

Loss of the Floral Diversity of Shekhawati Region of the Indian Thar Desert and its Impact on Humanity

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ABSTRACT: Shekhawati is a town and a municipality in Ramgarh tehsil of Sikar district in the Indian state of Rajasthan. The area surrounding this town is semi-arid. The town located at trijunction of Churu district in north, Jhunjhunu district in East and Sikar district in south.^[1] The city of Churu is at a distance of about 17 km from the town. Shekhawat is a clan of Rajputs found mainly in Shekhawati region of Rajasthan. Shekhawats are descendants of Maharao Shekha of Amarsar. Shekhawat is the most prominent clan among Kachhwaha. The Shekhawati region was ruled by them for more than 500 years. Fought against mughals many time. Rao Sujjan Singh of Chhapoli fought mughal army with 300 men to save temple.^{[1][2]}

- Bhairon Singh Shekhawat former Chief minister of Rajasthan and former Vice president of India. Yudhveer Singh Shekhawat is his relative^{[3][4]}
- Gajendra Singh Shekhawat the present Union Cabinet Minister in Ministry of Jal Shakti.^{[5][6]}
- Piru Singh Shekhawat^{[7][8]}
- Ajit Singh of Khetri of the Shekhawat clan helped the Swami Vivekanand by giving financial help^{[9][10][11]}
- Brigadier Saurabh Singh Shekhawat^[12]

KEYWORDS: Shekhawati, Thar desert, Rajasthan, floral diversity loss, humanity, impact, biodiversity

I. INTRODUCTION

Shekhawati is a semi-arid historical region located in the northeast part of Rajasthan, India. The region was ruled by Shekhawat Rajputs. Shekhawati is located in North Rajasthan, comprising the districts of Jhunjhunu, parts of Sikar that lies to the west of the Aravalis and Churu. It is bounded on the northwest by the Jangladesh region, on the northeast by Haryana, on the east by Mewat, on the southeast by Dhundhar, on the south by Ajmer, and on the southwest by the Marwar region. Its area is 13784 square kilometers.^[1]



Shekhawati region of Rajasthan (in blue)

In the 17th to 19th centuries, Marwari merchants constructed grand havelis in the Shekhawati region. Steeped with wealth and affluence, the merchants attempted to outdo others by building more grand edifices – homes, temples, and step wells which both inside and outside were richly decorated with painted murals.^[2]

Shekhawats constructed many forts and temples, step well(bawdi) in Shekhawati region and patronized Hindu culture. There are more than 50 forts constructed by them. Shahpura, Alsisar, Bissau, Dundlod, Danta Ramgarh, Mahansar, Khetri, Mandawa, Nawalgarh, dalelgarhfort(baloda) Laxmangarh, Khandela Sikar, Jhunjhunu these are sites of some beautiful fort, temples and other architectural beauty work done under shekhawat rule in Shekhwati^{[13][14]} India is full of treasure, when it comes to architecture and history. Shekhawati region is one of the gems of India for art lovers. The region is located northeast Rajasthan, comprising of districts of Jhunjhunu, Nagaur, Sika and Churu. The region has a great background, as it was established in the 18th century along a caravan trade route, and ruled by the Shekhawat Rajputs.[3,4]

Although the Shekhawati region is located in the popular triangle of Delhi-Jaipur-Bikaner, many people overlook it in favour of other popular destinations in Rajasthan. However, the region is referred to as the world’s largest open air art gallery. Not only does the region consist of majestic forts and breathtaking views, but also it features numerous havelis that go back to the 19th century. Spreading over the region, these havelis are the main attraction in the region, give it the value of being the largest open air gallery.[5,6]

The weather in Shekhawati region can be very harsh. Thus, visiting the region during summer is quite a risk; same goes for winters. Hence, the best time to visit the region is any time between October and March. February is kind of special for the visits for two reasons. The first one is that the weather becomes quite pleasant during this month. The second reason is that the annual festival is held in February in Nawalgarh. The festival shows the local talents, giving the visitors a reason to visit the region.

