

Assessment of Eco-Tourism Potential at Tal Chhappar Sanctuary, Churu, Rajasthan, India

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Abstract

Ecotourism includes visiting natural and cultural environmental settings with the aim of sustainability. The changing nature of tourism activities post Covid-19, are more suited to the natural environments. Tal chhappar has a wealth of natural, cultural, historical and recreational features which gives the area significant tourism potential. In order to assess potential and possibilities of ecotourism in this area we analyse the natural resources and attractive sites of Tal Chhappar sanctuary. The natural setting of the sanctuary includes diverse fauna and flora which if managed properly can give impetus to tourism growth in the region. While assessing the results we aim to determine the potential of tourism growth at Tal Chhappar.

Keywords: Ecotourism, Tal Chhappar, Sustainability, Potential, Tourism Growth.

Introduction

Tal Chhappar Sanctuary lies in the Sujangarh tehsil of Churu district in the north-east of Rajasthan. The sanctuary lies on Nokha-Sujangarh state highway at a distance of 85 KM from Churu and 120 KM from Bikaner. Chhappar is the nearest railway station on Degana-Churu-Delhi broad gauge line of north-western railways. The nearest airport is Sanganer(Jaipur) is 230 KM away from the sanctuary. This sanctuary is known for its black buck population and also famous for its fauna and flora.

The Tal Chhappar sanctuary was declared a 'reserved area' for the protection of wild animals and birds in 1962. This area was finally notified as reserved forest in 1966 under section 20 of Rajasthan forest act 1953 and published in Rajasthan gazette on sept 8, 1966. It was declared a sanctuary in 1998 under wildlife protection act 1972. Tal Chhapper sanctuary is almost plane with interspersed shallow depressions. There is gentle slope of land from west to east. It has open grassland with scattered Acacia and prosopis trees which looks like Savanna grassland.

Objective of the Study

1. To analyse the ecological setting of Tal Chhappar sanctuary.
2. To assess the potential of sanctuary as eco-tourism site.
3. To examine the problems faced / barriers in tourism growth.

