainital¹⁹, thus helping nurture the sub-Himalayan rivers and feeding the north Indian plains. In the winter months, it protects the fertile alluvial river valleys from the cold westerly winds from Central Asia. For Haryana, having the lowest forest cover at around 3.59% of the total forest cover in India, the Aravalli range is the only saving grace, providing the major portion of its forest cover. Aravallis also function as a groundwater recharge zone for the regions around that absorb rainwater and revive the groundwater level. This range is considered the “lungs” for the world’s most polluted air of Delhi–National Capital Region (NCR)¹

More than 25% and 31 hill ranges of the Aravallis in Rajasthan had vanished due to illegal quarrying. Loss of a great number of flora and fauna like leopards, striped hyenas, golden jackals, nilgais, palm civets, wild boar, Many rivers originating in the Aravalli like Banas, Luni, Sahibi and Sakhi, are now dead. A serious ecological impact of digging or mining to a great depth is puncturing of aquifers², which disturbs the water flow, results in drying of lakes and popping up of new ones. Many water bodies such as famous Badkhal lake has been dried up and new water bodies due to depression left by illegal miners are popping up thus creating an environmental imbalance¹⁸. The major reason for air pollution in the NCR region is particulate matter, especially Respirable Particulate Matter (RPM), a direct contribution of mining, and crushing.³ Man-wild animal conflict as natural forests along aravallis are being lost. The hydrological system and consequent water table in the whole NCR region is under threat, with altered natural drainage patterns.⁴ The price of the exploitation of such natural resources will also be paid by future generations. Therefore, it is necessary to track down the transfer of the Aravalli range-related equity from one generation to the next in the legal context. The concept of “**intergenerational equity**” was introduced in the **Stockholm Declaration**.²⁰

The natural resources of the earth, including the air, water, lands, flora and fauna and especially representative samples of natural ecosystems, must be safeguarded for the benefit of the present and future generations through careful planning or management, as appropriate. Further, the concept was elucidated in the Rio Declaration that states: The right to development must be fulfilled to equitably meet developmental and environmental needs of present and future generations.⁵

In the absence of proper industrialization, and **lack of sustained livelihood** source people are depending upon mining and ancillary industry for income. There is phenomenal demand for **construction material** in NCR²⁶ and adjacent reason, mining in Aravalli meets those needs. **Implementational lacuna:** even with the Supreme Court ban in place, illegal mining only proliferated, thus showing lack of political will.⁶

II. DISCUSSION

Like mining in Rajasthan, the illegal construction activities in Haryana shocked the Supreme Court in 2018. Although the Supreme Court categorically banned real estate activities in the Aravalli range falling under Haryana, the Haryana government not only gave a nod to the construction projects, but also actively aided in the running of these

projects. The Supreme Court has laid down the “precautionary principle,” stating that the central and/or the state governments, while considering a project, must foresee environmental degradation and shall prevent such degradation without waiting for scientific evidence to show that there will be irreparable damage to the environment (Vellore Citizens Welfare Forum v Union of India and Others 1996). In 2010, the term “precautionary principle” was adopted by the National Green Tribunal (NGT). Section 20 of the NGT Act, 2010 specifically states that the tribunal can apply the precautionary principle while passing any order, decision, or award. MoEFCC issued an unprecedented notification on May 7, 1992¹⁷, known as “The Aravalli Notification⁷”. This notification clearly prohibits the setting up of new industries, mining, deforestation as well as construction activities, including roads and laying of transmission cables, without the prior permission from MoEFCC.⁸

Around 2009, the Municipal Corporation of Gurgaon declared it a biodiversity park and partnered with civil society, corporates and residents to plant trees and restore the forest. Today, it has nearly 200 species of plants, 183 species of birds, numerous species of reptiles and insects. Residents along with volunteers from iamgurgaon, a citizen action group involved in the conservation of the Aravallis were assisted by ecologists to create a self-sustaining Aravalli. This model should be followed and implemented to save aravallis and brewing concurrent environmental disaster.⁹