These havelis were constructed by people from the potter community. What contributed in creating this aesthetic region is that businessmen commissioned the mansions. In addition, they ordered artists to decorate the havelis, step-wells and temples. Most of the artists came from Jaipur, after constructing various palaces. They used their techniques and skills in painting remarkable and luxurious frescos on the walls of the mansions, inside and outside. The havelis’ motifs, especially Krishna, depict the impact on the artists and their art. The frescos represent wealth and power.

The early frescos were influenced by the Mughal art form whereas the later ones were inspired from the Rajput royal courts. Similar to any form of art, mythology and religion provided source inspiration. The frescos depicted European women and men, with the increase of the British and western influence, with the increase of the British and western influence. Additionally, some frescos were influenced by modern inventions such as the motifs of telephones, hot air balloons, and trains.

The themes of the havelis are quite broad. In some of them, the fresco portrays Europeans taking a ride in a hot air balloon that is being blown into, reflecting the artist's unlimited imagination. All of these make the region such a unique place to visit. As for the religious aspect, there are some frescos of Jesus. [7,8]

Shekhawati was first mentioned in the book Bankidas ki Khyat.[3] A contemporary of Bankidas was Colonel W.S. Gardener, who used the word Shekhawati in 1803. Later James Tod wrote the first history of Shekhawati. The term Shekhawati was used frequently in Vamsh Bhaskar.[4] Shekhawati is named after Rao Shekha. Many historians have considered this region included in the Matsya kingdom. Rigveda also provides certain evidences in this matter.[5][6] Manusmriti has called this land as 'Brahmrishi Desha'. [7]

Shekhawati region was included in 'Marukantar Desha' up to the Ramayana period. Out of 16 mahajanapadas prior to Buddha, only two Janapadas, namely Avanti and the Kingdom of Virata, were counted in the Rajasthan area. This region was also influenced by Avanti but later on Nandas of Magadha defeated Avanti. Historians believe that Mauryas obtained the Rajasthan from Nandas.[8]

In ancient times Shekhawati was not limited to the present two districts. During the Mahabharata period, it was known as Matsya Kingdom and extended to the Sarasvati River. Matsya Kingdom was founded by King Matsya (named Matsya because he was born from a apsra living as a fish), Son of King Uparichara Vasu.[9] During ancient times this region was divided into several janapadas. Dhosi Hill, the revered hill bordering Haryana and famous for Chyavana Rishi's Ashram, as well as the place where Chyawanprash was formulated for the first time, has extensive mentions in the epic Mahabharat in Vanparv.

After the collapse of the Gupta dynasty, The Shekhawati was controlled by the Chauhan Rajputs. Some parts of Shekhawati, Jhunjhunu, Fatehpur, and Narhar were taken from them by Kaimkhanis which in turn were defeated by Shekhawat Rajputs.

Kaimkhani is a branch emerging from the Chauhans. The first progenitor of Kaimkhanis was Karamchand, born in the family of Moterao of Chauhan clan, the ruler of Dadrewa. Firuz Shah Tughluq converted him to Islam and named him Kaimkhan. Thus his descendants are called Kaimkhani.[9,10]

II. DISCUSSION

Shekhawati was established and ruled by Shekhawat Rajputs until India's independence. Rao Shekha from Dhundhar established his own independent kingdom with the capital at Amarsar. He was the first independent ruler. After him, Rao Raimal, Rao Suja, and Rao Lunkaran become the rulers of Amarsar. Rao Manohar succeeded his father Rao Lunkaran and founded Manoharpur later renamed Shahpura (The present ruler of Shahpura is the Tikai of Shekhawat subclan). Shekhawats conquered the Jhunjhunu, Fatehpur, Narhar of Kaimkhanis and established their rule in 1445 and ruled till 1614. The Desert National Park in Jaisalmer, spread over an area of 3,162 square kilometres (1,221 sq mi), is an excellent example of the ecosystem of the Thar Desert and its diverse fauna.

