

Pastoralists & Rangelands Awards 2021



PROFILE OF Awardees



Joint International Grassland and Rangeland Congress - Kenya 2021



Foreword

27 October 2021

The **Pastoralists Awards 2021** have been organised in South Asia (SA) and the **Rangelands Awards 2021** in Central Asia and Mongolia (CAM) through an announcement of competitions by the Regional IYRP Support Group of South Asia (RISG-SA) and the Regional IYRP Support Group of Central Asia and Mongolia (RISG-CAM). Based on a total of 21 entries received from five countries, multi-stakeholder committees in each region selected a total of 14 pastoralists / community organisations to receive awards this year. These organisations / livestock keepers are contributing to regeneration of rangelands and common grazing lands or maintaining local livestock breeds for sustainable livelihoods and healthy ecosystems. Their profiles are presented in this book.

In India, the concept of giving awards to recognise the role of pastoralists / livestock keepers was initiated in 2009 by SEVA in association with the LIFE (Local Livestock for Empowerment) Network, the Honeybee Network and the National Bureau of Animal Genetic Resources, and was supported by the National Biodiversity Authority of India. It led to greater awareness of the importance of local livestock breeds and to the dissemination of best practices in livestock keeping in India. The concept is now being promoted in other countries and regions. This year, SEVA jointly with the RISG-SA arranged for "Pastoralists' Awards 2021" for SA. These awards are supported by the Centre for Pastoralism (CfP), SAHJEEVAN NGO and Indigenous Livestock Society-India (ILSI).

The awards for "Sustainable Pasture Management and Conserving Rangelands 2021" have been organised by the National Federation of Pasture User Groups of Mongolia (NFPUG); Environment and Development Association JASIL; Ministry of Food, Agriculture and Light Industry, Mongolia (MoFALI); Central Asia Pastoral Alliance (CAPA); RISG_CAM; and the Mongolian Working Group on "Territories of Life" for Natural Resource Management Communities, Pasture User Groups (PUGs) and Forest User Groups (FUGs) for balancing ecological capacity of pasture with animal numbers and sound use of the rangelands.

These two sets of awards in 2021 are arranged in recognition of the importance of designating an International Year for Rangelands and Pastoralists (IYRP) in 2026. We are happy to know that the ceremony to distribute awards to the winners is being held in the Joint International Grassland and Rangeland Congress (IGC/IRC) in Kenya and has been slated for 27th October 2021.

It's a matter of great satisfaction that 14 awardees are being honoured in this event. We wish all the awardees a big success in their endeavours and in raising awareness on the theme of sustainable use of grassland / rangeland resources and indigenous breeds for improved livelihoods. We wish both the awardees and the organisers further innovative opportunities to play a greater role in further raising awareness on the importance of rangelands, local breeds and traditional-knowledge-based practices for holistic development of their region while sustaining their livelihoods.

A handwritten signature in black ink that reads 'Ray Smith'.

IGC Chair: Ray Smith

A handwritten signature in black ink that reads 'Dana Kelly'.

IRC Chair: Dana Kelly

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PROFILE OF AWARDEES





SEVA

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On 1 March 2019, the UN General Assembly declared 2021–2030 to be the UN Decade on Ecosystem Restoration. It is also aligning with the last decade of the Sustainable Development Goals to end poverty, combat climate change and prevent loss of biodiversity. Ecosystems support all life on earth. The healthier our ecosystems are, the healthier the planet - and its people. In order to promote participatory Restoration of Eco System for the UN Decade of 2021 – 2030, SEVA in association with members of Regional Support Group for Designation of International Year of Rangelands and Pastoralists for 2026 (RISG-South Asia NGOs, organisations, community groups, volunteers) organised “Pastoralists Awards 2021” to recognise outstanding pastoralists or communities who directly or indirectly responsible for their traditional wisdom, keepers of local breeds and regeneration of range lands. Award prize of Rs. 10,000/- and certificate will be distributed to 11 Awardees on 27 Oct. 2021 during Joint International Grass Land and Range Land Congress, Kenya.

We are thankful to Centre for Pastoralism, Sahjeevan, Bhuj, Gujarat and ILSI for extending financial support for organising the “Pastoralists Awards 2021” ceremony, RISG South Asia volunteers for documenting livestock keepers / pastoralists and communities, national level selection committee comprising Dr. Kamal Kishore, Dr. Arun Dixit, Dr. Purnendu Kavoori and Dr. D.K.Sadana in evaluation of entries for awards and Joint International Grass Land and Range Land Congress, Kenya for arranging logistics for this virtual event during the Congress.

P.Vivekanandan
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Management of Oran Land Adaval ki Devbani by village community in Rajasthan



Name of Pastoralist/ community :	Shri Hariom Das
Address & contact phone number :	Adaval ki Devbani, Village Sirawas (Meena ki Dhani), P.O. Siliserh, Dist. Alwar -301002 (Rajasthan), Mobile : 8955293413
Land area owned and livestock grazing :	Common land of 50 ha is maintained by the villages. This place is called as <i>Adaval ki Devbani</i> . This area is grazed by 600 buffaloes & cows, 700 sheep, and 700 goats that directly depend on the Oran.

Species of fodder available in Oran land

Layer 01 Tall Trees	Edible fruits like Goolar, Apol, Khajoor, Fodder like Deepul, Dhonk, Salar, Papdi / Perrenial springs emerge from the roots of Goolar trees
Layer 02 Small Trees	Edible fruits like Ber, Lisoda, Medicinal trees like Kadakher, Jaal, Baansa, Barabara
Layer 03 Shrubs and bushes	Medicinal plants like Aldusta, Jhaad ber, Chappun, Katganger, Dhaulan, Dansar
Layer 04 Creepers	Bilao Kand, Amar Bel (wild bitter gourd), Ganger
Layer 05 Ground covers and grasss	Guan, Surval Maroda, Kurad, Chhannad, Doob, Medicinal herbs like Sadahari, Barbuta



Management of Oran land



Shri Hariom Das, who lives here in the Oran forest receives gifts and food from the community and plays a vital role in the preservation of the Oran. He is a medium for conservation and reverence amongst the communities. Samiti The Adaval Oran is the driving force of our livelihoods. We are all aware that if we need anything, we take it from there. Our animals graze there. We understand that if we destroy the Oran, our lives will be compromised, and that is why we organize through the Samiti [village organizing body]. We consider it our duty to protect and conserve the Oran.

Devbani also serves as a socio-cultural centre for the community as it unifies people religiously, culturally and socially while providing a forum for village level discussions, festivals and other social events. An annual Mela (festival) is organized in the Oran in the month of April in conjunction with Vaishakhi Purina. The community acknowledges the presence of the perennial spring that flows through the Oran and takes extensive measures to conserve it. The tradition known as Chitawal (feeding birds) and feeding of aquatic species like fish and tortoise are examples of interspecies care. Several important tree species such as kadam (*Neolamarckia cadamba*), bargad (*Ficus benghalensis*), neem (*Azadirachta indica*), peepal (*Ficus religiosa*) and gular (*Ficus glomerata*) can be found abundantly conserved in the Oran and have been assigned religious significance.

Role of community in the regeneration of Oran land

The Oran was experiencing severe degradation due to the large number of goats. In 2011, he with the support of KRAPAVIS, the community, in its yearly self-initiated committee meeting, decided to put a restriction on the number of goats that each villager could rear. Goats were reduced to 20 per cent of their original population and this significantly restored the Oran. 10 years ago, the water that originates from the spring at the Adaval Oran used to irrigate about 50 Bighas of land (a local land measurement). Some developments have entered the villages and had different impacts; for example, electrification of the villages has had the potter community switch to electric wheels, some communities have started growing water-consuming vegetables like onions as cash crops, and the local apothecary has been replaced by a western medicine doctor which has led to loss of trust within the community in the healing power of plant medicine. All of these changes have reduced and limited the community's connection with and dependence upon the Oran.

Adawal ki Devbani is located in the Sirawas village of Alwar district, about two kilometre from the village settlement. It is spread over a 50-hectare area of hilly topography. The soil found in the Oran is mainly of mountain and loamy type. There is a perennial spring that emerges from the Oran. Several communities, with a total population of about 1,000, live in proximity to the Oran in different hamlets in the Sirawas village and interact with the Orans for their sustenance and livelihoods. The Gujjars are the original inhabitants of the Sirawas village. The Meenas were



resettled here from a village nearby. There is also a community of Kumhars (potters). The Adaval Oran is the driving force of the livelihoods of local communities, their animals graze there, and the Orans provide a much-needed lifeline and safeguard the communities that are dependent on them, functioning as a vital infrastructure for resilience even in the face of the most extreme hardships. They have done so by allowing space for trans-species, religious and cultural solidarities. In contrast with state-led environmental conservation projects such as wildlife sanctuaries and citizen-

led environmental initiatives for greening and restoration, the Orans are where communities conserve the environment for their socio-material sustenance and as part of their religious beliefs. They become important gathering points for communal congregations, festivals and other social events, the performance of which is linked to agrarian rhythms and the continued commitment of the communities towards environmental conservation. Livestock grazing and non-timber forest products collected from the Oran provide a major source of livelihood for the community. Major products from the Oran include khajjur or date palm trees (*Phoenix* sp.), which yields both carbohydrate-rich fruits and leaves that can be used for making brooms and other products. Other important non-timber forest products from the Oran include kair (*Capparis decidua*) and ber (*Ziziphus mauritiana*). Water from the Oran's spring is used for irrigation by the community through a network of channels and pipelines that has been laid out from the spring. As much as 50 hectares of agricultural land is covered by this irrigation network, which is dependent on the Oran. The Oran land is also an important source for grazing of village livestock. The community also depends on the Oran for local construction materials such as thatch, wood, sand, and stone.

Status of pasture land after the intervention by community :

Through the support of organizations Krishi Avam Paristhitiki Vikas Sansthan (KRAPAVIS) and self-organizing community efforts, the community has been able to construct water harvesting structures like anicuts and check dams. The communities lead a very simple existence where they are only able to fulfil their basic needs of food clothing and shelter. They hope to find a way to co-exist with the changing ecological, social, and economic landscapes and create a secure world for their children. Today, the Oran has a dense vegetation pattern. The communities see themselves as a part of a larger ecosystem. The Gujjars pastoralists here believe that they are a blessed community to be so close to the natural world. Several ethno-botanical and ethno-veterinary traditions are associated with the Oran. Re-introduced several plants in through KRAPAVIS. Strong internal social control within Oran communities enables effective sanctions to be imposed on violators, reflecting their importance to resource users. Orans generally have a well-defined boundary and are governed through an egalitarian system. The communities participate in setting and enforcing rules and not just in their implementation. Normally, every Oran has a mechanism for conflict resolution along with simple and clear rules

for all, and there is significant commitment from all resource users (for example, they give annual contributions for maintenance).

Strong religious beliefs also support the Oran; for example, respect for the Devbani stems from strong faith in God. Orans are generally utilized and maintained in accordance with traditional, community-defined rules. For example, “a fallen log can be taken for a funeral pyre, but trees can never be felled”; “the water body can be used by livestock, but not so much for irrigation”; “herbs can be used for medicinal but not commercial purposes”; and so on. Maintenance of the Oran and its management is coordinated by the village community. The village community guards against the privatization of Oran land by any individuals and there are strict norms to prevent felling of trees and poaching.

Several ethno-botanical and ethno-veterinary traditions are associated with the Oran. The communities go to the local Vaid or apothecary who has extensive knowledge of the jadibootis or medicinal herbs and plants found in the Oran. Meena ki Dhani is a carrier of the ethno-veterinary traditions and Indigenous knowledge. He shows us around in the forest and introduces several plants in his extensive repertoire.

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Pasture land development in Kunao Chaur, Gohri Range, Pauri Garhwal, Uttarakhand

by Van Gujjar Tribal Yuva Sanghatan



Name of Pastoralist / community	:	Van Gujjars Community represented by Van Gujjar Tribal Yuva Sanghatan
Address & contact phone number	:	Gujjar KhattaKunaoChaur, Gohri Range, Post office: Ganga Bhogpur, PauriGarhwal district, Uttarakhand - 249306
Mobile	:	9927531392

The Van Gujjars are traditionally nomadic pastoralists whose lifestyle revolves around and who migrate in search for fodder for their indigenous buffaloes called Gojri. They reside across the



Terai-Bhabar and Siwalik region of Uttarakhand and Uttar Pradesh for most of winter and rainy season, but migrate either to the Bugyal in the Himalayas or along the Ganges floodplains in search for greener pastures in the summer months. The geographic extent of the Van Gujjars and their indigenous breed is prevalent across Dehradun, PauriGarhwal, TehriGarhwal, Haridwar, Nainital, Udhampur, Bijnore, Saharanpur, Uttarkashi, Rudraprayag districts. Till date, due to their nomadism, there is no accurate census of the Van Gujjars and their

livestock across both states, although their population is estimated around 70,000 people. Van Gujjar Tribal Yuva Sanghatan (Sanghatan) has been engaging in breed conservation of the indigenous Gojri buffalo and protecting its pastoral landscape. The present activity undertaken by the Sanghatan within KunaoChaur, a grassland within Gohri range, PauriGarhwal district, as a model site to throw light on how they utilize common property resources and contribute towards pasture land development.