The Aravalli Range is rich in wildlife. The first-ever 2017 wildlife survey of a 200 square kilometre area crossing five districts (Gurgaon, Faridabad, Mewat, Rewari and Mahendergarh) of Haryana by the Wildlife Institute of India (WII) found 14 species, including leopards, striped hyena (7 sightings), golden jackal (9 sightings, with 92% occupancy across the survey area), nilgai (55 sightings), palm civet (7 sightings), wild pig (14 sightings), rhesus macaque (55 sightings), peafowl (57 sightings) and Indian crested porcupine (12 sightings). Encouraged by the first survey, the wildlife department has prepared a plan for a comprehensive study and census of wildlife across the whole Aravalli Range, including radio collar tracking of the wild animals. Well known leopard and hyena habitat is along the Ferozpur Jhirka-Nuh Aravali range as well as Delhi South Ridge (Faridabad-Gurugram) to Farrukhnagar area on the Delhi-Haryana border, with reports of sightings in Saidpur, Lokri and Jhund Sarai Viran villages near the KMP expressway; Bhukarka 7 km from Pataudi; Pathkori, Bhond, Mandawar in Ferozpur Jirka region.¹⁰

Human activity, such as unplanned urbanization and polluting industrial plants, also pose a great threat. There is often reluctance and denial on part of the government officials of the presence of wildlife such as leopard so that the forest land can be exploited and opened up for the intrusive human development¹⁶

III. RESULTS

The Aravallis of Northwestern India, one of the oldest fold mountains of the world, now form residual mountains with an elevation of 300m. to 900m. They stretch for a distance of 800 km. from Himmatnagar in Gujarat to Delhi, spanning Haryana, Rajasthan, Gujarat, and Delhi, the 692 kilometre (km). The mountains are divided into two, main ranges – the Sambhar Sirohi Range and the Sambhar Khetri Range in Rajasthan, where their extension is about 560 km²¹. The hidden limb of the Aravallis that extends from Delhi to Haridwar creates a divide between the drainage of rivers of the Ganga and the Indus. These are fold mountains of which rocks are formed primarily of folded crust, when two convergent plates move towards each other by the process called orogenic movement. The Aravallis date back to millions of years when a pre-Indian sub-continent collided with the mainland Eurasian Plate. Carbon dating has shown that copper and other metals mined in the ranges date back to at least 5th century BC.¹¹

In May 1992, some parts of the Aravalli hills in Rajasthan and Haryana were protected from mining through the Ecologically Sensitive Areas clauses of Indian laws. In 2003, the central government of India prohibited mining operations in these areas²⁵. In 2004, India's Supreme Court banned mining in the notified areas of Aravalli Range. In May 2009, the Supreme Court extended the ban on mining in an area of 448 km² across the Faridabad, Gurgaon and Mewat districts in Haryana, covering the Aravalli Range.¹⁵

A 2013 report used high-resolution Cartosat-1 and LISS-IV satellite imaging to determine the existence and condition of mines in the Aravalli Range. In the Guru Gram district, the Aravalli hills occupy an area of 11,256 hectares, of which 491 (4.36%) hectares had mines, of which 16 hectares (0.14%) were abandoned flooded mines. In the Faridabad and Mewat districts, about 3610 hectares were part of mining industry²⁴, out of a total of 49,300 hectares. These mines were primarily granite and marble quarries for India's residential and real estate construction applications.²² In the Central Rajasthan region, Sharma states that the presence of some mining has had both positive and negative effects on neighboring agriculture and the ecosystem. The rain-induced erosion brings nutrients as well as potential contaminants¹²

IV. CONCLUSIONS

The Aravali Range is the source area of many rivers, resulting in development of human settlements with sustainable economy since pre-historic times. The Delhi Mumbai Industrial Corridor Project, Western Dedicated Freight Corridor, Mumbai–Ahmedabad high-speed rail corridor, North Western Railway network, Jaipur-Kishangarh Expressway and Delhi-Jaipur Expressway, all run parallel to the length of the Aravalli Range providing an economic boost. The Aravalli Range is the home of forests, wildlife, protected areas, UNESCO heritage listed forts, rivers,¹⁴ and historical monuments which sustain a large tourism industry. Damage to the environment and ecology from the unorganized urbanization, overexploitation of the natural resources including water and minerals, mining, untreated human waste and disposal, pollution, loss of forest cover and wildlife habitat²³, unprotected status of most of the Aravalli and the lack of an integrated Aravalli management agency are the major causes of concern¹³.

