

Biocultural Community Protocol at Cholistan Desert

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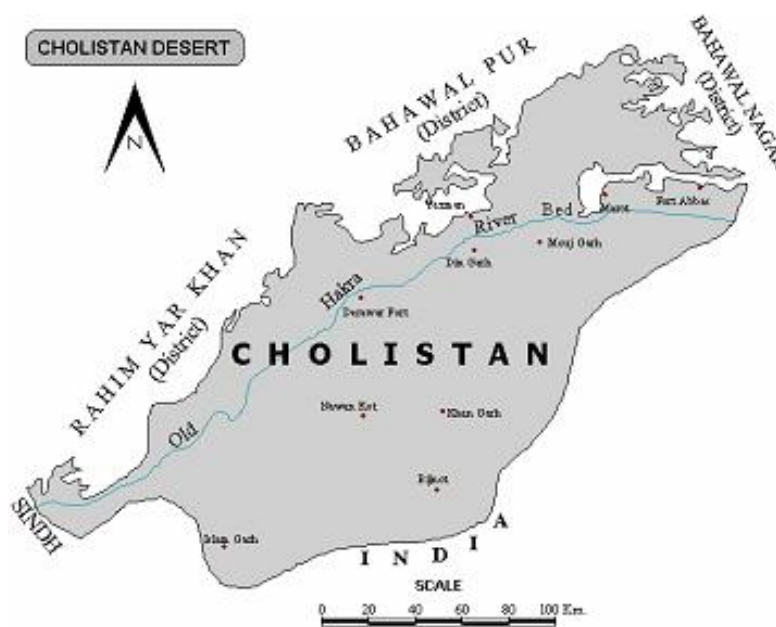
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Introduction

The Cholistan is a part of the ancient Hakra civilization (Hakra River), one of the oldest civilizations of the Aryan settlers in the Indian subcontinent. It being a part of southern Punjab, Cholistan is one of the largest deserts of the country and remained a part of the Great Indian Desert. The total area of Cholistan is 66,55,360 acres with a length of 480 km and 32-192 km (16,000 km²) in width with a temperature range of 6-50°C. The largest area of Cholistan is present in Bahawalpur which is 40,28,217 acres, rest lies in other two districts Bahawalnagar (10,11,200 acres) and Rahim Yar Khan (16,15,965 acres) (**Map 1**). The estimated camel population in total Cholistan is around 26,181 numbers (**ACO, 2006**). The ground water for these populations is mostly brackish. The inhabitants of Cholistan are called Rohi and the main tribe of the camel herders is Marecha. The camel that belongs to Marecha tribe is known as Marecha breed. The other tribe which usual resides in the peripheries of the desert adjoining to irrigated lands is called Malgadey (Malghadey). They usually keep the Brela camel. Cholistan is the homeland of many precious animal genetic resources i.e. camel, cattle, sheep and goat. Most of the Cholistan is covered with wide range of nutritious and drought tolerant species of vegetation. Deep in desert the camel mostly rely on Khar, Lana, Jand and Kareer, while in the peripheries mostly Kikar is available along the water courses and road side.

The Cholistan desert rangelands are monsoonal and the forage production in such lands is mainly governed by the monsoon rains in relation to the time, amount and frequency. The health and production status of animals depends upon the breed, birth and mortality rates and all other parameters which depend upon the availability of vegetation. During the normal rainfall years (i.e. when average rainfall is 100-200 mm), the amount of green forage remains low and livestock do not have enough fodder. However, when there are rains above normal (i.e. 250 mm or more), large amount of fodder is available and the animals become healthy (**Ali et al. 2009**). When there is successive occurrence of drought, forage production is severely hampered coupled with overgrazing and virtually no vegetation is left for livestock feeding.