Management of Pasture land

The present area for which a claim of common property resources is being claimed is called KunaoChaur, located in Gohri range, PauriGarhwal district. Geographically located close to Rishikesh, accessible from the Haridwar-Chilla road, it is a grassland symbolic of an ecotone that lies amidst the dense Sal forests of Rajaji National Park and the Ganges river ecosystem. Kunaochaur has been defined in certain documents of the local administration as a Van Gram for administrative purposes but is yet to be recognised as Community Forest Resource [CFR] right under the Forest Rights Act, 2006 [FRA]. The ownership of the land is yet to fall under the autonomous control of the Van Gujjar community as per FRA since the claims are still pending at the level of the SDLC. Furthermore, the Forest department is not keen to recognise these claims of the community in the said area as it exists within the Protected Area and are keen to



resettle the Van Gujjars from the landscape.

The total area of the grassland is remaining to be calculated accurately by the Van Gujjars themselves but as per the Management Plan of the Rajaji National Park this area has been calculated to be 546.6 hectares. However, the Sanghatan is in the process of conducting mapping of the pasture for the purposes of claiming CFR

right recognition under the FRA by highlighting its practices undertaken for land management in the region. In colloquial terms, the Van Gujjars refer to the area as Chaur, a grassland amidst the core region of the Rajaji National Park, Uttarakhand. While the neighbouring village has been classified as a Goth Khatta in several administrative documents and Working Plans of the Forest department, the area where the Van Gujjars reside and graze their buffaloes are yet to attain formal recognition of a common pasture land.

Geographical distribution of Pastures

Although traditionally the winter homestead of the Van Gujjars, this grassland is now utilised for grazing across both seasons, wherein the community undertakes several measures to keep it sustainable throughout the year. It is fed by three sroths that connect the Chilla canal to the Ganges as well as several ox bow lakes of the Ganges, which is utilised for the drinking and bathing of the livestock. The entire landscape is primarily used as a grazing land with no crops grown to ensure it is safeguarded for the livestock.

In the entire Chaur, a total of around 120 families reside within the pasture. The activity of grazing within the landscape has been undertaken continuously since five generations till date, with earliest documentary record amongst the Van Gujjars dating back to 1943. Nonetheless, the landscape was utilized by the Van Gujjars as their winter homestead since late 19th century.

Breed description & Number of buffaloes

The Gojri Buffaloes get their name from the Van Gujjar community itself who have reared and tended to them over the ages. While it was initially a lesser known population of livestock in the Himalayan region, which lacked recognition and evaluation for its production and performance, recently it has been characterised and registered as a distinct buffalo breed in Punjab and Himachal Pradesh. They have a medium built, proportionate body and thicker skin compared to other breeds in the region. Their physical appearance is a mix of black and brown coat and thick, long, brown hair. Calves have a light coloured skin during birth that becomes darker with age. They have straight and broad foreheads with the exception of a few animals whose foreheads are slightly convex in shape. The ears are medium to large in size and horizontal in position. The muzzle is black, and a white patch of hair is visible on the forehead in most animals irrespective of their black or brown coats. The horns are heavy, medium sized with a curved orientation, moving backwards and then towards the front to form a loop. The older the buffalo the more curly and twisted its horns get. Temperamentally, they are docile animals but often if threatened can attack with its horns. The udder is round but well placed with cylindrical teats pointing towards the ground. The milk vein is less prominent but visible. The tail is thin and fine, mostly reaching up to the hock joint and possessed of a grey switch in majority of the population. The Gojri buffalo is said to have higher milk productivity in comparison with similar buffalo breeds



such as Murrah and Nili Ravi.

The continual residence in KunaoChaur coupled with restrictions on access have reduced the average herd size for Van Gujjars family residing therein. The entire landscape rears approximately 1528 indigenous Gojri buffaloes reside and graze across the length and breadth of the pasture, approximately 10-15 buffaloes per family. The indigenous Gojri breed recognised in Monograph No 82 of the National Bureau for

Animal Genetic Resources reports, traditionally a wild forest buffalo which was tamed by the community over subsequent generations. However, this breed is still awaiting recognition within the state of Uttarakhand to ensure Van Gujjars can claim tangible breed conservation and protection benefits from the state.

Ecological attributes of Gojri buffalo

This indigenous Gojri buffalo is accustomed to rotational grazing in and around the pasture and forests for its survival and is unable to cope with stall feeding of fodder and feed. The practise of rotational grazing notably practised by the buffaloes not only ensures creation of natural feed bunks on different slopes of the pasture that allows movement from one slope to the other in the subsequent week of grazing and foraging but also ensures there is uniform distribution of excreta through movement while browsing. Such a form of grazing also plays an important role in the dispersal and germination of seeds and in linking different ecotones, thereby increasing plant biodiversity in the region. Hence, the Van Gujjars who are attuned to mould their indigenous pastoral livelihood based on the demands of the breed by undertaking lopping of certain trees and taming the buffalo for undertaking grazing herein.

Availability of grass species and trees for lopping

The number of fodder species available in the pasture include seer grass, khad (grass), kai, Babbad, Dubada and other wetland areas within the chaur. Furthermore, the community members engage in lopping of several trees whose leaves are useful fodder which include Gutel, Bakli/Toun, Sein, Kusum, Bhimal, Kharbat, Bheda, Sandhan, Krengal, Maldhan, Rehni, Malotus, Sho, Khatiammi, Gola, Bel seeds, Sal, etc. Lopping undertaken by the Van Gujjars is an exercise to regenerate tree species seasonally undertaken in winters to ensure there is a freshness and easy availability of fodder within the forests without adversely affecting the biodiversity of the habitat. The exercise is undertaken in a scientific manner to ensure there is prevention of overgrazing and degradation of the forest habitat.

Traditional Rules and Social Institution

Based on the social structure of the Van Gujjars, the members amidst the Chaur have a well-defined role with the animals – with the adults walking with the big buffaloes and horses, while children graze the younger calves. They relate to their buffaloes much more than a mere source of income, with a sense of deep attachment. The role of the elders and lambardars to pass on the knowledge to younger generations about pastoral ways by way of practical experience during grazing, lopping and grass cutting within the chaur.



A specially trained 'Maai', around 10-15 people are primarily responsible for ensuring the buffaloes traverse along the landscape. The selection of Maai is a traditional social institution amidst the Van Gujjars, one or two males are selected from a particular family, who names each buffalo and cares for their well-being. Based on their discretion, a management plan is informally selected by the Maai to determine which area is to be utilised in which

season. The Maai determines the rules for grazing in a particular part of the grassland keeping in account the local climatic factors such as establishing well settled trails, soil fertility, availability of grasses, presence of lantana, reducing fire hazard by consumption of grasses etc. The Maai also ensures that lopping is done in a scientific manner that stimulates trees to branch, leading to denser and more luxuriant top growth. The management strategy of the Maai with respect to the Chaur includes inherent decision of matching animal nutrient requirements with the availability of nutrients in certain parts of the pasture, by prioritizing those livestock which have greater requirements to access these pastures first and graze the greater nutritive value forage, followed by other cattle.

Role of Van Gujjar Tribal Yuva Sanghatan – Maintenance of Pastures across seasons

The Van Gujjar Tribal Yuva Sanghatan is a registered trust, functioning as a collective amongst the community that is keen to facilitate interests of the Community under the Forest Rights Act, 2006 as well as in fields of education, land management, breed conservation, sustainable livelihood and conservation activities. The Sanghatan as a collective has primarily contributed to several activities towards conserving and preserving the KunaoChaur pasture since 2017 and seeks to apply as a collective for the purpose of this award.

The work of the Sanghatan is merely to empower the Van Gujjars within the Chaur by propagating techniques of breed conservation but are not directly involved with the day to day milk trade and profit. Nonetheless, the Sanghatan keeps a tab on the number of bulls, young calves, pregnant buffaloes and those which produce milk on a monthly basis. Out of the 1528 buffaloes raised within the Chaur, around 475 buffaloes at present produce milk during this season. On a daily basis, a total of 700-800 litres of milk is collected in this season but this number rises to 1100-1200 litres in winters as it is the season when buffaloes give birth to young calves.

The Sanghatan has demarcated the grassland into three areas namely Meeya Bazaar, Naharkepeeche compartment and Majhada (Islands on the floodplains of Ganges). All these three areas are utilized as per seasonal variation to ensure there is timely regeneration of grass and other vegetation. In Summer, majority of the buffaloes either migrate to Khadar, Bijnore district to eschew the grass in the Ganges floodplain therein or to the Bugyals amidst the Himalayas in Uttarkashi, RudraPrayag and TehriGarhwal district. In the remaining two seasons a pattern of grazing is practised across the Chaud.

In winter, the community utilises the compartments beyond the canal for lopping and grazing activities. To ensure there is sustainable management of the grassland, the Sanghatan has created a consultative mechanism to ensure the grassland, islands within the Ganges and wooded areas



beyond the canal to utilize the pastures effectively. In rainy season, the community primarily relies upon utilization of the grassland in Meeya Bazaar as it refurbishes due to the rainfall. Thus, in this season, the grazing is managed by dividing the said area within the interval of 15 days. In July and August, the community also conducts an annual festival of plantation, SailaParv, wherein Gutel seeds are dispersed and planted for the regeneration of the pasture. Gutel (scientific name – *TrewiaNudiflora*) as a tree is preferred since it is not only useful for lopping but also of high medicinal use for the buffaloes to feed upon to ensure high nutritional value of the milk produced. But there is a threat of wildlife often consuming these plants when at tender age.

A total of 300 seeds of Gutel were dispersed and planted on 20th June 2017, out of which 189 Gutel plants have germinated today. In 2018, a total of 275

seeds were dispersed and planted on 8 July, out of which 43 Gutel plants germinated and survive today. In 2019, a total of 318 of Gutel and Lusada seeds were dispersed and planted on 14 July, out of which 128 plants germinated and survive today. On 28th July 2020, a total of 188 saplings of Gutel were planted out of which 131 plants survive till date. These efforts of reforestation since 2017 coupled with greater dispersal by the livestock have enabled the growth of dense canopy of Gutel trees, approximately around 1000. Apart from Gutel, the Sanghatan has engaged in plantation of Lusada, Malotus, Kargaal and Kharbat during the annual SailaParv festival. In 2021 too, the Sanghatan is keen to carry out mixed plantations to increase the diversity of the forests within the Chaur.

The Sanghatan keenly engages in safeguarding water bodies and wetlands within the grasslands. The Sanghatan has engaged in fervently opposing the growth of plantations within the landscape in order to protect its pristine habitat. It has frequently opposed the measures undertaken by the Forest department under CAMPA to prevent unnecessary plantation of alien and non-useful species in the grassland habitat. The Sanghatan values diversity within the grassland vis a vis species regeneration by promoting forestry activities that are beneficial for building sustained supply of fodder. This exercise builds resilience of the community to pursue pastoralism in a sustainable manner as well as maintain a viable livelihood.

The Sanghatan is keen to promote the natural growth of forests in the region to ensure the indigenous Gojri breed need not have to rely upon purchased fodder from the market. With the use of such natural fodder, the Van Gujjars are able to maintain the nutritious value of their milk. The Sanghatan believes by adopting such sustainable processes for ensuring high quality of milk is enhancing the identity of their produce which has benefited several members to procure a reasonable and equitable market price for their commodity. The Sanghatan is keen to build on the goodwill of producing unadulterated and nutritious milk, unlike commercial dairy, which has additional health benefits for populace consuming them.

The Van Gujjar Tribal Yuva Sanghatan has ensured members of the community do not engage in



document.

The Sanghatan has ensured members of the community while breeding this buffalo, try to maintain the sanctity of this breed by bringing high quality Gojri bulls to mate with their female livestock. The Sanghatan conducts several cultural and traditional sports with the participation of these buffaloes to ensure the community remains rooted towards the protection of this indigenous breed. The Sanghatan also organises nukkadsabhas through dramas and play exercises amongst the younger generations to keep fascination for this breed alive in the future as well. In this region, the Sanghatan holds a special festival called SailaParv, an afforestation exercise to promote those trees which are lopped from time to time.

However, there has been an infestation of lantana within the landscape in the recent decades due to lack of adequate actions to prevent the growth of the invasive species by the Forest department. The occurrence of lantana continues to threaten the pastoral livelihood of the Van Gujjars as it reduces the carrying capacity of the grassland and is extremely poisonous for the buffaloes. Thereafter, the Van Gujjars frequently clear out the lantana in spaces where they undertake lopping to ensure there is no intermixing of the leaves which the buffaloes feed upon. Furthermore, since the Van Gujjars recognise Lantana to be extremely prone to forest fire, the Sanghatan has time and again with volunteers tried uprooting and cutting the invasive plant to prevent its growth. Till date, there have been drives in 2017, 2019 and 2020, wherein a total of 22 bighas were covered by the volunteers in uprooting the invasive species.

It is hopeful that this activity of the Sanghatan will be incentivized by the Forest department to ensure better management of the common pastures. The Sanghatan is willing to cooperate with all government and non-government institutions that are keen to propagate sustainable protection of the grassland through participative means to further its efforts in breed conservation and pasture management. It is also hopeful that the Sanghatan will soon form a cooperative of its own to ensure the breed finds viable means to develop and cherish with complete agency of the Van Gujjars. Pastoralism as a livelihood needs a fillip through identifying such conservation strategies amidst humans, their livestock and other coexisting wild animals within the grassland. Several activities of the Sanghatan have ensured coupled with the breed, several other species of fauna find utilization of the common property resource within which the Van Gujjars reside.

