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The Great Rajasthan Desert: Social and Environmental Facts

Dr. Sandeep Kumar Yadav
Assistant Professor- Botany
Govt. Dungar College, Bikaner (Raj.)

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Introduction

Thar Desert, also known as the Great Indian Desert, is an arid area in the Indian peninsula with rolling sand hills. It is split between Rajasthan state in northern India and Punjab and Sindh provinces in eastern Pakistan.

The Thar Desert spans an area of 200,000 square kilometres. It is bounded on the west by the fertile Indus River plain, on the north and northwest by the Punjab Plain, on the southeast by the Aravalli Range, and on the south by the Rann of Kachchh. At such latitude, the warm desert climate is caused by sustained high pressure and subsidence. The summer monsoon storms that make rain to most of the subcontinent prefer to skip desert Thar to the east. Thar derives its name from thul, the common word for the region's sand ridges.

Sand Dunes and Land

The desert sands of the Thar are overlain by early Precambrian gneiss (metamorphic rocks developed between 400 million and 2.5 billion billion years ago), Later Precambrian rocks contain and more recent alluvial deposits (material deposited by streams). The surface is composed of 1.8 million years of Aeolian sand accumulation.

The terrain of the desert is undulating, featuring both high and low sandy beaches divided between sandy lowlands and short barren slopes, or bhakars, that rise suddenly from either the surrounding plains. The dunes are constantly moving and changing shape and size. Older dunes, on the other hand, are semi-stabilized or stabilised, and many reach to a height of over 150 metres above the surrounding surroundings. Numerous saline lake beds, colloquially called as dhands, dot the landscape.

Soil

Desert grounds, red desertic soils, sierozems (reddish brown grey soils), red and yellow soil conditions of the foothills, salty soils of the depressions, and lithosols (shallow weathered loams) and regosols (loose soils) found in the hills are the primary categories of soils. All of these soils have a gritty texture, are well-drained, and are calcareous (calcium-bearing). A dense deposit of lime is common at various depths. The soils are often barren and have been overrun with sand due to extensive wind erosion.

Precipitation events

In general, yearly precipitation in the desert ranges from around 100 mm or less in the northwest to about 500 mm in the southeast. The amount of precipitation varies greatly throughout the year. The southwest monsoon season, which lasts from July through September, accounts for over 90% of total annual rainfall.

Weather patterns

For the rest of the year, the prevailing breeze is indeed the arid northeast monsoon. May and June are the warmest periods during the entire year, with temperatures reaching 150 degrees Celsius). The average lowest temperature for January, which is the coldest month, is between 5 and 10 °C, and fog is common. Sandstorms and dust-raising winds, with speeds ranging from 87 to 93 miles (140 to 150 km/h), common in May and June.

Flora and Fauna

The desert vegetation is largely herbaceous or stunted brush; drought-resistant trees dot the terrain sporadically, especially in the east. Gum arabic, acacia, and *Euphorbia* may well be found on the slopes (Bhandari 1990). Across the plains, the khajri tree (*Prosopis cineraria*) flourishes. Yadav and Meena 2021 also studied that thar fungal endophytes in medicinal plants of Thar Desert is the attractive resource for biopharmaceuticals. Parihar *et al*. 2022 described microbial diversity of Thar Desert.

The grasslands are hometo black bucksks, chinkara (gazelles), and some feathered game, most notably francolins (partridges) and quail. Sand grouse, ducks, and geese are frequent migratory birds. The desert is also home to the critically endangered great bustard.

Individuals

The majority of the desert's people live in rural regions and are spread out in varied densities. Islam and Hinduism are both practised, and the populace is split into several economic and social groupings. Sindhi is the dominant language in the south, Lahnda in the north, and Rajasthani languages, particularly Marwari, in the central and eastern Thar. The Thar have a broad ethnic makeup. The Rajputs, who live in the central Thar, are one of the most significant tribes. Many nomads work in agriculture, crafts, or commerce. In average, nomads have a symbiotic relationship with the stationary population and its economy.

Economy

The grasses are the desert's primary natural resource. They give nourishing pasture as well as medications utilised by the locals. Alkaloids, which are used to make medication, and oils, which are used to make soap, are also removed. The Thar is home to five significant cattle breeds. The Tharparkar breed produces the most dairy, and the Kankre species is useful as both a beast of burden and a milk producer. Sheep are bred to produce both medium-fine and coarse wool. Camels are often employed for transportation as well as field ploughing and other agricultural tasks. Farmers produce crops like wheat and cotton when water is accessible.

Availability of Water

Water, on the other hand, is in short supply. Whatever rain falls during the season is gathered in containers and reservoirs to be utilized for drinking and residential needs. The majority of groundwater cannot be used since it is deep down and frequently salty. Aquifers have been discovered in the desert's centre region. Canals, in addition to wells and tanks, are indeed the main source of water in the arid landscape. The Indira Gandhi Stream irrigates a large area of land inside the Indian Thar. The channel starts at the Harike Barrage, just at convergence of the Sutlej and Beas rivers in Indian Punjab, and runs southwest for 470 km.

Ecotourism

Camel excursions in the desert have grown in popularity around Jaisalmer. Domestic and foreign visitors visit the desert in search of freedom on camel for a day or several days. This ecotourism sector includes anything from low-cost backpacker hikes to opulent Arabian night-style campsites complete with feasts and cultural entertainment. Tourists may see the Thar Desert's delicate and magnificent ecology during the hikes. Several entrepreneurs and camel proprietors in Jaisalmer benefit from this type of tourism, as do many camelback trekkers in the adjacent desert communities. Visitors travel from all over the globe to view the Pushkar ka Festival (Pushkar Fair) and the oasis.

Summary

Steps must be made immediately to prevent the Desert desert and the surrounding region from a grave situation. Such should include: increasing green cover in sandy terrain to reduce soil degradation and soil nutrient damage, improving crop water use efficiency and continuing to develop heat and lack of rain tolerance in crops; management techniques to address the issues of increased flood and drought frequency; trying to improve the animal farming framework as a compelling alternative to crop-based economic system; a thorough knowledge and careful supervision of land cover processes.

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