To access the biocultural protocol in the Cholistan desert among the Rohi people, a meeting was planned by the Camel Association of Pakistan (CAP) last month on **March 28, 2012** following the inaugural meeting of the CAP at Dept of Livestock Management, University of Agriculture, Faisalabad. This visit was lead by Dr Abdul Raziq Kakar, the General Secretary of the CAP along with some graduate students of the Dept.



Map of Cholistan (Adopted from Ali et al. 2009)

The purpose of this visit was to conduct a meeting of Cholistani people to collect information about the culture and livestock of the Cholistan region and to visit the Rohi desert to practically observe its flora and fauna. The meeting was scheduled on **March 29, 2012** (Thu) with Rohi people in Lataska Hotel Conference room. The Managing Director of Cholistan Development Authority (CDA), Ch Muhammad Aslam was kind enough to grace this meeting by his presence. The arrangements were made by a team lead by Rao Abdul Qadeer Khan, a Livestock Consultant and Rohi Breeder at Bahawalpur. Many audio visuals were prepared for the farmers to collect the right type of information needed on this subject.



Figure 1. The Biocultural Community Protocol (BCP) Workshop in progress



Figure 2. Biocultural Community Protocol Agenda

The main agenda of the meeting was to collect information from the Rohi Camel Herders on the following topics:

- Evolution, history, culture and daily life of the Rohi people.
- Local laws about livestock.
- Breeds of Livestock kept by people of Rohi.
- Local knowledge of Rohi people about Livestock.
- Recent difficulties of Rohi people.

The introductory Lecture was given by Dr Abdul Raziq, where he explained the purpose of this meeting that was to promote sharing of knowledge with local people and to create awareness among them about their assets. List of names and contact numbers of participants from Cholistan was prepared. After having discussion with the people of Cholistan, the data collected is summarized in the ensuing lines.



Figure 3. MD CDA addressing the Rohi people



Figure 4. Conference organizers photographed with Rohi herders

Local Tribes and their Pride

There are about 21 representative tribes that are local people of Cholistan, living there since 300-400 years. They include: Baloch, Bhatti, Bheel, Bheem, Chadhar, Daha, Jehal, Joeyah, Kalyar, Katwal, Laar, Langah, Layal, Mahaar, Marral, Panwari, Qureshi, Samaa, Sela, Shiekh and Solgi, etc. Their further details, livestock possession and livestock keeping history will also be a point of interest at a later stage.

Livestock Wealth of the Cholistan

Camel, cattle and goat are the major livestock kept by Rohi people. They graze them in the Cholistan, get milk and meat and earn their livelihood. Their livestock is their wealth and they keep their lives rolling because of their bread and butter earned from their animal's wealth. Their life style is their livestock. Last census has indicated their livestock wealth as indicated in the following Table.

Table 1. Total No of heads of various Species in Districts of Cholistan.

District	Cattle	Buffalo	Sheep	Goat	Camel	Others (Horse, Mules, Asses)
Bahawalpur	550476	609254	160027	1044722	3107	47683
Bahawalnagar	543536	758061	195810	957261	4677	88167
Rahimyar Khan	519537	819854	137324	1488299	7069	74732
Cholistan Distt	567510	8923	356024	257285	11328	7457
Total	2181059	2196092	849185	3747567	26181	218039

Source (ACO, 2006)

Camel Rearing

Two breeds of camels are found in Cholistan. One is **Marecha** (or **Mehra**) camel which is a local breed and is kept by local Cholistani people. The camel is one of the typical and the best adopted animals of

the desert, capable of enduring thirst and hunger for days and is the most patient of land animals. For desert dwellers of Pakistani Cholistan, it is a beloved companion, a source of milk and meat, transport facility provider and a racing/dancing animal, thus, playing an important role in the socioeconomic uplift of the local community. Camels of Marecha breed are mainly used for riding and load carrying but may be trained for dancing or racing.