Knowledge of herbal remedies for animals & nutritional value of fodder

intermixing of breeds and promote the security and preservation of the indigenous Gojri breed within this landscape. The Sanghatan on multiple occasions have petitioned the state animal husbandry department as well as the NBAGR to facilitate in recognition of their efforts but is still to receive any support in their endeavour for breed protection. The Gojri breed and its rearing is an inherent part of their traditional knowledge, customary practices and identity as transhumant pastoralists of the Himalayas, which the Sanghatan is keen to historicise and

The Van Gujjars are well known for their localised and traditional ethno-veterinary knowledge



as professional graziers and breeders of livestock. The Van Gujjars of KunaonChaud have developed specialised knowledge of local grasses and herbal remedies within the landscape. The role of women amongst the community with respect to possessing common knowledge of these herbal remedies for their livestock is worth mentioning. The indigenous curative system used by the community when the characteristics of the following livestock diseases becomes evident like Khurpaka (Foot and mouth disease),

Galghontu (Haemorrhagic septicaemia), Nakada/thanela (mastitis), Taku (epifemoral fever), Rinderpest and Surra. The diagnosis of these illnesses and the preparation of such indigenous prescriptions in which concoctions of roots and tubers as well as a mixture of ash and whey are administered to the afflicted animal. Apart from this several locals from the Chaur are aware of the illnesses caused by consumption of poisonous weeds like Lantana, Cassia tora, Partheniumhisterophorous, etc. These remedies are administered either in crushed or paste form, decoction, infusion, powder through nasal, ocular and ophthalmic route. It is mixed with jaggery, bhusa (wheat husk) or fodder to remove the bitterness. The Van Gujjars knew diagnosis of several illnesses and prepared the following herbal concoctions for lockjaw, cuts and wounds, abscess, dyspepsia and stomachache by mixing natural ingredients such as alum, calcium carbonate, black pepper,ajwain and other local spices.

The Maai is the expert with respect to such knowledge. Some of the herbal remedies which the Maai relies upon amidst the grassland include the lopping of trees such as Gutel, Beheda, Sein, Rehni and Bakli. On eating the leaves of Gutel (Bukhara in Gojri) tree, there is stimulation of energy to traverse long distances for grazing. The sustainable, medicinal and nutritional capacity of Beheda (Terminal Bellerica/Bedo in Gojri) tree, on consumption of the leaves ensures the blood capacity of the buffalo increases as well as increases thickening its skin. The dense roots of the tree helps in reducing soil erosion and the Gojri buffalo helps in dispersal of seeds across the landscape. The Sein tree leaves are only used for medicinal use, when the cattle is infected by fever and infectious diseases like galghontu, mokhar/khurpaka. Sein leaves helps in building antibiotic resistance in a natural way for the livestock. Rehni (Kamila in Gojri/Malotus in English) tree is very common across the Chaud, the buffaloes consume its leaves only when other fodder leaves are not available. Bakli (Toun in Gojri)leaves are primarily used to increase the nutritional and productive capacity of the milk. Amongst the grasses, Dubada is highly useful for digestion amongst buffaloes and horses. After consumption of this grass, animals help in increasing the productive appetite of livestock to consume other leaves and grasses. In a way, Dubada helps in improving the health of the livestock but it grows in areas that has high presence of snakes and insects. Kaai grass grows only on the islands of riverine region, on stones and gravel, which also helps the livestock increase nutrition but is also freely available without threat of insects and snakes.

Status of pasture land – after intervention of Van Gujjar Tribal Yuva Sanghatan



Due to the efforts of the Sanghatan, the entire Chaur is an example of sustainable grazing pasture which many other Van Gujjars are keen to imbibe. On taking the aforesaid measures with respect to the landscape, there has been a rejuvenation of greenery and favourable micro climatic conditions such as wind and adequate rainfall that has favoured the development of the pasture. This has substantially improved the health, nutritional and food security of the buffaloes as well as improved their mating and reproductive cycles. It has encouraged more Van Gujjars within the landscape to engage in safeguarding the indigenous Gojri breed as well as increased the carrying capacity of the grassland. The activities of the Sanghatan has not only had positive impact on the 200 families residing in the Chaur but also has become a model grazing site for the Gothiyas on the nearby villages of Kunao and Ganga Bhogpur within Gohri range. The grassland seeks to become a model khattato feed and nourish 1500 livestock within the region.

Therefore, these activities have indirectly contributed in increasing the nutritional value as well as quantity of milk production. These activities by the Sanghatan have kick started a process to rid the Van Gujjars from the dependence of Lalas for engaging in milk trade, facilitate in developing their own cooperative and increase self-reliance for pastoral activities. There has been a substantial reduction in incidents of fire hazards in the Chaur by consumption of wild grasses and maintenance of fire lines through myriad routes of grazing practised by the buffaloes. The livestock browsing within the Chaur has stimulated growth of trees to branch, leading to denser and luxuriant top growth for lopping. The indigenous resource management through rotational grazing ensures lesser proportion of forage is trampled, soiled and rejected by the animals as well as larger areas of the Chaur is uniformly fertilized on distribution of the excreta.

The Chaur is has become a hotspot for breed development for the Gojri bull and buffaloes due to the high nutritive capacity of grass and the fodder available. Several Van Gujjars have come to the Chaur from different other regions for mating their female buffaloes with these bulls of high quality and great body structure for enabling breed development. The Sanghatan in the future seeks to use this model of the Chaur as an example to fulfil its long pending wish of registration of the indigenous Gojri breed within Uttarakhand and Uttar Pradesh state. The Animal husbandry department of PauriGarhwal in March 2021 awarded third place to MohdRafee, one of the Maai from Kunaonchaur, Gohri range in the 'PashuPradarshini' competition where the Gojiri breed was displayed and assured of recognition. The Sanghatan is also keen to conduct a 'PashuMela' to popularize the practises of pasture management and breed conservation of the Gojri buffalo. The Sanghatan is keen to exhibit these practises through a photo exhibition and traditional knowledge booklet on breed management, conservation practices, maps, history of pastoral community as well as traditional medicines and herbal remedies. In the long run, the

Sanghatan is keen to launch a 'Gojri' breed of milk as an indigenous brand after testing the nutritional capacity of the milk produced within the laboratories.

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Annexure :

Azad Chechi, President, Eco Development Committee, since 2000, Gaindikhata, Haridwar, Uttarakhand– I acknowledge the work done by the Van Gujjar Tribal Yuva Sanghatan in taking up the issue of pasture management and breed conservation in the KunaoChaur, Gohri range. I am hopeful these best practices will be carried forward by the Van Gujjar Yuva Sanghatan are carried out in other areas of PauriGarhwal, Haridwar and Dehradun districts with respect to pasture management. I wish them all the best in their future endeavors and hopeful that some of these ideas that promote traditional knowledge of Van Gujjars on pastoralism, breed and work practices will enhance their livelihood opportunities and promote sustainability in the region.

27th June 2021

Bargur cattle

Conserved by Mrs. Jogappa, Erode District, Tamil Nadu



Name of livestock keeper :

Jogappa

Full address :

Oosimalai, Bargur post, Anthiyur taluk,
Erode district, Tamil Nadu

Mobile :

9443233064



Mr. Jogappa (aged 55 years) illiterate living in Oosimalai village, Bargur post, Anthiyur taluk, Erode district. His family has 1 son and 2 daughters. His daughter has married. Mr. Jogappa owns 1.5 acres of dry land cultivates corn, ragi. His son has been maintaining that land. He is keeping adult cows 36, bulls 4, calves 8 totalling 48. His wife is working as agricultural labourer. He spends 4 months (Tamil months viz. Thai - Chithirai) by grazing cattle in Usimalai, Bargur village. In the remaining 8 months he graze his cattle in Naluroad kombaikadu in Karnataka state. His cattle face drinking water problem during summer. Every day he eat morning breakfast then prepare the lunch and went kombaikadu hills for grazing the cows around 8 a.m. and he returns along with his cattle to the Naluroadu cowshed around 6.00 p.m. Other than grazing in forests he does not give water and feed to the cow in the animal halting location. He temporarily stays in a thatched shed in the land owned by local landlord on informal agreement to see that the landlord enjoys rights of collecting dung from the herd. However the cost construction of thatched shed shall be borne by the landlord. Burgur cattle gives very small quantity of milk usually allowed for the calves to suck full milk from the mother cow. He earns income annually by selling about 20 male calves in the sandy in Anthiyur town, Erode District i.e. Rs.3 lakhs. Males have demand for using them as bullocks and for jallikattu festival.

**Breed characters :**

'Bargur' is a cattle breed found around Bargur hills in Bhavani taluk of Erode district of Tamil Nadu. There are about 200 families maintaining about 15,000 cattle. Maintained to carry out agricultural operations in hilly terrain, this breed is also well known for its trotting ability. It is brown in colour with white markings over the body. Horns are light brown in colour and emerge closer at the root and are inclined backward, outward and upward with a forward curve, which is sharp at the tip.

According to herders, Bargur is the preferred breed because the calf sells for a good rate. "we can take it for jallikattu, ploughing purpose and the milk tastes good", says Jogappa.

The Bargur variety faced threat as it relied on grazing inside the forests whose access had been denied to it.

Economics of herding

The main source of income for bargur cattle herders in this region is from the sale of calves. Calves are maintained 12-18 months and then sold either in the Anthiyur cattle market or to traders from Kerala and Andhra. A healthy calf is sold for approximately Rs 20,000. He sells about 20 male calves in a year and it is mainly purchased for using them as bullocks, Jallikattu purpose. Most bulls are sold, although a few agile ones may be kept in the herd along with all the cows. However, over the last 2 years, since the lockdowns due to the COVID pandemic, these markets have not taken place. Herders have been unable to sell their calves. This has caused some financial strain.

At times, a herd may also include a few animals belonging to other families. A herder may take up the job of taking these animals to graze, along with his own. For his services he is paid a fee. According to Jogappa, a herder, you need at least 50 animals for herding to be financially viable. The summer months are a difficult time for herders in the region. During the dry months there is an acute shortage of grass and herders often purchase feed for as much as Rs 1Lakh to tide over the season.



Heaped Cow dung

Sale of By-products

By-Product	Selling price	Details
Goat dung	Rs. 100	1 sack
Cow dung	Rs. 15,000-20000	1 truck load
Cow milk	-	Enough only for household consumption. When there is surplus it is churned into buttermilk and ghee and stored.

Penning

Herders pen their animals on agricultural fields belonging to others in the village. Traditional relations between herders and farmers exist in this region. Dung is collected into a heap and given to farmers to be used as fertilizer. In exchange for their penning services the farmer may give the herder ragi or rice. There is no exchange on money between the two parties.

Usually, the dung is collected by women in the herding family. Once the flock has left to graze and the pen is empty, the dung is shoveled into a heap. Many herders may have adjoining pens, or a single herder may use a stand-alone pen. Smaller enclosures, with roofs are built for calves. They meet the manure requirements of farmers in Chamrajanagar district. Because of manure supply from Bargur cattle herders farmers completely depend up on cattle manure with no chemical fertilizer applied for cash crops they cultivate viz. ragi, banana, turmeric, sorghum.

In other districts farmers usually apply Di-Ammonium Phosphate (DAP), urea and complex fertilizer at the rate of 5-10 bags per acre. Therefore Bargur cattle herders indirectly promote organic farming in this area. They supply 400 lorry load (2000 tonnes) of manure to cultivating farmers annually.

Grazing land

He knows about different variety of grasses (aram grass, dalamechipullu, ganachettipullu, kurigalpullu, korai pullu). According to him when an animal eats a diverse variety of forest grasses its milk is nutritious.



He tells that the availability of grass has reduced more recently. This was attributed to erratic rainfall and a weed (poondu) that grew everywhere preventing the grass from sprouting. When there is sufficient rainfall, the grasses grew back, and the weed became sparse. This has also impacted the number of animals in each herd.

The forest department in Tamil Nadu has disallowed them from entering the forest, due to accusations of cutting sandalwood for illegal trade. Therefore, herders must cross the state borders and enter Karnataka to be able to access the forest, since the forest department there does not have such a rule.

When the grass is lush, a herder may travel about 4 km to graze his flock. However, during the dry months, a herder may travel as far as 8km each way to provide fodder for his animals.

Herders usually leave home with their flock around 8 am and return home around 5 pm. Some herders take packed food along with them, others eat before and after the journey. At times they eat fruits and honey from the forest, along their route. During their journey, at times, they come upon honeycombs, jamun fruits and gooseberries and other seasonal forest berries which they pluck and eat.

Health of the Animal

Elders in the family are known to have specialized knowledge about traditional medicine. There is a difference in the knowledge possessed by the two herding communities of the region- the Lingayats and the lambadis. This information is not easily exchanged or shared with outsiders. The Lingayats believe that their treatments will be ineffective if performed by outsiders.

Some herders suggested that their animals fall sick more often now-a-days. They believe this is because the quality of the grass the animals graze on has deteriorated over the years due to the lack of rain. This impacts the animal's health.

Calves are left behind in the pen while the flock is taken to graze. They may be given special attention. They are kept in special enclosures. When a calf has the tendency to eat mud a small basket woven with a local grass is tied around its mouth to prevent it from doing so.