REFERENCES

1. "Aravalli Biodiversity Park, Gurgaon". Archived from the original on 28 May 2012.
2. ^ Kohli, M.S. (2004), Mountains of India: Tourism, Adventure, Pilgrimage, Indus Publishing, pp. 29–, ISBN 978-81-7387-135-1
3. ^ Dale Hoiberg; Indu Ramchandani (2000). "Aravali Range". Students' Britannica India. Popular Prakashan. pp. 92–93. ISBN 978-0-85229-760-5.
4. ^ Verma, P. K.; Greiling, R. O. (1 December 1995). "Tectonic evolution of the Aravalli orogen (NW India): an inverted Proterozoic rift basin?". *Geologische Rundschau*. **84** (4): 683–696. doi:10.1007/BF00240560. ISSN 1432-1149. S2CID 129382615.
5. ^ Roy, A.B. (1 January 1990). "Evolution of the Precambrian Crust of the Aravalli Mountain Range". *Developments in Precambrian Geology*. **8**: 327–347. doi:10.1016/S0166-2635(08)70173-7. ISBN 9780444883100. ISSN 0166-2635.
6. ^ "International Mountain Day: India has the oldest and the youngest mountains in the world". *India Today*. 11 December 2015. Retrieved 28 June 2018.
7. ^ "Aravalli Hills Are the Oldest Fold Mountains of the World". www.campwilddhauj.in. Retrieved 28 June 2018.
8. ^ George Smith (1882). *The Geography of British India, Political & Physical*. J. Murray. p. 23.
9. ^ "Aravali Range". *Britannica.com*.
10. ^ Roy, A. B. (1990). Evolution of the Precambrian crust of the Aravalli Range. *Developments in Precambrian Geology*, 8, 327–347.
11. ^ Mishra, D.C.; Kumar, M. Ravi. Proterozoic orogenic belts and rifting of Indian cratons: Geophysical constraints. *Geoscience Frontiers*. 2013 March. 5: 25–41.
12. ^ Verma, P.K.; Greiling, R.O. (1995), "Tectonic evolution of the Aravalli orogen (NW India): An inverted Proterozoic rift basin?", *Geologische Rundschau*, **84** (4): 683, Bibcode:1995GeoRu..84..683V, doi:10.1007/BF00240560, S2CID 129382615
13. ^ Tony Waltham (2009). *Foundations of Engineering Geology* (3rd ed.). Taylor & Francis. p. 20. ISBN 978-0-415-46959-3.
14. ^ Philip Kearey; Keith A. Klepeis; Frederick J. Vine (2009). "Chapter 10: Orogenic belts". *Global Tectonics* (3rd ed.). Wiley-Blackwell. p. 287. ISBN 978-1-4051-0777-8.
15. ^ M. Deb and Wayne David Goodfellow, 2004, "Sediment Hosted Lead-Zinc Sulphide Deposits", Narosa Publishing, pp 260.
16. ^ Naveed Qamar, "Indian shield rocks".
17. ^ SM Gandhi (2000) Chapter 2 – Ancient Mining and Metallurgy in Rajasthan, *Crustal Evolution and Metallogeny in the Northwestern Indian Shield: A Festschrift for Asoke Mookherjee*, ISBN 978-1842650011
18. ^ Shrivastva, R. (1999). Mining of copper in ancient India. *Indian Journal of History of Science*, 34, 173–180
19. ^ Jane McIntosh, *The Ancient Indus Valley: New Perspectives*. Understanding ancient civilizations. ABC-CLIO, 2008 ISBN 1576079074 p77
20. ^ Cratons of India.
21. ^ Cratons of India, lyellcollection.org.
22. ^ National Geological Monuments. Jodhpur Group-Malani Igneous Suite Contact. Geological Survey of India, 27 Jawaharlal Nehru Road, Kolkata,700016. 2001. pp. 65–67. Retrieved 23 March 2009.
23. ^ Bhuiyan, C.; Singh, R. P.; Kogan, F. N. (2006). "Monitoring drought dynamics in the Aravalli region (India) using different indices based on ground and remote sensing data". *International Journal of Applied Earth Observation and Geoinformation*. **8** (4): 289–302. doi:10.1016/j.jag.2006.03.002.



24. ^ Kochhar, N.; Kochhar, R.; Chakrabarti, D. K. (1999). "A New Source of Primary Tin Ore in the Indus Civilisation". *South Asian Studies*. **15** (1): 115–118. doi:10.1080/02666030.1999.9628571.
25. ^ Chakrabarti, D. K. (2014). "Distribution and Features of the Harappan Settlements". *History of India II : Protohistoric Foundation*. New Delhi: Vivekananda International Foundation. pp. 97–143. ISBN 978-81-7305-481-5.
26. ^ Law, Randall (2006). "Moving Mountains: The Trade and Transport of Rocks and Minerals within the Greater Indus Valley Region". In Robertson, E. C.; et al. (eds.). *Space and Spatial Analysis in Archaeology*. Alberta, Canada: University of Calgary Press. ISBN 0-8263-4022-9.