Review of Literature

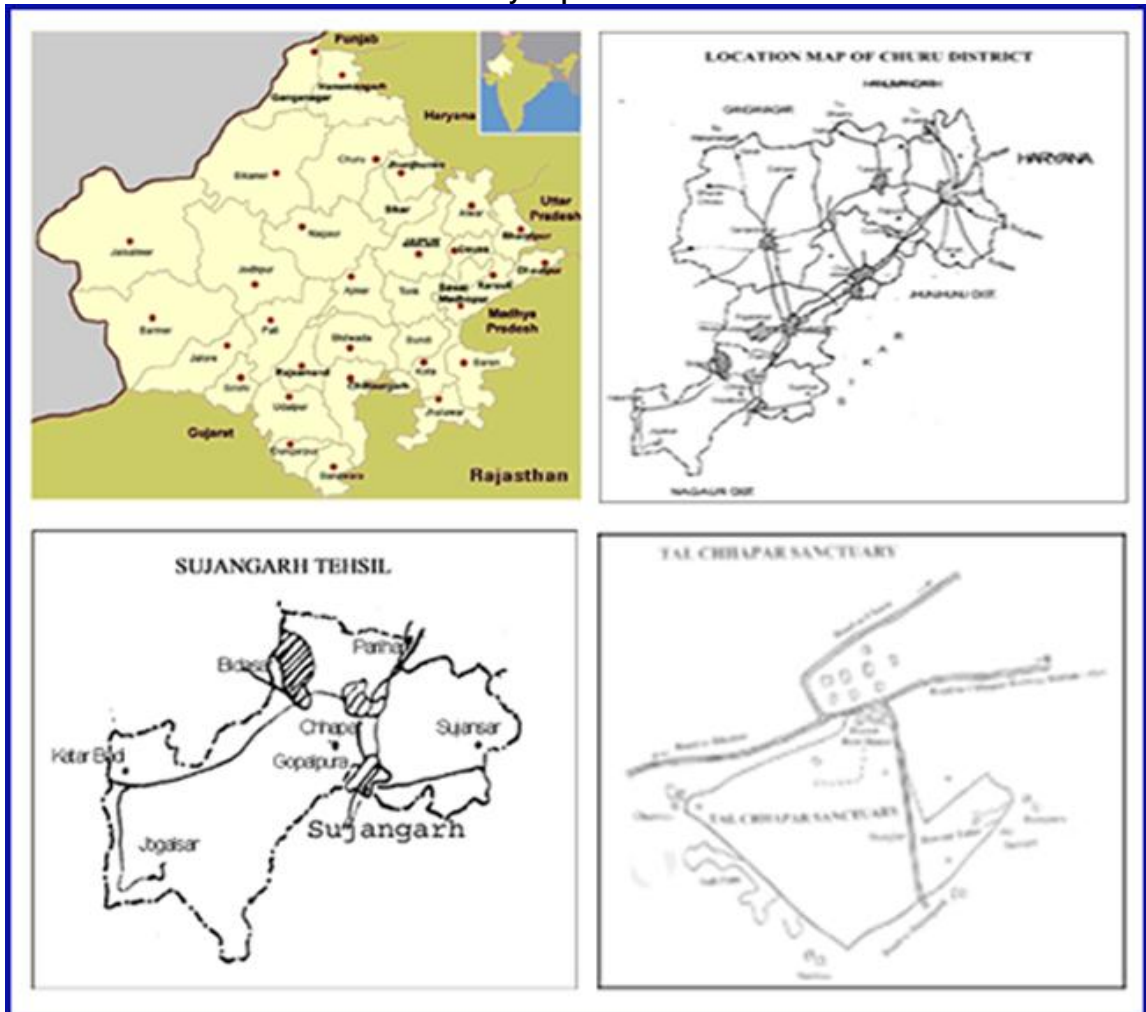
A comprehensive review of literature gives insight in the study of different aspects of eco-tourism. Ceballos-Lascurain (1987) was the first to use the term Eco –Tourism. Cammorata, (2013) defined eco-tourism as "Traveling to a remote area to enjoy, protect, and bring awareness to endangered wildlife." Hall and Page (2006) describes eco-tourism as "environment friendly form of tourism which have the capacity to attract tourism". Honey (2008) described eco-tourism as "travel to fragile, pristine, and usually protected areas that strive to be low impact. Wearing and Neil (2009) analyses the impacts of mainstream tourism in world countries and argues the benefits of adopting approach of ecotourism to create sustainable tourism. Tripathi and Jain (2017) in their study on Uttar Pradesh tried to establish the relationship between ecotourism and employment. Nasser Ahmad (2018) assess the adversity of ecotourism with reference to Jammu & Kashmir. Kuldeep singh (2019) studied about the ecotourism in Rajasthan and tried to describe the scope of ecotourism in the state. Meera Ranjith (2020) examined the potential and scope of ecotourism in Kerala. (often) small scale".



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Key Map



Geography

The sanctuary is named after 'Chhapar' village which is located at 28° 27.5' North and 73° 47.5' East. It is a flat saline depression locally known as "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. The area of Tal Chhapar sanctuary is spread in 7.19 sq. km and it is the home land for Black bucks which are endangered species. Besides this many other animal and plant species are found in Tal Chhapar sanctuary. These are very useful in medicinal point of view and in maintain food chain of nature. Geographically the sanctuary is situated in a very small part of Thar Desert. So the fauna and flora of the region are decided by Geographical and climatic conditions of Thar Desert. This region is characterized by distinct winter (Oct. to Feb.), Summer (March to June) and Monsoon (July to Sept.). The zone has a dry climate with large variation in temperature wind blows South – West during summer. In May and June winds become very hot and that is called "Loo" Maximum temperature reaches up to 48°C in June & minimum temperature falls up to 10°C in month of December – January. The Tal Chhapar Zone comes under the principal arid

zone of the country. Rainfall in this region is highly erratic. There is large variation in mean annual rainfall in this region. Normal rainfall in this region is about 300 mm.

Flora and fauna

According to classification of Indian forests this area comes under the tropical forest category. Sanctuary area falls under the tropical thorn forest. Tal Chapar is drought prone region and often faces problem of irregular rain. Growth of vegetation is therefore severely limited by aridity. Moreover, increasing heavy demand of wood with increasing human population and overgrazing by livestock has drastically reduced regenerative capacity to such an extent that now a day large trees in major part of arid zone are scare. So far as this study is concerned, plant species which occur randomly are described. The important flora occurring in this arid zone is classified into herbs, shrubs and trees which are being used as nesting sites or nesting materials.