Ailments

Snake bite

Soars on hooves

Lumps in the body

Sore Throat

Herbal Treatments

When this happens, the cow's tongue will change colour. Purasumaram bark is to be pound along with black pepper and garlic and diluted in warm water and administered orally.

This generally happens during the monsoon. Petrol is poured over the soar.

Veterinary doctor comes to give an injection

Turmeric and pearl onions are mixed into buttermilk. This liquid is mixed with cooked tubers (ingelkappagensus) from the forest and fed to the animal.

Stomach upset	Animals generally know what to eat. If by mistake it eats something bad, it will have a bad stomach for a short while, but this will become okay by itself.
Headache and fever	A paste is made from forest leaf and applied on the head of the animal
Chicken pox	Veterinary doctor comes to give a vaccine against chicken pox
Bone Fracture	Bark of Naysaraya pattai , Mudakkathan root paste is applied over the affected area

Interaction with wild animals



In the forest leopards, tigers, foxes, elephants, and snakes are a threat to herders and their flock. Several herders reported that they felt conflict has increased more recently. When cattle is attacked by a wild animal, it must be left behind in the forest since it is too far to bring back to the village. Bol Thamadi, a herder, mentioned that recently one of his animals was stomped to death by an elephant, while it was drinking water inside the forest. Most herders felt that although there were compensation schemes, they were unable to afford the money required to make the compensation claims.

Besides this, within the village, monkeys often rip apart the plastic sheet roofs of the temporary shelters in which herding families reside. Women in the family remain home to prevent this from happening.

Tradition of herding

Herders reported that they had been herding for many generations. Some women in the community also take animals to graze. Herders said, "we learnt about all this through our fathers and brothers. Young boys in our families go to school during the week and come with us to the forest on the weekends. If a boy is less interested in studies, he comes with us. If he doesn't enjoy being in school or coming with us, he may also work in granite stone quarries in the neighboring regions."Idiyamal says, "we would not mind if our children took to this work. However, income from this needs to improve."

According to a group of herders, young boys must go along with the elders many times to reach a level of maturity before he can take a flock to graze on his own. He needs to develop the 'courage' to go and face challenges by himself. In every flock a bell is tied around the neck of one or two animals in the herd. These bells are purchased from the local market. All the animals look out for the sound from that animal and stay close together. The sound of the bell also helps the herder keep track of their herd. Jogappa says, "we carry a stick, anyone, a young boy, or an old man can carry the stick with them for safety"

Cultures of Herding

Animals in the herd are given human names. Names include marvalli, karti, sivalatre, chankranti, gouri, manjumale, bommi. Herders speak of their animals with endearment. Calves are named as soon as they are born. His wife says, "when I call out the name of a cow from my

herd from across the mountain, she will come and stand before me in a second". She says every animal has a personality, "some are pleasant, some are irritable, some aloof.

When it is time to return home to Bargur at the end of the season, families load their belongings onto a pickup truck to be transported. "We didn't have donkeys or horses. Before we used vehicles, we carried our belongings as a head load", says Jogappa.

A group of herders reported being from Usimalai, Bargur. During the season the entire group of herders from Bargur migrates to the forests with their herds. "Our deity is in the Mahadeshwar hills. There is a big festival in the temple during Diwali.", says Jogappa. A popular staple in their homes is ragi roti along groundnut coconut chutney or ragi mudde along with soppusaaru, Lingayat herders follow strict rules about purity of food. They do not eat food or drink water outside their homes. There are also a few Christian herders in the region apart from Lambadi herders.

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Grass land Development in Arunachal Pradesh

by Dungkharpa Welfare Society



Name of livestock keeper : Mr. Rinchin Tsering

Full Address : Dori Village, Dirang Basti
Arunachal Pradesh.

Mobile : 8414990553

Family Background :

No. of animals owned species wise & breed name

S.No.	Species	Breed	No. of animals owned by members of Dungkharpa Welfare Society
1.	Yak	Arunachali	70
2.	Dzo	Yak x Cattle hybrid (male)	30
3.	Dzomo	Yak x Cattle hybrid (female)	100
4.	Local hill cattle hybrid	Kot	70
	Total		270

Land area owned and crops grown

Dungkharpa Welfare Society owns land area in four and three different locations in summer and winter grazing grounds respectively.

Land area owned: The land area owned by the society is 24 ha in summer grazing grounds and 176 ha in winter grazing grounds. So, the total area owned by the society is 200 ha.

Dungkharpa is one of the clans (along with few others) from Dirang belonging to Monpa tribe who have inherited vast areas of cultivable and grazing lands from their forefathers and have collective community rights on these land. The society has also taken up silvipasture and horticulture activities aided by the government in the lands owned by them.

Crops grown: All the land owned by the society is actually grazing and forest area and is used mainly for grazing yaks, yak-cattle hybrids and cattle. In fact, at such high altitude, none of the crops can survive in these areas.

1.How many generations involved in livestock keeping

Since time immemorial, the forefathers of this clan have been involved in yak rearing and have been grazing their animals in the community lands owned by them. However, as per the knowledge and living memory of Mr. Rinchin Tsering, Chairman of the society, the clan is involved in livestock rearing since past five generations.

2. How the society has contributed in CPR/pasture land development

Dungkharpa clan has inherited vast property of grazing lands from their ancestors. These lands are protected by the community and the benefits arising out of them in the form of grazing tax or Tserin are shared collectively among the community members.

The members of Dungkharpa clan got organized in 2005 and formed Dungkharpa welfare society to benefit the people of this clan as per the bye laws framed during its inception. However, since its establishment, the society has made great endeavours to protect overexploitation of grazing grounds, rejuvenation of pasturelands and upliftment of yak herders or Brokpas. The society has made commendable efforts to counter the challenge of feed scarcity in winters which is the major problem faced by Brokpas. Besides, the society is engaged in various social activities and felicitates meritorious students of Dungkharpa clan as well as Brokpa community.

i) Area of Common Property Resources (CPR) / pasture land

All the land owned by the society is used as common property resource or pasture land and serves as summer and winter grazing ground for yaks and other bovines. Therefore, the whole land area of 200 ha is used as CPR or pasture land.

ii) Name of CPR / Pasture land - specific name as called by local communities & classification of land

The pastureland or CPR is locally known as Brok. Dungkharpa clan owns several summer and winter pasture grounds and the same area is owned by Dungkharpa Welfare Society. The detail of locations of these grounds is provided below:

S.No.	Summer Grazing Land	Winter Grazing Land
1.	Dungchikpu	Mandala Top
2.	Rampu	Dwangba
3.	Surkatengjab/Surkatengjabka	Merakmu
4.	Drazang Rampu	

iii) How many animals graze this area? How many families dependant on this area?

Around 40 families are dependent on these grazing grounds who own large number of pure- bred Yak, Dzo, Dzomo, Jatsamin (Yak x Mithun female) and cattle. These families use both the summer as well as winter pastures owned by the society for grazing their animals.

S.No.	Location	No. of Animals	No. of dependent families
1.	Dungchikpu	150	3
2.	Rampu	250	7
3.	Surkatengjab/Surkatengjabka	300	6
4.	Drazang Rampu	150	3
5.	Mandala Top	600-700	11
6.	Dwangba	200	5
7.	Merakmu	200	5
	Total	40	

iv) Legal authority for the land / ownership

Legal authority for the management, regulation and protection of pasture land or Brok rests with Dungkharpa Welfare Society.

v) What are all fodder species available?

The lands owned by Dungkharpa welfare society are natural grazing grounds and different grasses and tree fodder species naturally propagate there. However, Dungkharpa Welfare Society has been instrumental in sustainable development of these grazing lands by imposing certain rules and regulations. Further, the society has collaborated with ICAR-NRC on Yak to grow fodder for yaks and other animals in the winter grazing grounds.

S.No.	Grazing grounds	Fodder species available
1.	Summer grazing grounds	Grasses: Xiululi (<i>Acer campbellii</i>) Tree Fodder: Lagruk Shing, Marmu Shing, Kar Shing (<i>Acer hookeri</i>), Marmma (<i>Spirarea spp.</i>), Ten Shing, Ponpu
2.	Winter grazing grounds	Grasses: <i>Dactylis glomerata</i> , White Clover (<i>Trifolium repens</i>), Tree Fodder: Bamboo, <i>Salix spp.</i> , Marakpa Shing, Bramnangla, Ten Shing, Chuk Shing

vi) Who manages the pasture land and how?

Dungkharpa Welfare Society is responsible for the overall regulation and management of the pastureland. The society has a written constitution comprising of rules, bye laws and regulations for management of these pasturelands in Tibetan language.

vii) Any traditional / social institution/rules / regulations in the management of lands

Dungkharpa Welfare Society has a well-defined written document to manage the pasture lands. Besides, general body meetings are conducted twice a year to regulate the movement of animals and modifications in rules or regulations are effected in these meetings.

Though the society was initially conceived as a community of Dungkharpa people, with time it has become more inclusive and people from other clans like Compa, Gonpapa and Lama have also been given membership of this society.

The general body meets twice a year in a meeting chaired by the chairman accompanied by general secretary and a Gomin (a person in-charge of conveying information to the Brokpas who is changed every year). Gomin is appointed from amongst the Brokpas on a rotation basis every year.

In this meeting, the dates are decided for the Brokpas to reach summer and winter pastures in order to ensure that all the Brokpas reach there on the same specified date and everyone has equal opportunity for their animals.

Considering the physiological and nutritional requirements of yaks in mind, yak owners are allowed to reach these grounds along with their yaks one month prior to the cattle and yak-cattle hybrid owners.

viii) How the society has contributed in the regeneration of CPR / pasture land

Dungkharpa Welfare Society has been relentlessly working for the rejuvenation and development of pasture lands by effecting changes in the already framed rules and bye laws and by collaborating with different government agencies.

Earlier, the prevalent practice amongst the Brokpas was to cut the bark of the trees in the grazing grounds in order to construct sheds as a result of which, tree dries and dies. With the intervention of the society, this practice has been banned in order to prevent the indiscriminate felling of trees.

As per the consensus arrived in the general body meeting, it was decided that Brokpas will not be allowed to cut tree species palatable to animals in order to clear the grazing areas. Also, trees for general use like timber etc. are forbidden to be cut. Only the uneconomic as well as unpalatable tree species are lopped to create a grazing area for the animals. In order to pursue this, every year, one Brokpa is invited from every household (dependent on the grazing grounds) for a week in order to help with the lopping exercises. This gives a sense of possession and participation to the Brokpas and promotes inclusive development.

The society feels that feed scarcity during winters is the single biggest challenge for the Brokpa community as well as their animals and is making consistent endeavours to address this issue. In continuation with the same, Dungkharpa Welfare Society has collaborated with ICAR-NRC on Yak to identify the pastures which can sustain in the winter grazing grounds. Initially, Bamboo (10 acre) and Salix spp. (0.5 ha) tree plantation was carried out in 10 acres and 0.5 ha area respectively in Dwangba and Merakmu. Subsequently, the area under these plantations has multiplied. This scientific engagement is reflective of society's efforts for conservation of animal germplasm and economic upliftment of the poor Brokpa community.

Grasses like Dactylis glomerata and White clover (*Trifolium repens*) were extensively planted in 1-2 ha area in the winter grazing grounds in order to tackle the problem of feed scarcity during winters.

ix) Status of pasture land after his intervention and number of animals being grazed and families benefitted.

Local hill cattle cross called Kot suffers immensely during winters due to its lesser endurance and inability to compete with yaks and yak-cattle hybrids for feed during winters. After the introduction of Bamboo and Salix spp. plantation in the winter grazing grounds from 2010 onwards, the health of Kot has considerably improved and mortality rate has also come down.

In collaboration with ICAR-NRC on Yak, the society has planted several grasses like Dactylis glomerata, White clover (*Trifolium repens*) and tree species like Bamboo in the winter pastures. This has resulted in an increase in the milk productivity of yak and yak-cattle hybrids.

x) Any knowledge on herbal remedies for animals, nutritional value of fodder species, and management of CPR / Pasture land etc.

Dungkharpa Welfare Society and Brokpa community has a rich knowledge of herbal remedies and treatments for their animals and their own self.

Marmu Shing: It is a tree fodder which is believed to impart strong vigour and improve the health as well as productivity of yaks

Nging (Aconite spp.): It is fed in minuscule amounts in order to cure dysentery in yaks. It is even consumed by Brokpas themselves in still lesser quantity. Though a poison, yet it is quite effective as a medicine in small measured quantity.

Ten Shing: This tree fodder is fed to weak yak calves to improve their health and promote growth. It is also consumed by Brokpas themselves as well as given to their yaks to treat fever. Besides, they have great insights on the nutritive fodder species for their animals. As per their traditional knowledge, the tree fodder like Ruspa Shing, Lagruk Shing, Marakpa Shing as well as Ten Shing are highly nutritive as well as relished greatly by yaks.