According to Cholistani people Marecha mean beauty so the name Marecha is due to the fact that it is a beautiful animal. Marecha is strong breed and is kept for riding and racing because it runs very smoothly in the desert. Unlike Brela breed, it is not kept for milk and meat. Its body weight (640 kg) is lesser than Brela (680 kg) and it has a lot of hairs around nasal cavity, ear and have longer eyelids to protect from sand. It is more resistant to heat and drought than Brela breed. Different colors of Marecha are black, white (*bagga*), green (*sawa*), red (*lal or ratta*), blue (*neela*). The breeding season of these camels in Dec-Feb (*Poh, Maagh, Phagan & Chetar*). Gestation period is 12 months.



Figure 5. Marecha Camel herd at Toba Kikri

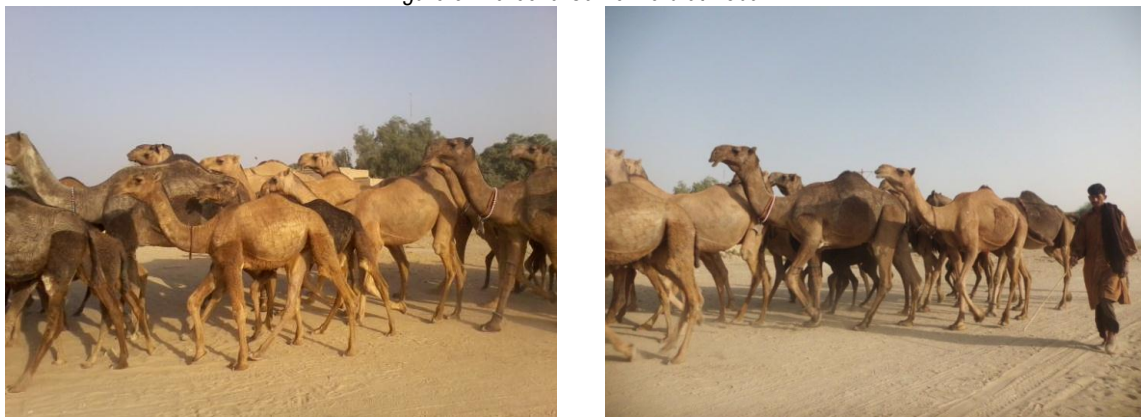


Figure 6. Brela Camel herd at Mela Channan Peer

Brela is another heavy and milch breed of camel famous for milk production. This breed is also suitable for draught purpose, though comparatively slow due to heavy body. Camel milk in various processed forms is an esteemed dietary item. The Brela she camel can yield up to 10-15 liters of milk daily which is very important for the nomads of Cholistan as supplement of food especially during the drought years. Camel milk on an average consists of 5.1% lactose, 4.8% fat, 3.8% proteins and 0.9% ash (**Khaskheli**

et al. 2005). Camel milk is high in vitamin C and can be used for the treatment of many diseases, including tuberculosis and dropsy, etc. (Kohler-Rollefson, 2004).

The Brela is heavier than Marecha and is relatively docile animal. Brela breed which is not kept by local Rohi people but people from other areas e.g. Sahiwal, Jhang keep Brela breed and come seasonally in the Cholistan in winter and then move back in the start of summer. These people are called “Malgadey”.

According to some reports, Malghada people have migrated from Ferozpur, India at the time of independence. At this time 1000-2000 families having a population of 14000-15000 Brela camels are residing in the Cholistan area. Brela is preferred by them for its milk and meat. Different available colors of Brela camel are *sawa*, *ratta*, *kala* and *neela*. Mostly seen color is *neela*. Milk of camel is sold to processing companies at the price of Rs. 25-40 based on fat percentage.