Seashells and massive fossilised tree trunks in this park record the geological history of the desert. The region is a haven for migratory and resident birds of the desert. One can see many eagles, harriers, falcons, buzzards, kestrels and vultures. Short-toed snake eagles (*Circaetus gallicus*), tawny eagles (*Aquila rapax*), spotted eagles (*Aquila clanga*), laggar falcons (*Falco jugger*) and kestrels are the commonest of these. Rao Shekha, a Shekhawat Rajput (sub-branch of Kachhwaha), [11,12] was the founder of Shekhawati, who originally divided Shekhawati into 33 Thikana (also called a Pargana), each with at least a kutcha mud fort, some of which were fortified further with stone. Many Thikanas had their own flags and emblems. Shekhawats ruled over the largest number of Thikanas in Jaipur Rajwara. Shekhawati is in the Thar Desert of Rajasthan and has special importance in the history of India. It also covers part of the Bagar tract along the Haryana-Rajasthan border. The climate of the desert region is harsh and extreme. The temperature ranges from below 0 °C (32 °F) in winter to more than 50 °C (122 °F) in summer. The summer brings hot waves of air called loo. Annual rainfall is at around 450 to 600 mm. The groundwater is as deep as 200 feet (60 m), and in some places, the groundwater is hard and salty. The people in the region depend on rainwater harvesting. The harvested rainwater from the monsoon season (during July and August) is stored in pucca tanks and used throughout the year for drinking purposes.[13] The Ranthambore National Park located in Sawai Madhopur, one of the well known tiger reserves in the country, became a part of Project Tiger in 1973.

Tal Chhappar Sanctuary is a very small sanctuary in Sujangarh, Churu District, 210 kilometres (130 mi) from Jaipur in the Shekhawati region. This sanctuary is home to a large population of blackbuck. Desert foxes and the caracal, an apex predator, also known as the *desert lynx*, can also be spotted, along with birds such as the partridge, harriers, eastern imperial eagle, pale harrier, marsh harrier, short-toed eagle, tawny eagle, sparrow hawk, crested lark, demoiselle crane, skylarks, green bee-eater, brown dove, black ibis, and sand grouse.^[59] The great Indian bustard, known locally as the *godavan*, and which is a state bird, has been classed as critically endangered since 2011^[14,15]

Tal Chhappar Sanctuary is a sanctuary located in the Churu district of Northwestern Rajasthan, in the Shekhawati region of India. It is known for blackbucks and is also home to a variety of birds. The sanctuary is 210 km from Jaipur on the fringe of the Great Indian Desert and situated on road from Ratangarh to Sujangarh. The Tal Chhappar sanctuary lies in the Sujangarh Tehsil of Churu District. It lies on the Nokha-Sujangarh state highway and is situated at a distance of 85 km from Churu and about 132 km from Bikaner. The nearest railway station is Chappar which lies on Degana-Churu-Rewari line of North Western Railways. The nearest airport is Jaipur which is 215 km from Chappar.^[16,17]

Tal Chhappar is a refuge of the blackbuck.

The sanctuary is named after Chhappar village which is located at 27°-50' North and 74°-25' East. It is a flat saline depression locally known as a "tal" that has a unique ecosystem in the heart of the Thar Desert. Perched at a height of 302 meters^[2] (990 feet) above sea level. Tal Chhappar Sanctuary, with almost flat tract and interspersed shallow low-lying areas, has open grassland with scattered *Acacia* and *Prosopis* trees which give it an appearance of a typical savanna. The word "tal" means pond or 'talab' in Hindi. The rain water flows through shallow low-lying areas and collect in the small seasonal water ponds.

The geology of the zone is obscured by the wind blown over-burden. Some small hillocks and exposed rocks of slate and quartzite are found in the western side of the sanctuary. The area between hillocks and the sanctuary constitutes the watershed area of the sanctuary. The whole sanctuary used to be flooded by water during the heavy rains but with salt mining going on in the watershed, hardly any rain falling on the hillocks reaches the sanctuary. Near by villages are Jogalia, Jaitasar, Bidasar.^[28,29]

The forest of this region falls under major group "Tropical Forest" as per classifications of Indian forests by Champion & Seth. The forest of sanctuary area again falls under the group "Topical Thorn Forest" and sub group 6B/C "Desert Thorn Forests".