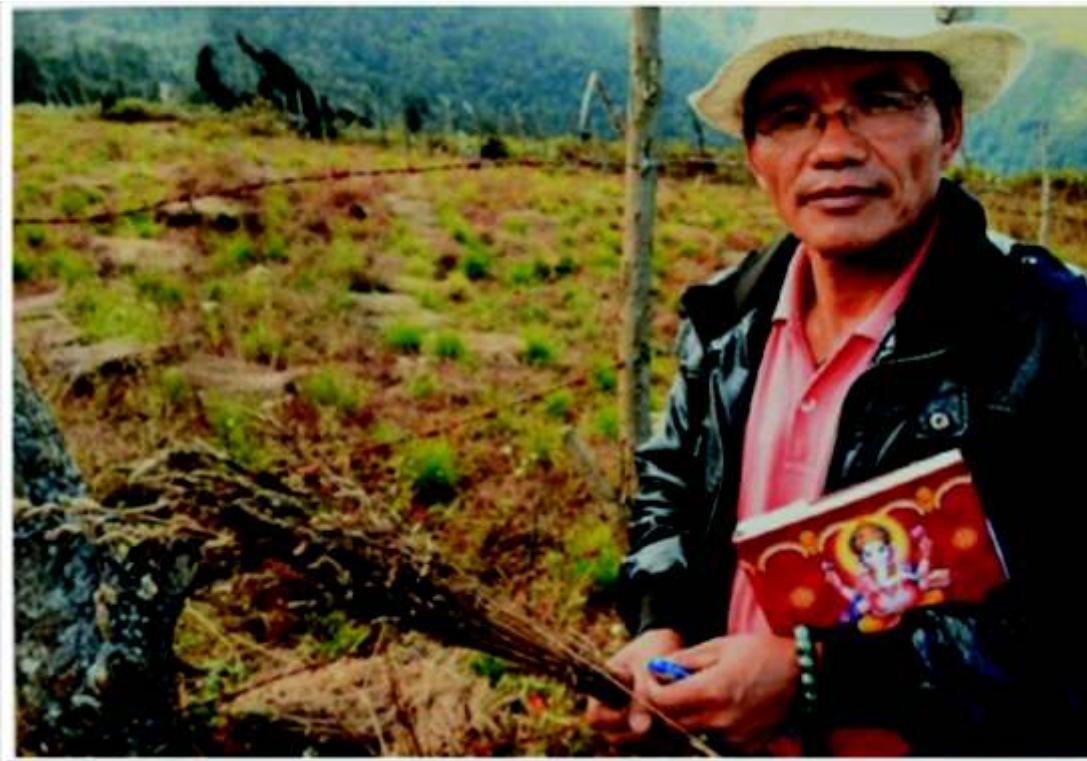
xi) Two references for his role in CPR / pasture land development

As a part of solving the acute problem of feed scarcity during winters, the society collaborated with ICAR-NRC on Yak for identifying suitable pastures and rejuvenating winter grazing grounds in a three year long project (2009-2012). This has resulted in plantation of Bamboo and certain grasses in those areas which has mitigated the concerns of Brokpas to certain extent

As the Chairman of Dungkharpa Welfare society, Mr. Rinchen Tsering got an opportunity to visit Kyoto, Japan in December, 2009 and delivered a widely appreciated talk on the life of Brokpas and the work of Dungkharpa Welfare Society in their upliftment. This was reciprocated by the visit of a Japanese team including Dr. Kazua Ando, Professor, Southeast Asian Studies, Kyoto University, Japan to Arunachal Pradesh to witness and document the work of the society including the visits to winter grazing areas in Dwangba and Merakmu.



Summer (left) and Winter (right) grazing grounds of Dungkharpa Welfare Society



Mr. Rinchen Tsering, Chairman Dungkharpa Welfare Society at the site of grasses plantation in the winter grazing grounds in Mandala



Grasses in the winter grazing grounds after the intervention



Visit of Professor Dr. Kazua Ando, a member of Japanese team to the winter grazing grounds of Dungkharpa Welfare Society



Roots of Nging (*Aconite spp.*) used in minuscule amounts for treatment of dysentery in both yaks and *Brokpas*



Mr. Rinchin Tsering, Chairman of Dungkharpa Welfare Society (sitting fourth from right) at the International Conference for the Japanese government funded research project "Human Life, Aging and Disease in High-Altitude Environments: Physio-medical, Ecological and Cultural Adaptation in Highland Civilization" held on 3rd-4th December, 2009 at Kyoto, Japan

Development of Pasture land in Kutch district, Gujarat

by Nani Dadhdhar Community Forest Management Committee

1. Name of Pastoralist/ community:

-Nani Dadhdhar Community Forest management committee

2. Address & contact phone number

Village : Nani Dadhdhar(Banni), Taluka- Bhuj
District : Kachchh Pin-370001
Haji Hasam Adam Node
Contact no : 95129 08060

3. No. of animals owned species wise& breed name

Total animals : 1250

Breed : Banni Buffalo

4. Land area owned and crops grown.

-Gramsabha / Village : CFMS

5. How many generations involved in livestock keeping?

Four generations

6. How he contributed in CPR/ pasture land development

i) Area of CPR / pasture land

-Vendh grazing area in Dadhdhar village 200 ha

Name of CPR / Pasture land - specific name as called by local communities & classification of land

-Area local name-Vendh sim

-Protected forest area

iii) How many animals graze this area? How many families 'dependent on this area?

-Number of livestock -1250

-Depended family -85

iv) Legal authority for the land / ownership

-Banni Grassland Protected Forest

v) What are all fodder species available?

-Approximately 45 species of native Grass and Herbs are recorded in the particular landscape, top palatable species mentioned below :

1) Dichanthium annulatum (Denai)

- 2) Echinochloa colona (Sau)
- 3) Cenchrus ciliaris (Dhraman)
- 4) Chloris barbata(Shiyalpuchh)
- 5) Digitaria ciliaris
- 6) Cynodon dactylon (Chhabar)
- 7) Eleusine indica (Gandjiro)

8) Cressacritica (oin)

vi) Who manages the pasture land and how?

-Under the observation of Community Forest management committee and villagers will manage this pasture landscape.

vii) Any traditional / social institution/rules / regulations in the management of lands

-Gramsabha decide the rules for the management of lands

-No one can encroach this area for settlement or other purpose

-Participate (Aabhat) for the removal of invasive species Prosopis juliflora

Over the last two years local villagers gathered for Aabhat work twice and worked over 200 ha lands

-Water resource conservation activity also covers in Aabhat gathering, and setup a rules for sustainable use.

-Each herds have owner from the village, and owner look their animals. In the Banni region some herds go for grazing without herdsman and at the time of milking herds come back its own.

-Hunting/Poaching of wildlife is totally prohibitive

-Cutting of Native tree is totally prohibitive

viii) How he has contributed in the regeneration of CPR / pasture land

-Villagers/ CFMC members participate for the Grassland improvement related activities like Removal of invasive species Prosopis juliflora, post removal management through Aabhat traditional program.

AABHATH is a voluntary contribution of labour for a public cause (also known as 'shrumdaan' or People's Contribution) and this is a traditional culture to digging their traditional water well called VIRDA since many years. With this a total of more than 20 youth and members of CFMCs along with RAMBLE-BPUMS-SAHJEEVAN team started a process for removal of Prosopis juliflora from respective restored landscapes. Approximately more than 10 ha. land is restored through removal of secondary growth of Prosopis juliflora from three different sites. Awareness and development of participatory governance system at each CFMC level has been organised.



Selected Photographs of Restored Plots and Regeneration of *Prosopis juliflora*(Ganda Bavar)



Local Pastoralists- Youth & members of CFMC Participated in AABHATH



Participated researchers and BPUMS team in AABHATH

ix) Brief description needed (one page along with pictures)

Banni is grassland, which was once known as Asia's second largest rich grassland. Banni's different pastoral communities have prominent and diverse heritage and cultural legacy. Since 1955, area of 2500 km² has a status of reserve forest. Economy of the region is very strong and it is considered as backbone of dairy industry of Kachchh because it produces one lakh litre milk daily. 'Pashu mela' (Animal Fair) led to a boom in animal husbandry. With the development of tourism, a new direction of livelihood is opened here.

There are total 54 villages under 19 villages Panchayat in Banni. The area is mainly inhabited by muslim (Sindhi) community, while communities like Meghval and Vadha also live in the area. It is a very interior area; hence the basic needs and education etc have developed in negligible quantities. Here Banni Buffalo and Kankrej cow is the main tool for the livelihood and open grassland is the main source of fodder for livestock.

Grassland improvement as well as animal breeding and development are the main requirements. Community Forest Management Committees (CFMCs) are formed under Forest Right Act, section 5, rule 4 (E), (F), (G) at village level by Gramsabha. Gramsabha does the processes like strengthening of CFMCs, grassland improvement, management, conservation and collective rights for livestock keepers.

CFMCs are constituted in total of 40 villages out of 47 villages by 'BanniPashu Ucherak Maladhari Sangathan'(BPUMS) with the approval from Gramsabha. Appreciative work related to grassland improvement and management work is done by 17 CFMCs in different areas of Banni. By these CFMCs, preparation of management plan for their villages, its approval from Gramsabha and implementation of management plan is completed. The main goal of this work is to bring collective control and conservation of native biodiversity.



Aabhat NaniDadhdhar Landscape

- x) Status of pasture land after his intervention and number of animals being grazed and families benefitted.
- After intervention in this area, they have good native grass cover, Total 1250 animals are dependent in this landscape and 85 families get benefited.
- xi) Any knowledge on herbal remedies for animals, nutritional value of fodder species, and management of CPR / Pasture land etc.

-In the village they have traditional healers locally called as Bhagiya; they have good traditional knowledge about animal disease and classifying grass species as palatable and non-palatable types.

- xii) Two references for his role in CPR / pasture land development
- 1) Halepotrasalemamadfakir Mamad
(Banni PashuuchherakMaldhari Sangathan)
Contact Phone : 94272 89802
 - 2) Ramesh Bhatti (Sahjeevan NGO)
Contact Phone : 9978220515

Pictures of community meeting and animal grazing in Banni lands.





Grass species and richness survey by Ramble team





Role of Genaram Raika in conserving Bikaner Camel Breed in Rajasthan



Name of Pastoralist / community : Genaram Raika

Address & contact phone number : S/o Aduram Raika

Grandhi Village, Bajju, Bikaner District,
Rajasthan - 334305

Mobile : 8890696163, 8949712734

Family Background

Genaram Raika is a pastoralist from Bikaner district, located in the Thar desert of India, well known for its extreme climatic and living conditions. Genaram hails from the Raika community of western Rajasthan, popularly known for their skills in camel herding. He has not received any formal education but he has many expertises as a pastoralist. Pastoral activity is the primary source of his income, with agriculture being the second source. He owns 42 beeghas of agricultural land, all of which is dependent on rainfed irrigation. He cultivates pearl millet, wheat, moth, etc.

He lives in a semi-pucca home. He has four sons and a daughter. His elder son also helps him in camel grazing and rearing. He has around 200 camels, 20 goats and 5 cows. Out of the 200 camels, around 150 are females and 50 are males.

S No.	Animal	Male	Female	Child
1	Bikaneri Camel	50	150	48
2	Rathi Cow	1	12	3
3	Goat	10	40	12
	Ship	5	25	14



(Above) Genaram Raika's Herd

Lifestyle

He spends most of his time grazing these animals. In summer, when there is a shortage of fodder, he leaves their camels open for free-grazing, as the camel is a large animal and it is very difficult to arrange fodder for 200 camels at home.

He milks the camel every day and drinks raw camel milk in the family. He knows about the nutritional and therapeutic effects of camel milk. He has the skill of milking camel's milk. Camel's milk is not milked like other animals. Camel's milk has to be milked standing up.



(Above) Genaram Raika cutting camel hair



(Above) Genaram Raika milking his camel

He cuts the camel's hair every year in the summer season. Traditionally, ropes, rugs, blankets etc. are made by spinning camel fibre into yarn.



He also uses traditional knowledge for the treatment of camels during open grazing. He treats his common camel diseases like mange using sulfur (called Peela Jahar amongst local herders) and mustard oil. He also has a good knowledge of the grasses grazed by camels.

Details of Livestock Breed Conservation

Bikaneri breed camels



Bikaneri camel

Bikaneri breed of the camel is one of the major camel breeds found in India. The breed derives its name from the city Bikaner which was established by Rao Bika in the 15th century and is known for better drought potential. Bikaneri camels are predominantly bred in Bikaner and nearby districts, such as Sriganganagar, Hanumangarh, Churu, Jhunjhunu, Sikar and Nagaur of Rajasthan and adjoining parts of Haryana and Punjab state.

The camels of Bikaneri breed are heavily built and are attractive with a noble look. It has good height, a strong build and active habits. The colour of the coat varies from brown to black, however, in some animals reddish tinge is also found. They have a symmetrical body and a slightly dome-shaped head. The forehead has a well-marked depression above the eyes, which is characteristic of this breed.

The number of camels is rapidly decreasing in Rajasthan. According to Livestock Census 2012 and 2019, the population of the camels has declined by 37% in the last ten years because herders have lost the livelihood opportunities that were linked with camel-husbandry. Under such circumstances, Genaram is rearing around 200 camels, the largest herd in his residential area.

On the question of how many generations of yours have been practising camel rearing and conserving it, he answered, "Our traditional work is camel rearing. We are doing it generation after generation. My father and grandfather also did it."

Selection criteria of male and female camels

The selection criteria of the male breeding studs

1. Physical strength and appearance
2. The age of the camel
3. Colour of male camel
4. Productivity of the breeding stud
5. Milk productivity of the female
6. Breed

The selection criteria of the female camels

1. Quantity and quality of milk.
2. Number of pregnancy
3. Age of the female camels
4. Breed
5. Physical appearance
6. Productivity and
7. The quality of the children born by the camel

Achievements

Genaram Raika is well known in his area for maintaining the purity of his Bikaneri camel and Rathi cow breeds. Combining his traditional knowledge with modernity, he maintains livestock and also guides other pastoralists in the area. Presently, he took an initiative to preserve the purity of the Bikaneri camel breed by placing a request to the National Research Center on Camels in Bikaner to provide a breeding male camel for his herd.