The sanctuary area has more grasses interspersed with few trees. Mothiya grass in the sanctuary is most loved by black bucks. It has a very sweet taste. Wild life is a part of our ecosystem. Since they keep the energy budget control through various

food webs, biological controls and ultimately keep the homeostasis in environment. Along with their aesthetic, game and other economic importance they keep the rich heritage of our nature. The Tal Chhappar sanctuary is a unique ecosystem. It was declared 'Reserved Area' for the protection of wild animal and birds in 1962. Over 2400 Black bucks are found in almost tree less saline flat land of Tal Chhappar sanctuary. This a natural home of Black bucks. There is indication that Black bucks population is on the increase at Tal Chhappar. Here once can enjoy the stick grace and beauty of Black bucks at every close quarters, sometimes for a distance of merely 100 feet. Wild life consumes Dab, Lana, Ghora dub, Moth, Lung and many ground floras. Food becomes a limiting factor during summer and sometimes even in a late winter. The sanctuary has four water sports at different location in and around its periphery. The livestock and Black buck make use of these water sources. Here animals get sufficient salt by eating various grasses rich in salt contents and it is also necessary for their health.

The most commonly seen birds in the sanctuary are Harriers, Eagle, Sparrow, Black Ibis, Demoiselle Cranes etc. Cranes stay in the sanctuary till March. Migration of Harriers is the most common. Hundreds of birds pass through this place for a short stop over, to feed themselves with fresh food in the form of insects. Kashmir rollers pass through during September and October, whereas skylark, crested lark, ring dove, brown dove and blue jay can be found throughout the year. The black ibis is frequently seen here. The most typical phenomenon is that of the demoiselle cranes which arrive in the first week of the September and stay till March.

The Black buck population is stocked but food, water and shelter facilities for these animals are needed to be improved, so that the area can sustain a large number and varieties of wild species in healthy conditions. Tal chhappar wildlife sanctuary is a unique sanctuary having a good population of Black buck in a small area of 719 ha. The sanctuary houses nearly 2500 Black Bucks in a small area. This is a natural home of Blackbucks and one can easily encounter 500-700 animals in a single herd. It is the only sanctuary in India in which houses a good population of blackbucks in an almost tree-less, saline and flat-land.

The Black bucks of this area represents Antelope family. The beautiful horns gave them elegance and make them very attractive. The attractive physique including black fur on rump, white fur on chest belly, white rings around eyes, long ringed spiral horns make it most beautiful of all the animals.

The population growth of Black bucks is as follow-

Table 1 Population of Blackbucks from 2001 to 2015

Year	Male	Female	Fawn	Total
2001				1576
2002	686	768	184	1638
2003	525	534	222	1281
2004	597	873	228	1698

2005	589	853	238	1680
2006	665	818	280	1763
2007	660	820	267	1747
2008	669	835	323	1827
2009	692	876	342	1910
2010	711	904	408	2025
2011	757	842	457	2206
2012	905	862	444	2311
2013	764	1174	455	2393
2014	846	1166	423	2435
2015	867	1191	434	2492

Source: Forest Range Office, Tal Chhappar, Churu
Other wild animals also found in the sanctuary are chinkara, fox, juangle cat, rojra along with many resident and migratory birds.

Kurja (Demoiselle Cranes)

The queen of Rajasthan Folk songs Kurja (demoiselle crane), the migratory bird from far off countries as Siberia, Magnolia, Tajikistan, central Asia, etc starts to migrate in the month of September. The Demoiselle is 85-100 cm long with a 155-180 cm wingspan. It is therefore slightly smaller than the Common Crane, with similar plumage. However it has a long white neck stripe and the black on the fore neck extends down over the chest in a plume. It has a loud trumpeting call, higher-pitched than the Common Crane. Like other cranes it has a dancing display, more balletic than the Common Crane, with less leaping.