Under such rangeland conditions, camels are best suited than any other type of livestock for making best use of desert areas. Their grazing behaviour is ideally adapted to scarce and patchy vegetation and they can walk long distances between the bites. They usually do not destroy their habitat; however, when confined to one place, they may over graze the area. Because camels can go for many days without drinking, they can graze over areas very far from water resources, so can use very remote pastures (Gauthier-Pilters, 1979). In Cholistan, whenever the camel herds move from one rangeland to another, they graze and browse under the watchful eyes of shepherd for the first three months and then they are left alone for the further nine months of the year, hence they do not need watch and ward and they do not leave the area and their herds. The food intake of camels in relationship to their body weight is low. They require only about 5–10 kg of dry matter to perform a day’s work of carrying 120 kg over 30 km.

Some common plants and herbs available for grazing and browsing at Keekri and Soho Tobas deep in the desert were as follow: Toba Soho was dry and there was some water in the Toba Keekri. Different animals like goat, donkeys and camels were drinking water from Toba.

Trees: <u>Common Name</u>	<u>Botanical Name</u>
Akan	<i>Termerix indica</i>
Keekar	<i>Acacia nilotica</i>
Beri	<i>Zizyphus jujuba</i>
Kachnar	<i>Bauhinia vareigata</i>
Herbs:	
Khar	<i>Haloxylon recurvum</i>
Ak	<i>Calotropis gigantea</i>
Lana	<i>Saueda fruticosa</i>
Gandil	<i>Eluesine flagellifera</i>

It is somewhat difficult to get butter fat separated from camel’s milk due to minute fat particles/globules and their homogeneous presence in the milk. But now a few methods have been devised to separate the butter. Earlier studies indicated these methods but they are seldom employed because of less appreciation of the milk and its by-products and lack of livestock extension activities (Qureshi, 1986). Since camel skin does not make good leather, camel hide is used for making suitcases as well as for large skin receptacles “Kuppas” used for storing oils and ghee. Camels play an important role in the defence of our country as they are needed for carrying defence equipments and ammunition from one part of the desert to another along the desert border.

Sheep and Goat

Different breeds of sheep are also found in the Cholistan which are Butchi (Gulli), Sipli, Khadali. Gulli is more preferred because it is more resistant to heat. It has better growth rate. It is short weight with small height and small ears so easy to graze because small ears do not interfere while grazing. The meat of Gulli is tasty and wool is soft but very strong. Sipli has large ears than Gulli and it is found in Bahawalnagar region. Khadali is also milk and meat purpose breed.

The major breed of goat found in Cholistan is Jattal. It has curved horns, long hairs, small height and more resistant to heat and drought. Long hairs reflect heat. It is preferred because it gives two calving per year and also for its better hair production. Colors are black and blue but mostly black is observed.

Cholistani Cattle

Cholistani cattle also called *Roheli* is the major breed of cattle found in Cholistan. Average milk production is 6-8 kg. Breeding season is whole the year and calving season is mostly Jan-Mar. Lactation period is 10 months. These animals are kept only on grazing in Cholistan desert and water supply is from Tobas.

Ethno-Veterinary Treatment

Rohi people have lot of knowledge about the ethno-veterinary treatments. This Indigenous Knowledge (IK) is also a part of their valuable wealth. Ethnoveterinary medicine (EVM) refers to holistic and interdisciplinary study of traditional knowledge, skills, methods, practices and folk beliefs of the people about the health care, healthful husbandry and production of livestock (McCorkle, 1986). The Cholistan desert dwellers (called *Rohelay*), that are mobile livestock keepers, use herbs and forbs as therapeutic agents and medicament for the well being of their livestock, which they are able to procure easily in the pasturage of wilderness. Even today, despite earnest efforts to transform desert into cultivable land, Cholistan desert is rich in indigenous herbal resources that offer a great scope for ethno-botanical and ethno-pharmacological studies (Raza et al. 2011). Khan (2009) has presented a detailed inventory of the desert plants used in ethnoveterinary treatment by local livestock herders, some of them seen by the authors during this excursion are summarized below.

Table 2: Some plants of ethno-veterinary importance found in Cholistan, Pakistan.