He took this initiative by organising a meeting of camel herders from Gandhi village and passed a resolution in the village level committee to get improved breeds of male camels from NRCC.

He then obtained necessary support and permission from the Gandhi Gram Panchayat for his initiative. He has now thus received a pure Bikaneri breed of camel from NRCC. Along with this, he also received nutritious fodder for camels from NRCC so that the camel remains healthy. Genaram Raika now breeds his herd's female camels from the same camel. Other camel farmers in and around the village also use the same camel for breeding. Dr. Suman Vyas, Chief Scientist, NRCC, appreciated this step of Genaram Raika and always provides him with technical and information support regarding anything related to animal husbandry.

The camel's hair was traditionally used to make mats, blankets, etc., a variety of things that began to fade with time. Genaram Raika teamed up with Urmul to try to keep those practices alive. He helped Urmul Desert Craft produce new handicraft products using camel wool by using his heritage knowledge of wool fiber spinning and sorting. Seeing this has inspired other camel herders in the region to start collecting and storing camel wool for use and sale. Earlier, they used to shred the camel's wool and throw it away. Genaram has also started earning an additional income through the sale of wool.

As an active camel herder and member of the Camel Herders' Federation based out of Bajju camel cluster, Genram has also participated in many camel milk related trainings and workshops and helped out in the pilot run of camel milk conducted by Urmul in Bikaner city for exploring marketing possibilities of camel milk.

Genaram Raika

Details of Annual Income & Expenditure

Source of Income	Income in INR
Camel milk	2,00,000 approx. (INR 35 per liter)
Camel sale (approx. 20,000 approx. per camel)	2,00,000
Camel wool	10,000
Camel dung	20,000
Total Income	4,30,000
Expense Head	Expense in INR
Fodder	3,25,000
Water	35,000 (INR 1000 per 5000 liter - tanker)
Medicine	20,000
Total Expense	380,000
Net Annual Income	INR 50, 000



Genaram Raika has also visited Sarhad Dairy, Amul's Lakhod plant to understand the work being done by Amul on camel milk in Kutch region. The visit was organised by the URMUL and Sahjeevan. Apart from this, he also met the Rebari camelkeepers and enthusiastically learned about the breeding and maintenance practices of camels there. He wishes for a large-infrastructure system to be established and initiated in his residential area of Grandhi, Bikaner, for the trade and sale of camel milk.

Genaram's camel herds are very famous in western Rajasthan. In fact, an episode of Netflix's popular show 'Raja Rasoi Aur Anya Kahaniyan', that portrays traditional cuisines and food practices, was shot in Grandhi village at Genaram's house and showcased his camel herds, his herding lifestyle and the cuisines associated with his herding lifestyle.

References

1. Dr. Suman Vyas, Principal Scientist (Animal Reproduction), NRCC, Bikaner, Rajasthan.
Contact Number - 9351354543
Mail Address - sumnat.vyas@icar.gov.in
2. Dr. Umesh Wargantiwar, Nodal Officer, Animal Husbandry Department, Jaisalmer, Rajasthan
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Regeneration of degraded pasture land in Wobthang, Tang, Bumthang, Bhutan

by Mr. ChimiRinzin



Name of Pastoralist / community : Mr. ChimiRinzin, Sr. Extension Supervisor
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Pasture land management

The land is actually owned by Tang community (sub-district) consisting of 288 households. The total area consists about 1865 acres of which about 82 acres are under agricultural crops such as potato, buckwheat, strawberry and vegetables while the rest is used for grazing the animals. The breeds of animals owned by the Tang community are Jersey and Brown Swiss crossed with local cattle which are adapted to grazing instead of stall feeding.

The land at Wobthang was granted to the people of Tang sub-district by the 4th King of Bhutan in 1972 to establish a dairy farm. Since then, a dairy farm was established and had been operational till date. Majority of the land was under native pasture and only about 300 acres or so were developed into exotic (improved) pasture comprising of temperate grass mixture (Cocksfoot, Italian Rye, Tall fescue and white clover). However, over the years the condition of these pastures got degraded; there was encroachment of grazing land by unpalatable species such as rhododendron and other shrubs and the carrying capacity of the farm got reduced due to the poor management by the community.

Mr. ChimiRinzin led and organized the conversion or development of 127 acres of fallow/degraded native grazing land into improved pasture in the last two years.

The community land is at the base of the mountains. Some of the land is covered by blue pine; some part is covered by shrubs and sedges while some parts are stony and rocky. However, majority of the area is gentle plains occupied by natives grass species and exotic pasture (300 acres). The area experiences six months of rain and it generally gets wet and marshy during summer.

Although the farm area is big, the grazing area is limited by shrubs and unpalatable species. The farm has about 136 animals of which about 50 animals are milking cows currently.

The land belongs to the whole community of Tang sub-district of Bumthang owned by 288 households. The community consists of 288 households.

Types of fodder species available :

The exotic fodder species available the farm are cocksfoot, Italian rye grass and white clover



which constitutes temperate grass mixture. However, annual fodder crops such as oats and turnips are also cultivated for winter feeding. On the other hand, there are also some native grass species that are grown naturally.

The community had selected one of the members and had appointed him as the Farm Manager who is assisted by four hired farm attendants. The Farm Manager and the farm attendants look after the pasture normally. However, during fodder conservation (silage and hay making), the households (community) also contribute labor for the activity.

Regulations in the management of lands

The forest Act 2002 of Bhutan states that if a particular land registered in a person's name is not utilized for more than 10 years, the Government has the right to take back that land. Burning as a management tool which was practiced by the herders in the high altitude areas is also restricted by the Act.

Mr. ChimiRinzin led the improvement of community grazing land at Wobthang, Tang, Bumthang. He had acquired small fund from GEF-LDCF (Global Environment Facility for least developed countries fund) and carried out pasture development by organizing and hiring tractors and laborers from the locality. In two years, he was able to develop more than 127 acres of pasture in those degraded native grazing lands which consist of cocksfoot and Italian rye grass (species). The native grazing lands of Wobthang were encroached by unpalatable shrubs and other grasses over the years that reduced the size and quality of grasslands for the cattle. Although Mr. ChimiRinzin works on the production of fodder seeds and fodder germplasm at the National Research and Development Centre for Animal Nutrition, he had taken this activity as an additional initiative solely for the community. He had also carried out 147 acres of forage and fodder tree plantations across the country during the last five years.

Some of the highlights of his activities are as given below:

Status of pasture land after his intervention and number of animals being grazed and families benefitted.

Although the number of animals had not been increased with the enhancement of grazing resources, the milk production of the farm had increased by about 1.5 litres/day/animal owing to



Fig 1: Pasture development, Wobthang, Tang, Bumthang

good quality of forage. The quality and coverage of pasture (grazing land) had significantly increased. (forage)

Any knowledge on herbal remedies for animals, nutritional value of fodder species, and management of CPR / Pasture land etc.

Although there are several herbs reported in the country especially on traditional medicines for humans, very little is known about the herbal remedies for the treatment of animals. However, the animal health division of the Department of Livestock had initiated some studies on indigenous knowledge of animal health. The highland livestock herders seem to have some knowledge on management of common pasture resources while the farm management has knowledge on the management of improved pasture such as pasture cleaning, fertilization, rotational grazing and fodder conservation (hay and silage making).

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Bargur Cattle Breed in Erode District, Tamil Nadu

Conserved by Mr. Kenja Gouda



Name of livestock keeper : Kenja Gouda
Full address : Oosimalai, Bargur post, Anthiyur taluk, Erode district
Mobile : 9482191791



Kenja Gouda Wife

Mr. Kenja Gouda (aged 43 years) illiterate living in Oosimalai village, Bargur, Anthiyur taluk, Erode district. His family has 1 son and 2 daughters. Mr. Kenja Gouda owns 3 acres of dry land cultivates beans, cotton, ragi, sunflower. He is keeping adult cows 40, bulls 4, calves 10 totalling 54. His wife is also engaged as agricultural labourer. He lives in 4 months (Thai to Chithirai) in Usimalai, Bargur village. Balanced 8 months he lives in Nalu Road kombaikadu in Karnataka for the purpose of cattle pastoralism. Nowadays poor rain and lack of water facility he is unable to multiply the cattle. Every day he eats morning breakfast then prepare the lunch and went kombaikadu hills shepherd the cattle around 7.30 a.m. in the morning and he returns with his cattle in the Nalu Road cowshed in the evening. He does not give water and feed to the animals in the cowshed. He does not have his own cowshed. The owner of the cowshed every day collects the cow dung as rent. He does not milk the cows for sales purpose but use small quantity for family use. He allows the calves for sucking the milk ensuring good growth rate. He does not sell female calves. He sells only bull calves to other villagers for draught and Jallikattu purpose.

Breed characters :

'Bargur' is a cattle breed found around Bargur hills in Bhavani taluk of Erode district of Tamil Nadu. There are about 200 families maintaining about 15,000 cattle. Maintained to carry out agricultural operations in hilly terrain, this breed is also well known for its trotting ability. It is brown in colour with white markings over the body. Horns are light brown in colour and emerge closer at the root and are inclined backward, outward and upward with a forward curve, which is sharp at the tip.

The Bargur variety faced threat as it relied on grazing inside the forests whose access had been denied to it.

Economics of herding

The main source of income for Bargur cattle herders in this region is from the sale of calves. Calves are maintained 12-18 months and then sold either in the Anthiyur cattle market or to traders from Kerala and Andhra. A healthy calf is sold for approximately Rs 20,000. He sells about 30 calves in a year and earns upto Rs. 3.5 lakhs. He meets the need of local farmers in Chamrajnagar district, Karnataka, Bargur Panchayat in Erode district, Tamil Nadu where farmers use plough bullocks for second time ploughing. First time ploughing the rough field is performed by using tractor. Second time ploughing is preferred by using bullocks before sowing operation. However, over the last 2 years, since the lockdowns due to the COVID pandemic, these markets have not taken place. Herders have been unable to sell their calves. This has caused some financial strain. He is collecting cattle manure in a heap and it is given to the land owner free of cost for exchange of cattle shed or land lease fee. The owner is using this manure for his agriculture field by raising ragi, banana and sorghum. This way he helps promotion of organic farming in Chamrajnagar district.

Usually, the dung is collected by women in the herding family. Once the flock has left to graze and the pen is empty, the dung is shoveled into a heap. Many herders may have adjoining pens, or a single herder may use a stand-alone pen. Smaller enclosures, with roofs are built for calves. Forest department in Tamil Nadu state is not allowing them to pen their cattle during night time. Because of this restriction he has migrated to Karnataka and graze his cattle for 8 months.

When the grass is lush, a herder may travel about 4 km to graze his flock. However, during the dry months, a herder may travel as far as 8 km each way to provide fodder for his animals. According to Idiyamal, his wife an animal's mood is exactly like a human, "if there is good food and water it will be happy, when that is not there it will seem sad. When it is sad, it will wander off sometimes and look tired. It will seem dull".

Health of the Animal

Elders in the family are known to have specialized knowledge about traditional medicine. There is a difference in the knowledge possessed by the two herding communities of the region- the Lingayats and the lambadis. This information is not easily exchanged or shared with outsiders. The Lingayats believe that their treatments will be ineffective if performed by outsiders.

Some herders suggested that their animals fall sick more often now-a-days. They believe this is because the quality of the grass the animals graze on has deteriorated over the years due to the lack of rain. This impacts the animal's health.

Calves are left behind in the pen while the flock Is taken to graze. They may be given special attention. They are kept in special enclosures. When a calf has the tendency to eat mud a small basket woven with a local grass is tied around its mouth to prevent it from doing so.

Generally Lingayat community is rich in ethno veterinary practices and all herders including Mr. Kenja Gouda is aware of traditional medicine followed for animals as shown below :

For management of servicing bulls

In this forest village farmers maintain, indigenous type of cattle called 'Bargur' and 'Malaimadu'. 'Bargur' breed has white tinges in red coloured background locally called 'semmani'. For grey coloured type they call "Malaimadu" type. For developing good quality animals bulls are carefully selected and maintained. In order to increase the vigour and maintaining its serviceability the following treatments are followed.

For 'Sem mari' type (Bargur cattle breed) of bulls, flowers of Senbagam (*Michelia champaca*) (3 numbers), matured coconut (3 numbers), raw rice (1 kg), jaggery (500 gm) are to be ground and then banana ('monthan' variety 3 numbers), grapes (500 gm), cow ghee (100 ml) are to be added in 3 litres of milk and thoroughly mixed together and administered orally. This has to be performed on Sunday and once in a year.

For grey coloured bull (Malaimadu cattle type) flowers of Kattamalli alias sendumalli, Athamakkarai, Kamsakkarai (1 rhizome of tuber),

Mathamasakkarai (3 rhizome), Bhoomi sakkrai (1 rhizome), matured Coconut (3 numbers), raw rice 1 kg, Jaggery 500 gm, cow ghee 100 ml are added in 3 litres of milk and mixed together thoroughly. This has to be administered orally only once in a year in a Sunday. While giving this treatment the bull should not be allowed for service on the day of treatment.