Demoiselle cranes have to take one of the toughest migrations in the world. In late August through September, they gather in flocks of up to 400 individuals and prepare for their flight to their winter range. During their migratory flight south, demoiselles fly like all cranes, with their head and neck straight forward and their feet and legs straight behind, reaching altitudes of 16,000-26,000 feet (4,875- 7,925 m). Along their arduous journey they have to cross the Himalayan mountains to get to their over wintering grounds in India, many die from fatigue, hunger and predation from birds such as eagles. They stay at Tal Chapper up to the month of March. Every year their numbers varies between 1500-2000.

Basic facilities

The basic facilities are important for development in any area. There are also other facilities in this area. That concern with wide range of activities like education, medical, transportation, communication, marketing etc. The actual development of the area means to provide the basic facilities to the people without disturb the environment. The basic facilities in the area are not so good due to adverse condition. Tal Chhappar is the most populated desert area and there are many kinds of basic facilities.

Roads and railways network is not good there because of deposits and shifting of sand dunes. Although the first railway line in this area was constructed in 1909 from Degana to Sujangarh. It is directly connected to Delhi and Jodhpur. National Highway 65 passes through it. Rajasthan Mega Highway also passes from the town which connects it to Ajmer and Hanumangarh. The town is directly connected via roads to Bikaner, Churu and Jodhpur

etc. The direct bus service is available for Delhi, Surat, Ahemdabad, Udaipur, Jodhpur, Jaipur, Kota, Ajmer, Bikaner, Ganganagar, Hisaar, Roorkee, Haridwar, Indore, Ludhiana (Punjab) and many other near and far towns. The availability of the transportation is very accessible. It is 210 km from Jaipur, 85 km from Churu & about 132 km from Bikaner. The nearest Airport is Sanganer (Jaipur) which is at a distance of 215 km from Chhappar.

Medical facilities are very limited in the Chhappar town. There are only two hospitals in this town.

1. Govind Ram Periwal Govt. Hospital
2. Ganpati Hospital

On the other side there is not a single veterinary hospital in the town. During the medical emergency people had to go to Ratangarh and Sujangarh.

The educational scenario of the town is not good as well as district. Presently in the town there are ten schools -

1. Boys High Secondary School
2. Girls High Secondary school
3. Tola Ram Bhansali Bal vidya Mandir
4. Adarsh Vidya Mandir Secondary school
5. Adarsh Vidya mandir Primary School
6. Anuvrat Vidya Mandir
7. Shri Ram Bal Vidya Mandir
8. Tagore Public School
9. Marudhar sikshan Sansthan
10. Vivekanand Sickchan shansthan

There are also available two colleges-

1. Sona Devi Sethia Girls P.G. College (Girls) (sujangarh)
2. Sujala College

The town is connected with state electricity supply system. Almost all household have their own electric connection. Like other town of the state the fluctuation in the light is a common factor.

The rain water is the main source of drinking water which is available through wells. The water supply in the town is through pipe line which is connected to overhead tank. The water supply agency department is PHED. The ground water is also available in the depth of hardly 5 meter, so people can fetch water through a small underground well. Almost all families have these facilities.

There are four water ponds in the sanctuary-

1. Dungolao pond
2. Bhainsolao pond
3. Ganga Singh pond
4. Salim Ali pond

There are good sources of communication present in this town like telephones, mobiles, fax, internet etc. The town is connected with Sujangarh telephone exchange, so that all telecommunication facilities are available in the town.⁶

Many people are businessman in Chhappar town. Chhappar and Sujangarh are popular for its businessman community all over in India. There are so many business minded families in the town. Almost all types of required items are available in the market. There are so many shops in the market from where we can buy anything. The things made here are very famous.

Following Entertainment facilities are also available in Chhappar town

1. Theatre
2. Moon Light Theatre (Sujangarh)
3. Dareem Light Theatre (Sujangaeh)
4. Stadium
5. Vrindavan stadium
6. Guest House

There are many guest houses in the Chhappar city-

1. Maheshwari Bhawan
2. Mundhara Guest House
3. Kalu Kalyan Kendre
4. Oswal Bhawan
5. Jajoo Bhawan
6. Somani Guest House
7. Lakhotia Guest House
8. Periwal Dharamshala
9. Brahaman Lokhitkarinui Shabha

Other facilities

Many other facilities also present in Chhappar town like Vrindavan stadium and Shri Ram gaushala.