The sanctuary area is mostly covered by grasses with a very few trees. It lies on the passageway of many migratory birds such as harriers. These birds pass through this area during September. Birds commonly seen in the sanctuary are harriers, eastern imperial eagle, tawny eagle, short-toed eagle, sparrow, and little green bee-eaters, black ibis and demoiselle cranes, which stay till March. Skylarks, crested larks, ring doves, and brown doves are seen throughout the year.^[3] Desert fox and Wildcat can also be spotted along with typical avifauna such as partridge and sand grouse.^[20,21]

Tal Chhappar Sanctuary comes alive with the chirping of various migratory birds including Montagu's harrier, marsh harrier, pale harrier, imperial eagle, tawny eagle, short toed eagle, sparrow hawk, skylark, crested lark, ring dove, brown dove, blue jay, southern grey shrike, Indian spotted creeper, green bee eaters, black ibis and demoiselle cranes.

In the Tal Chhappar Sanctuary, a special type of grass is found. This grass is called *Mothiya* locally. The word "Mothiya" comes from the word "Moti" or from the Hindi word for pearl. The shape of the seed of this grass is like very fine round shaped pearls. Mothiya has a very sweet taste. People enjoy eating it, but it is found in very small quantities. Production is only a few kilograms every season. Mothiya is also food for blackbucks and birds which dig it from the earth with their starks.^[18,19]

III. RESULTS



Tal Chhappar in Rajasthan

This region is characterized by a distinct winter (from October to February), summer (March to June) and monsoon (July to September). The zone has a dry climate with a large variation in temperature wind blows south – west during summer. In May and June winds become very hot and that is called "loo" The maximum temperature reaches up to 48 °C (118 °F) in June and the minimum temperature falls to 10 °C (50 °F) in December – January. The Tal Chhappar Zone comes under the principal arid zone of the country. Rainfall in this region is highly erratic. There is a large variation in mean annual rainfall in this region. The average rainfall in this region is about 300 mm. There is a rest house situated in the sanctuary area and being maintained by the forest department having six rooms accommodation, four of which are AC rooms. It also has a basic dining facility at a nominal charge. This rest house come under the control of Deputy Conservator of forest, Churu. Anyone can contact for accommodation to DCF, Churu. Chhappar – Sujangarh state highway divides the sanctuary area into two parts. In the sanctuary there are Kacha tracks which are used for inspection, patrolling & viewing the fauna of the sanctuary. In February 2006, Tal Chhapper was included in the itinerary of the "Heritage on Wheel" train. Now tourists have the opportunity to visit the sanctuary twice in a week by train.

In March 2006, Rs. 2 crore and 82 lacs budget announced by Hon'ble C.M. in her budget speech 2006-07 for the development of Tal Chhappar Sanctuary, for 2006-07 to 2010-11 (a five-year plan). The forest department has improved the grassland ecosystem of Tal Chhappar by undertaking several soil and water conservation works. [20,21]

Tal Chhapper Sanctuary was included in the tourism map of Rajasthan tourism. Hon'ble CM has announced a project in the budget speech 2006-07 for the development of the sanctuary as an eco-tourism and wildlife tourism spot. The project includes a five-year action plan amounting to Rs.2.82 crores for integrated development of the sanctuary. Budget provision for Rs.1.10 crores in the current financial year has been sanctioned. A high-level committee headed by Principal Secretary, Forest and comprising the famous architect Ms. Revathi Kamath, fashion designer international fame Ms. Bibi Russel, commissioner Tourism and Chief wildlife warden visited the sanctuary to make a comprehensive and integrated development action plan. Rajendra Dadhich president Rajasthan Vikas Parisad, Mumbai also visited.

The sanctuary has become an important destination for the birders, who visit in large numbers during winters. The sanctuary is named after Chhappar village which is located at 27°-50' North and 74°-25' East. It is a flat saline depression locally known as a "tal" that has a unique ecosystem in the heart of the Thar Desert. Perched at a height of 302 meters (990 feet) above sea level. Tal Chhapper Sanctuary, with almost flat tract and interspersed shallow low-lying areas, has open grassland with scattered *Acacia* and *Prosopis* trees which give it an appearance of a

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V. CONCLUSIONS

In February 2006, Tal Chhappar was included in the itinerary of the "Heritage on Wheel" train. Now tourists have the opportunity to visit the sanctuary twice in a week by train. [30,31]

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