For ectoparasites

Ecto parasites like 'Unni' (mites) are treated with exposure to smoke / fumigation made out of leaves / bark of Purasu (*Chloroxylon swietenia*), Vidathalai (*Dichrostachys cinerea*), Doopamaram (*Boswellia serrata*) (the bark exudates of the tree is used as incense stick or used for good odour smoke) and performed on new moon day.

For Sappai disease/black quarter

This disease is noticed during June, July. The disease is characterized with swellings in hind quarters, crepitating sound on pressure. The animal will die suddenly. For this Kadukkai (*Terminalia chebula*) (20 numbers), seeds ground after removing the kernel and to be mixed with lime (Calcium hydroxide), castor oil, latex of Kalli (*Euphorbia tirucalli*), are to be mixed together and branded over the sappai region (in the front of back quarter).

For any boils / swellings

Swellings or boils noticed in animals are cured with leaves of Puliyarai, Jatropha leaves are to be burnt over fire and mixed with curd and applied over the region.

For "kundisilai" disease

The cattle affected with "Kundisilai" have symptoms with nasal discharge and will not take feed and die within 3 days.

This disease is noticed after drying of grass due to long dry spell. For this animal is treated with grinding of "Veliparuthi" (*Pergularia daemia*), black pepper, garlic, hot water and mixed in milk and administered orally

Interaction with wild animals

In the forest leopards, tigers, foxes, elephants, and snakes are a threat to herders and their flock. Several herders reported that they felt conflict has increased more recently. When cattle is attacked by a wild animal, it must be left behind in the forest since it is too far to bring back to the village. Bol Thamadi, a herder, mentioned that recently one of his animals was stomped to death by an elephant, while it was drinking water inside the forest. Most herders felt that although there were compensation schemes, they were unable to afford the money required to make the compensation claims.

Besides this, within the village, monkeys often rip apart the plastic sheet roofs of the temporary shelters in which herding families reside. Women in the family remain home to prevent this from happening.

Tradition of herding

Herders reported that they had been herding for many generations. Some women in the community also take animals to graze. Herders said, “we learnt about all this through our fathers and brothers. Young boys in our families go to school during the week and come with us to the forest on the weekends. If a boy is less interested in studies, he comes with us. If he doesn't enjoy being in school or coming with us, he may also work in granite stone quarries in the neighboring regions.” Idiyamal says, “we would not mind if our children took to this work. However, income from this needs to improve.”

According to a group of herders, young boys must go along with the elders many times to reach a level of maturity before he can take a flock to graze on his own. He needs to develop the 'courage' to go and face challenges by himself. In every flock a bell is tied around the neck of one or two animals in the herd. These bells are purchased from the local market. All the animals look out for the sound from that animal and stay close together. The sound of the bell also helps the herder keep track of their herd. Jogappa says, “we carry a stick, anyone, a young boy, or an old man can carry the stick with them for safety”

Cultures of Herding

Animals in the herd are given human names. Names include marvalli, karti, sivalatre, chankrati, gouri, manjumale, bommi. Herders speak of their animals with endearment. Calves are named as soon as they are born. Kempe, a herders wife says, “when I call out the name of a cow from my herd from across the mountain, she will come and stand before me in a second”. She says every animal has a personality, “some are pleasant, some are irritable, some aloof.

Herders meet each other along routes during the day, “we stop to chat with each other, and walk and talk for some part of the route”, says Idiyamal. We are never bored. If there is no grass and our cows are unhappy that's when we are unhappy. If there is grass, there are no worries in life.”

When it is time to return home to Bargur at the end of the season, families load their belongings onto a pickup truck to be transported. “We didn't have donkeys or horses. Before we used vehicles, we carried our belongings as a head load”, said Bommi.

A group of herders reported being from Usimalai, Bargur. During the season the entire group of herders from Bargur migrates to the forests with their herds. “Our deity is in the Mahadeshwar hills. There is a big festival in the temple during Diwali.”, says Joggaiah, a Lingayat herder. A popular staple in their homes is Ragi Roti along groundnut coconut chutney or ragi mudde along with soppusaaru, Lingayat herders follow strict rules about purity of food. They do not eat food or drink water outside their homes. There are also a few Christian herders in the region apart from Lambadi herders.

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Management of Korangadu Pasture land in Tirupur District, Tamil Nadu

by Mr. P.Velusamy Gounder



Livestock Keeper address	:	Ellai Thottam, Palanigoundan Valasu, Nallampalayam Post, Tharapuram Taluka, Tirupur district-638 661.
Cell	:	94860 55094
Total Land Area Owned	:	19 acre
Korangadu Land	:	12 acre
No. of livestocks	:	Cows 4 (Kangeyam Breed), Sheep 45
Name of Grass Species in Korangadu	:	Kolukkottai pul, Thathara, Karunkollu, Sanappu pul, Arisi pul, Savarikodi, Sulli Mulli
Trees found in Korangadu	:	Velvel, Neem, Voonjal, Palamaram, Kiluvai

Management of Korangadu :



Pruning of trees of Kiluvai, Velvel maram will be undertaken. In the fences Kiluvai will be planted if there is gap in the hedge rows. Stones will be collected and disposed from the field. He earns Rs. 50,000/- from livestock keeping.

“Korangadu” is a traditional pastureland farming system that exists in semi-arid tracts of Tamil Nadu state in southern India, namely, the Dharapuram, Kangeyam, Palladam, Moolanur and Kallimanthayam areas. Situated in the rain shadow of the Western Ghats, the region receives an annual rainfall of 600-675mm, and the red laterite or gravel type of soil does not allow water stagnation regardless of the amount of rainfall. The majority of the rural population are settled agropastoralists who depend upon livestock.

Individual farmers privately own Korangadu pasturelands and it is estimated that there are over 50,000 individuals with their own paddocks of about 1-2ha size. Approximately 50,000ha of Korangadu pastureland is evident in 500 villages in Erode, Karur, Dindigul and Coimbatore Districts of Tamil Nadu State in southern India. The size of individual paddocks of Korangadu land ranges from 1.5 ha to 10 ha depending upon the wealth status or ownership pattern. Farmers or landless livestock keepers maintain sheep, cattle and buffalo, and Korangadu provides a pasture for their animals and a livelihood for their owners.



Korangadu typically consists of a mixture of grass, legumes and tree species including annual and perennials. It has predominantly three major species of flora which are spatially in three tiers. The lower tier of Kolukattai grass (*Cenchrus* sp.), an upper tier of tree species including *Acacia leucophloea* locally called Velvel, and a live fence comprised of a thorny shrub locally called as Kiluvai (*Commiphora berryii*) makes up the middle tier.

Grazing System

The growth of the grass is evident immediately after the rainfall that occurs during three distinct seasons in this region. About one month is allowed after the rains for the grass to germinate and attain required height and after that animals are taken into the paddock for grazing.

Animals can graze on the Korangadu pasture for at least five months in a year. Besides, different local fodder species grow in such a manner that the pasture is likely to support the partial grazing of animals for at least during 8-10 months in a year. Four hectares of Korangadu pastureland is sufficient to maintain 2 adult cows and 4 calves, or 40 sheep, or 6 buffaloes or 20 goats.

Farmers divide their lands into paddocks, and animals are allowed in rotation. Grazing is permitted from morning till evening. Drinking water fetched from the village and transported by bicycle or bullock cart is available in the stone/cement troughs placed within the paddock. During December-January, if there is good growth of Kolukattai grass a few farmers harvest and store it as hay for feeding the animals during off-season. During summer, the animals are allowed to feed on the pods of Velvel trees.

The Korangadu pasturelands provide opportunities to the livestock for free grazing during October to January continuously due to growth of grass on the receipt of the north east monsoon. During March to June, when there is no grass in the pasture the cattle feed upon the pods of *Acacia leucophloea*. Whenever summer rains or unseasonal rains occur the vegetation regenerates and this serves as a fodder source for livestock.

The farmers mainly belong to the Gounder' community and land ownership of individual paddocks ranges from 0.5ha to 10ha. Dairy animals provide income to farmers through moderate milk yield. The community also maintains sheep and goats and earns income from their sale. Farmers who have many paddocks but own few or no livestock lease the land to landless livestock keepers who in turn receive an annual lease fee of Rs.5000 for 2ha of paddock.

Sometimes Korangadu land is given for long term lease basis called Othi to livestock keepers for Rs.30,000 ;whenever the livestock keeper wants to close his grazing contract then he will get back the money without any interest.

The tenure system of Korangadu grazing land is also practiced between owners and tenants when a landless tenant keeps livestock like sheep, for instance, a tenant family pays Rupees 50,000/- (approximately US\$ 1,120) for keeping 2ha of paddock and this money is refunded without interest after a period of 2-5 years depending upon the contract.

Role of Mr. P. Veluchamy Gounder

He is having knowledge of many grass species and regenerated in his fields by procuring the seed materials from where it is grown naturally. It include the following species.

1. Arisipul – Ensures health of animal.
2. Thatharapul – In cleanse the blood.
3. Savarikodi (Trichosanthes tricuspidata) – It enriches the taste.
4. Seppunerunji (Indigofera enneaphylia) – Increase body weight.
5. Mistathalai - Increase body weight.
6. Palampasi (Sida cordata) – It arrests diarrhea and stop cold.
7. Kattukollu (Cassia absus) – Rich in protein.

He is expert ethnoveterinary practitioner and his practices are given below :

For bloat in Animals

Animals will not evacuate dung and unable to urinate and always in lying position. For this palmyrah jaggery 200 gm, Aloe vera 100 gm, banana 10, boiled gruel of sorghum (250 gm broken seeds is to be cooked) are to be mixed together administered orally. The animal will evacuate in about half an hour and become normal.



He is cultivating Pirandai in front of sheep shed

For Conjunctivitis in eye

If the animal developed symptom of Conjunctivitis in eyes it can be cured (if the symptoms are treated with in 30 days) by soaking flowers of nandiyavattam (*Tabernaemontana Divaricata*) (10 flowers) in water over night and the extract is squeezed as drops into the eyes.

For animals unable to walk and for fever

If animals are suffering from fever and unable to walk is locally as viruppu. For this the ingredients required are gingerly oil 150 ml, black papper 50 gm, dried ginger 25 gm, asafoetida 10 gm, gruel made of ragi floor (using 250 gm of ragi powder).

All the above items are mixed together and administered orally once. cow dung paste in to be rubbed below the knee level for all the legs of cattle.

Animals not coming for heat

Palmyrah jaggery 250 gm, small onion 250 gm, cumin 150 gm, Kathakodi (*Cocculus hirsutus*) plant 4 hand full leaves are to be pounded well and made into 3 bolus and administered daily for 3 days.

For deworming

Neem oil 150 ml, turmeric powder 50 gm, black cumin 50 gm, tender coconut water 500 ml. Black cumin is to be made into powder and mixed with other ingredients and administered orally.

For continues diarrhoea

Leaves of Palampasi (*Sida cordata*) 250 gm, unripened pomegranate fruit 5, unripened guava fruit 5, cumin 10 gm are to be ground well and mixed with buttermilk of buffalo and administered orally.

For Foot and Mouth Disease

Banana fruits (2) soaked in gingelly oil in to be administered orally for 3 days. Ghee of pig is to be applied externally over the lesions of foot and mouth region.

For Poison bite

Rhizome of Akasakilangu (*Corallocarpus epigaeus*), roots of urikka plant (*Aristolochia Indica*), leaves of Siriyangai (*Andrographis paniculata*), Periyangai (*Polygala elongata*) are taken 50-100 gm each and pounded well. This is to be mixed with goat's milk administered orally.

For Retention of Placenta

Sirukumatikai (*Citrullus colocynthis*) fruits are to be boiled and administered for 3 days.

For Increasing body weight of animal

Puliyampirandai (*Cissus quadrangularis*) rhizome is to be ground well and administered orally for 3 days.

Documented by :

Nallasenapathy, Nallampalayam Village, Palanigoundanvalasu Post,
Dharapuram Taluka, Tirupur District.
Cell : 9443710846

Development of Pasture land in Kutch district, Gujarat

by Kanakpar Gau Seva Samiti

1. Name of Pastoralist/ community and Identity number

KanakparGauSeva Samiti (KGSS)

2. Address & contact phone number

VH Post Kanakpur, Taluka - Abdasa, District - Kachchh Member- Mr. VadilalPokar

Contact: +91-9825568475 (Speaks Hindi, Gujarati) President -

Mr. VasantbhaiVeljiDayani

Contact: +91-9428472434 General Secretary- Mr. DineshbhaiRamjiyani

Contact: +91-9428220050 No. of animals owned species wise & breedname Kanakpar villagers have nearly 400 cows of a breed called 'Kankrej' and a lower population of less than 30 buffalos of a breed called 'Banni'.

3. Land area owned and crops grown

The total gauchararea (official pasture land of the village) is 98 hectares, of which nearly 13% (12 hectares) of the area is under fodder cultivation of Sorghum sp. through a rain-fed cultivation system. Moreover, in collaboration with The Corbett Foundation (TCF), 18% (17 hectares) of gaucharhas been developed into scientifically managed fodder plots. In this area, four different grass plots (4 hectares each) consisting indigenous grass species viz. Dichanthium Sp., Cenchrus Sp., Cymbopogon Sp., and others have been developed, and a "Rotational and Controlled Grazing System" is being implemented. These plots are equipped with predator proof chain-linked fencing. Recently, an additional 5% area (5 hectares) is being developed as a fodder plot in collaboration with TCF and The Habitats Trust(THT).