Sr. No	Botanical names	Vernacular names	Ethno-veterinary medicinal usage
1	<i>Argemone mexicana</i> Linn	Peela dhatoora, Satianasee	Pale milk of the plant and oil from seeds are applied on chronic ulcerous wounds. Oil from seeds is used as an anthelmintic in animals. Juice of leaves is given to animals suffering from malarial fever.
2	<i>Calotropis procera</i> (Willd.) R.Br.	Ak	Milky latex of plant is applied on inflamed areas to relieve inflammation and on snakebite to neutralize poison. The leaves and flowers are crushed and the paste is mixed with honey to cure flatulence, anorexia, indigestion and intestinal worm infestation. The root powder is mixed with butter and this ointment is applied to rabid dog bite. This ointment is also applied on the paralyzed limbs.
3	<i>Capparis decidua</i>	Kar, Kary	Fruit is used to cure diarrhea in cattle and goats. Bark powder is

	(Forsk) Edgew (C. aphylla Roxb)		used in cases of anorexia, indigestion and rheumatism
4	Cassia senna Linn.	Sanna makki	Powder of dried leaves and pods is used as cathartic in cases of impaction. Also used in rheumatism, skin diseases and against intestinal worms.
5	Citrullus colocynthis Schard	Tuma	Ash of dried burnt plant is mixed in honey and is used to treat wounds in animals. Mashed vine is used as anthelmintic in camel. Roots are used as purgative in ascities, jaundice and rheumatism. Dried fruit is ground into powder and then mixed with common salt and the preparation is given to cattle and camel in cases of rheumatism.
6	Zizypus nummularia W.& A.	Kaken Ber, Jangra, Badari,	Paste of leaves is used to cure itch and chronic ulcerous wounds in animals.
7	Pedaliium murex Linn.	Farid booti	Its fruit is used as a diuretic in cattle and goats.

Source: Adopted from Khan, (2009)



Figure 7. Gathering IK from camel herders about treatment and milk use.

IK applied by Rohi People

Some of the ethno-veterinary treatments practiced by the Rohi people are summarized below: The authors could collect only for some diseases listed below. Return visits are expected to yield more information on this interesting subject.

Table 3. Common diseases and their treatments as told by local Rohelas.

Disease	EVT Practices
MASTITIS	kali mirch ¼ kg + kala zeera 50 gm + desi ghee ¼ kg
GASSA (in Camel)	Gandi boti is best treatment. Ak is also used. Boiled masar + Lal Mirch.
THOR	affected place is rubbed with the Theekri (solid piece of soil).

Deep in the Desert

It was learned while visiting the deep Cholistan next day (March 30, 2012) that each Toba is associated with one tribe and it surrounds specific territory. New Toba is not allowed in that territory. Cholistan people also pay tax (*Trenee*) to the government for grazing their animals, their rates are: Rs 3 per cattle, Rs 5 per camel, Rs 2 per sheep/goat per month.

Our group enjoyed visiting the Chanan Peer Mela which is one of the most concentrated area for camels in Cholistan. Lot of camel games, like racing, dance and different gaits are special interest to the public. It's also a chance for the farmers for camel buying and selling activity. Livestock Dept is always there with its mobile clinic to help the camel herders and breeders.

Herds of Brela camel were moving from that area. The herds were approached, camels observed from close view and talked to camel owners. It was nice to visit the camels at dera of Sardar Ayub Baloch (Chak # 97). Lot of knowledge exchange was done with their oldest man of the tribe Sardar Natho Khan who was wadera (elder) of Malghada people. He shared very fruitful information and his life-long experiences giving us a feel that these old people are living books and walking encyclopedia of Rohi with lot of indigenous knowledge (IK) and wisdom.

Acknowledgements

The authors are grateful to the respectable MD, CDA, Bahawalpur and his staff for the help extended in organizing meeting on Biocultural Community Protocol with the Rohi people and facilitation provided to cruise through the desert.

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