Problems

There are many problems found in Tal Chhappar sanctuary. Since the set of Tal Chhappar sanctuary, adequate attention minimizes or to solve the problems has not been paid. For example proper staff to look after this sanctuary, availability of sufficient water, providing fodders and protection of the sanctuary from encroachment etc. therefore, to solve these problems will be discussed separately. The main problems of the sanctuary area are as follows.

Grazing

During harvesting of crops, there is no food for starry cattles roaming around sanctuary, so they rush to the sanctuary area thereby increasing a heavy pressure on the sanctuary. This needs to be stopped.

Boundary wall

At present boundary wall is not available due to which stray dogs enter in to the sanctuary and may damage the Black bucks either by killing or creating injury. Similarly other animals from the outside enter in to the sanctuary and use the water and fodder available here which is already very short. Unwanted persons enter in to sanctuary and create harm to it.

P. Juliflora plant

Growing of P. Juliflora at large scale in the sanctuary is a serious problem for wild animals. The specified grasses or local grasses which are primary food for animals are reducing day by day and P. Juliflora is increasing due to which, animals can't walk or run freely. This P. Juliflora also gives shelter to stray dog which cause harm to black bucks.

Lack of permanent water source

The main source of water is only rain, being a desert area the rainfall is very less i.e. hardly an annual average 330 mm. It is not sufficient for the whole year. The rainy water is stored naturally in four Talabs situated in the sanctuary named as Bhainsolao talab, Dunglao talab, Salim ali talab and Maharaja ganga singh talab. Out of these, two are situated in the centre and two are on the boundary of the sanctuary. The rainy water stored in these talab.

This water is hardly sufficient for two or three months and remaining period of the year faces several problems of water. So for the management of the sanctuary the only source of water other than rains is PHED water and they have to utilize this available water in a proper and well managed system during acute summer.

Lack of proper fodder

There are no trees which produce fodder for Black bucks. There are insufficient shrubs and grasses. The main available fodder is Mothia, Dhob and Sewan grasses in rainy season. This is not sufficient for whole year.

Poaching

In earlier times hunting of Black buck in Tal Chhappar sanctuary was the prerogative of erstwhile rulers of Bikaner state. The sanctuary has now been declared a wildlife protection area and now sanctuary area has come under the provision of wild life (Protection) Act 1972. As a result poaching has been totally banned in the area. Still poaching is a problem due to unavailability of boundary wall.

Availability of salt mine

Many salt panes are available in vicinity of the sanctuary. Mining operations are carried out in hazardous manner which eventually destroy the grace of the sanctuary and other problems are also created.

Road and vehicles

A state road, "Chhappar-Sujangarh" is passing through this sanctuary and no other road are available. Only kacha tracks available are used for inspection, patrolling and viewing fauna of the sanctuary. There is an unmanaged trip of vehicles. This disturbed the pace and ecology of sanctuary. A separate vehicle for the proper management of this sanctuary is not available which is very essential.

Lack of dense forest

Dense forests are not found in Tal Chhappar. Most of birds and animal species always like dense forest for their habitat for much availability of food and safety point of view. There is less biodiversity due lack dense forest.

Lack of security staff

The present available staff of various categories looking after the sanctuary is not sufficient. To overcome the administrative problem, sufficient staff should be provided.

Suggestions

Development of infrastructural facilities

There is need of revamping infrastructural facilities in the sanctuary for enhancing tourism growth and developing it as ecotourism site. Improvement in road transport, accommodation facilities, entertainment facilities etc is required. New management plan is to be prepared for the sanctuary. New sites especially for bird watching need to be developed.

Permanent water source should be developed

This area falls under Thar Desert. The average rainfall is very less. That is hardly available for two or three months. The water is insufficient in terms of quantity through out the year which should be available in the sanctuary because the growth of wildlife depend upon drinking water apart from this the

whole area is saline are rainy water which is accumulated in nadies also become saline after a short period. Under grounds water is also not pale table. So that the water management is must for improvement the sanctuary. The water management can be done by following way.

Desalination of existing water ponds

There are four 'Talabs' in the sanctuary area at different points. Desalination of all the four "Talabs" is proposed banks of these Talabs will be pitched by dry stone and some trenching works for catchments area will also be done.

Development of catchment's area

The catchment's area of the sanctuary has been distributed for the last 12-15 year because of excessive mining activities and salt pan quarries so it is required to divert the water from catchments area of Gopalpura site towards the sanctuary and ultimately it will be diverted to the adjoining Chhappar and Charwas ponds.

Boundary wall should be construction around the sanctuary

The problem of grazing will be controlled by controlled by construction of boundary wall, trench fencing and by intensive patrolling of the surrounding area

Chhappar - Sujangarh road should be removed from sanctuary

The forest department of Tal Chhappar sanctuary has send a proposal to the government for removing Chhappar-Sujangarh road from the sanctuary area. Because of this every year few blackbuck has been died in road accident.

Habitats should be developed

It includes improvement of food, water and shelter to provide better living conditions to the wild life. Through intensive plantations, sowing of different grass seeds and rain water harvesting, it can be achieved. The environmental management deals with the natural resources, their useful association and optimum use of these resources for betterment of its components i.e. human and wildlife. The vegetative cover of the sanctuary area should be improved grass seedling, eradication of *P.juliflora* and soil and water conservation activities. Other important plants should be developed and a environmental public awareness programmed should be start.

Extra fodder should be arranged

Since this area falls in the desert, food becomes the most important but there is limited food is available especially during summer. In this area famine is a regular feature. This create acute problem of food. Therefore it becomes very essential to full fill the food requirement by providing food and fodder from outside. To feed them properly at least 200 quintal of dry, fodder be made available every year and particularly during pinch period. For this purpose Khejari, Lung, Pala, Moth leaves etc. can be made available with in the sanctuary area especially during the months from April to July.

This is very essential and is being carried out here for the last ten to eleven years. This has brought very good result and wild life could be saved to some extent. This area is famous for Black buck and the

habitat is suitable for this species but due to insufficient of food and water. The population of black's bucks is less In this area there shrubs like Ker, Ber, Lana, Bui etc. and these animals are browser. These shrubs are very useful for them. This food material works as antibiotics and helpful in preventing diseases.

Animal hunting should be strictly prohibited

Wild life hunting is strictly banned under wild life act 1972 No any case has been registered against animal hunting in the sanctuary for last few years. But according to local public few peoples of backward classes and others around the sanctuary occasionally hunt the Black buck for the sanctuary occasionally hunt the blackbuck for their delicious meat. It should be prohibited by public awareness.

Public awareness

To share the wild life activities with public and make them environment and wildlife conscious different activities should be promote like organizing public awareness camps, distribution of pamphlets and posters on wild life conservation, to form a wild life conservation committee in the surrounding villages etc.

Harmful plants like P.juliflora should be destroyed

There are large numbers of P.juliflora plants in the sanctuary area and is the problem for fauna & flora of sanctuary. Other flora under the shadow of P.juliflora cannot survive because of the chemical released from leaf of P.Juliflora. The main fauna of the sanctuary is the Black buck like to live in open ground, not in dense forest. In this way P.juliflora plants are problem for the sanctuary.

A large numbers of P.juliflora plants are destroying every year by the forest department and it is suggested that remaining plants of P.juliflora will be removed from sanctuary as soon as possible. If the P.juliflora will not eradicate soon at this stage, it may spoil the whole habitat.

Security management

We know that the most of the part of the sanctuary is open ground and covered with fencing. A very little part of the sanctuary is covered with boundary wall. The domestic animistic animals like cow, buffalo etc. entered in the sanctuary for grazing that will be strictly prohibited. This will be done by cautiousness of guards.

Street Dogs are the main problem of the sanctuary. They entered in the sanctuary through loose fencing and harm to Blackbucks. For saving Blackbuck from the danger of street dogs, the

boundary wall will be constructed around the sanctuary.

Conclusion

The above research paper studied the eco-tourism potential of Tal Chhappar sanctuary. This area is having diverse fauna and flora which make it a very attractive place for tourism. The ecology gives natural beauty to the area. This sanctuary is famous for its population of Black Bucks. So the ecological setting make it a very important eco-tourism site. There is regular flow of domestic as well as foreign tourists but still due to some constraints there number is not good. So it is needed to develop the required infrastructure so that sanctuary can be developed as a eco-tourist site.

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