The development of the grass plots with its scientific management was initiated in the year 2017 and nearly 30 tons of fodder was harvested from these plots during the year 2020. These grass plots are now self-sustainable and the committee expects similar production in the coming years.

4. How many generations involved in livestockkeeping?

A majority of the households of Kanakpar village own livestock, mainly cows. Livestock rearing is being practiced since the last three generations. The organic by-products like milk and ghee are also being produced by the villagers under an initiative of organic food.

5. How he contributed in CPR/ pasture land development

Despite the government rule, where 17 hectares of village pasture land is allotted to each village per one hundred livestock, Kanakpar never had any registered village pasture

land. Therefore, through collaborative efforts, all the villagers approached the district magistrate and requested for the official registered village pasture land in the year 2009. Owing to the collective efforts and perseverance, the Kanakpar village got an official 98 hectares of pasture land in the year 2012. Currently ~50% of this land is being developed into different enclosures having palatable indigenous grass species, as mentioned above in point number 4.

The scientific management of these plots is being done under the supervision of grassland ecologists and like-minded NGOs namely TCF. Moreover, every year on 14th January the villagers of Kanakpar remove *Prosopis juliflora*, an invasive exotic plant species



responsible for the degradation of grassland, to control its spread in the gauchar.

i) **Area of CPR / pastureland**

The total land area under pasture land is 98 hectares. Of which some area is developed as fodder plot as described in point 4.

ii) **Name of CPR / Pasture land - specific name as called by local communities & classification of land**

The CPR is locally known as "Kanakpar Gauchar". The land comes under the category of 'official pasture land', allotted to Kanakpar Gram Panchayat.

iii) **How many animals graze this area? How many families depend on this area?**

More than 400 livestock from Kanakpar village graze in this area. Additionally, the livestock from the surrounding villages viz. Mothala, Nundhatad and Bhavanipar. While the harvested fodder from controlled/managed plots is stored in a closed room and used during famine for the village livestock.

More than 500 villagers who are directly or indirectly associated with pastoralism depend on this area for the supply of fodder.



iv) Legal authority for the land/ownership

The land has an official status of village gauchar(pasture land) and is being owned by Kanapar Gram Panchayat and managed by KanakparGauSeva Samiti (KGSS).

v) What are all fodder species available?

The following plant species are reported from the controlled fodder plots.

Sr. No.	Scientific name	Vernacular name
A. Grass		
1	Dichanthiumannulatum	Denai/Jinjvo
2	Cenchrus sp.	Dhaman
3	Cymbopogon martinii	Puyadi/Kuyadi
4	Stylosantheshamata	Hamata
5	Sehimasulcatum	Saniyar
6	Echinochloa sp.	Sau
7	Acrachne sp.	-
8	Chloris barbata	Shiyadpuch
9	Cynodon sp.	Chhabar
10	Dactylocteniumaegyptium	Mandhanu/Chhabar
11	Lasiurus scindicus	Sewan
12	Sporobolus sp.	Khevai
13	Aristida sp.	Lambh/Laanp
14	Cressacretica	Rudanti/Palio/Khariyu
B. Trees		
1	Acacia nilotica	Desi bawal
2	Azadirachta indica	Kadvolimdo
3	Tecomellaundulata	Ragatrhorido
4	Prosopis cineraria	Kandho
5	Balanites aegyptiaca	Ingoriyu
6	Acacia senegal	Kher
C. Others		
1	Euphorbia sp.	Dudhel
2	Salvadora persica	Kharijar
3	Zizyphusnummularia	Chanibor/Chania bor

4	Capparis decidua	Kerdo/Kera
5	Prosopis stephania	Kandi

vi) Who manages the pasture land and how?

The pasture land is being managed by the villagers and the members of KGSS under the supervision of ecologists and experienced grassland experts of various NGOs and scientific institutions like TCF.

The pasture land is being managed through the “Rotational and Controlled Grazing System”, where since the year 2017, no grazing is allowed during monsoon (July-October). After the monsoon i.e., October onwards controlled grazing is allowed only in one plot while the other plot areas are protected from grazing. The fodder developed in these protected plots is harvested and stored for the future usage during famine. The villagers follow a rotational grazing system where the grazing is rotated among four different plots alternatively.



The villagers have appointed a herdsman to graze village livestock as per the prescribed method. The appointed herdsman is paid by the individual livestock owners at the rate amount of Rs.100 per Cow and Rs.200 per Buffalo. The KGSS committee and the people of Kanakpar have been proactive in the overall development and conservation of village pasture land. The KGSS has been a proactive team where they meet at regular intervals, as and when required, and all the meeting minutes are recorded and filed for future perusal.

vii) Any traditional / social institution/rules / regulations in the management of lands

As mentioned above, scientists and ecologists from the TCF and other grassland experts working in different organizations/institutions help in the scientific management of the village pasture land. An MoU has been signed between KGSS and TCF for the long-term scientific management of the pasture land and the same is being followed.

viii) How he has contributed in the regeneration of CPR / pasture land – brief description needed (one page along with pictures)

The determination and perseverance of the villagers brought 98 hectares of registered pasture land to the village which earlier had no such land. For the same, they formed a committee named KanakparGauSeva Samiti (KGSS) to protect and develop the allotted grazing area of the village in a sustainable way through community involvement and

collaboration with like-minded NGOs. The KGSS has a separate bank account in MothalaGramin Bank, which is operated by the three members of the KGSS committee.

Out of the total pasture land of the village, 17 hectares is developed into scientifically managed fodder plots surrounded by chain-linked predator-proof fencing to protect the grass from livestock and the ground-nesting birds from the predator. To improve the productivity of fodder and reduce unsustainable grazing pressure on the pasture land, rotational and controlled grazing is being practiced. Also, every year on 14th of January, all the villagers voluntarily participate in an initiative to remove invasive plant species such as *Prosopis juliflora*, *Calotropis* spp and a few others to manage and restore the pasture land scientifically.

The relevant photographs are attached in Annexure-1 and Annexure-2.

ix) Status of pasture land after his intervention and number of animals being grazed and families benefited.

Kutch being a drought-prone area located on Tropic of Cancer, frequently face famine resulting in fodder scarcity. Kanakpar has done exemplary work by restoring the rapidly vanishing pasture land. With the intervention of villagers and formation of the KGSS committee, the 17 hectares of pasture land is now a habitat with more than 12 species of highly palatable and nutritious indigenous grass species. Addition of a new 5 hectares fodder plot is in the development process and will be ready by next year, resulting in a total of 22 hectares of protected pasture land. The activities like removal of invasive species, control and rotational grazing help in improving the productivity of fodder.

The development of scientifically managed fodder plots is supporting more than 400 livestock, benefitting the families since the last two years. Such scientifically managed fodder plots resulted in production of 30 tons of fodder during the year 2020 as the land is self-sustainable the similar results are expected in the upcoming years as well. Moreover, such habitats may also serve as a 'Biodiversity Hotspot' amidst the rapidly degrading habitats of Kutch.

x) Any knowledge on herbal remedies for animals, nutritional value of fodder species, and management of CPR/Pasture land etc.

The important indigenous plant species like *Asparagus racemosus*(Shatavari), *Tecomella undulata*(Ragatrhojido), *Dichanthium annulatum*(Denai/Jinjvo), and others play a significant role in improving the nutritional deficiency among the livestock. Moreover, a few villagers have also started utilizing the wild plant species for various medicinal purposes at household level.

xi) Two references for his role in CPR / pasture land development**1. Mr. KedarGore**

Director, The Corbett Foundation
Member IUCN Commission on Protected Areas, South Asia Email:
kgore@corbettfoundation.org
Contact: +91-9820231239

2. Mr. Mansukhbhai Suvagiya

Head, Jalkranti Trust, Rajkot
Email:info@jalkranti.org Contact:+91-9426251301

Yak Farming

by Misgar Livestock and Dairy Development Ltd.

Address of the Community	:	Village : Misgar
Tehsil	:	Gojal, District Upper-Hunza, Gilgit-Baltistan Pakistan
Telephone/Cell Nos.	:	Mr. Hasil Murad, CEO: 0092 - 3555553341 Mr. Sher Shah, Secretary: 0092 - 03462233127
E-mail	:	pamiryakfarm@gmail.com shershah77@gmail.com

It is an organization of Wildlife Conservation and Community Development Organization Misger, Gilgit Baltistan. Misger Valley in Gilgit Baltistan is an agro-pastoralist community. After reduction in household level Yak herd size, in 1986 all the households in the village decided to collectivize the yak for summer grazing and winter winter collective keeping through establishing a collective yak barn. By doing so they were able to efficiently bred, cull and sell the yak and divided the money accordingly to the different households. After three decades of collective yak farming they reorganized the yak farm on a collective basis.

Brief information about settlement :

In way back 1842 (the Current Population)

Location:

The Last village of Pakistan at extreme North
At the junction of Pak, China and Afghanistan Boundary
225 km from Gilgit
120 km from Hunza

Surroundings :

At Extreme North people's republic of china (prc)
At north west Afghanistan
East Khunjerab National Park (knp)
West Chipurson and Ramingi
South KKh/Sost

Economic sources:

Agriculture	:	75%
Rear Livestock	:	10%
Business	:	07%
Services	:	08%
Average Annual Income	:	20,000/- (Equal to \$250 pm
Average Land possession	:	2 acre

Educational status

Master level	:	120
Graduation	:	280
Secondary School Level	:	480
Elementary	:	800
Literate	:	150
Illiterate	:	140

Basic facilities

Government Schools = 2 (girls and Boys)
 Community school = 1 (mixed education)
 Government Dispensary
 Government Electricity
 Government Telephone Exchange
 Government Post Office
 Government Veterinary Dispensary
 Akdn Potable Drinking Water Supply

COMMUNITY ENTITIES**Communal Organizations:****a). Profitable:**

1. Yaks Farm and dairy Development Company
2. Community Control Hunting Area (trophy hunting)
3. Community Based Saving Organization (AKRSP)

b). Non Profitable

1. Wildlife Conservation & Social Development Organization.
2. Misgar Mines And Minerals Pvt. Ltd.,
3. Misgar Agriculture Cooperative Society Ltd.

PAMIR LIVESTOCK & DAIRY DEVELOPMENT PVT. LTD.**Organization's Profile**

Established in	:	1988
Registered	:	registered with SECP Under The Companies Ordinan 1984 Government of Pakistan.
Registration No.	:	R/JSC/GB-14/2016
Company type	:	company by shares of members (the only company on yaks by community members in hunza)
Head Office	:	Village Misgar Gojal Hunza
Branch Office	:	Jutial Gilgit

Governing body:

- Chief executive officer (C.E.O) (1), Company secretary (1), Directors (8), Members (Share holders)

Governing body selection:

- Voting by members (share holders) as defined in the memorandum of articles and memorandum of association. (legal document)

Objectives of the company

- Uplift economic conditions of the members (community) through yak farming & cattle farming.
- To meet market demands of meat, milk, dairy products and wool & wool products.
- Provide employment to local community.
- Conserve natural resources by providing alternatives to the community
- Develop linkages with similar domestic, national and international companies and benefit from their knowledge and experiences.

Share Holders

- Share holders at the time of establishment: 106
- Share holders now: 300
- Share value at the time of establishment: 1000
- Individual share value now: 50,000.00
- Livestock and dairy development department, government of gilgit-baltistan.

Cooperative partners

- Livestock And Dairy Development Board (LDDDB) (federal Government) Provincial Office Gilgit
- Aga Khan Rural Support Program (AKRSP)
- ICIMOD
- Wildlife And Parks Department, Government Of Gilgit-baltistan.
- Gojal Rural Support Organization (GRSO), Sost, Gojal Hunza

Current Activities

1. Yak Breeding
2. Yak meat supply in market on a very small scale (occasionally)
3. Purchasing and selling of Yaks.

Future Plan

1. Yak breeding
2. Yak Meat marketing and supply
3. Yak wool and fiber marketing and supply
4. Dairy products from yak milk
5. Meet demand for yaks in the area
6. Cattle Farming
7. Marketing, Value Chain and Brand Development

Current value of yaks

S.No.	Type of Animal	Number	Value in Rs.	Total Amount in Rs.
1.	Yaks (male) Big	10	110,000	1,100,000
2.	Yas(male) Small	06	65,000	390,000
3.	Yaks (female)	45	65,000	2,925,000
4.	Yaks (female) Small	07	55,000	385,000
5.	Yaks (babies)	35	35,000	1,225,000
6.	Yaks (new Born)	53	10,000	530,000
7.	Total	156		6,555,000

6.66 Million

Pastures of Misgar Valley

Kilik and Mintaka & Dilsung are the main pastures of Misgar Valley on Pakistan-China & Afghanistan border .

Kilik and Mintaka were the passages on the ancient Silk route

Kilik has an altitude of 4827m above sea level and the distance from Misgar to Kilik is 50 Km (approx.)

Mintaka has an altitude of 4726m above sea level and the distance from Misgar to Mintaka is 40 km (approx.)

These pastures are the hot spots of wildlife diversity .

Opportunities:

Huge meat demand in market
Selling and purchasing of yak breeds
Demand for milk and dairy products especially butter
Selling of yak fiber to international buyers for sports garments

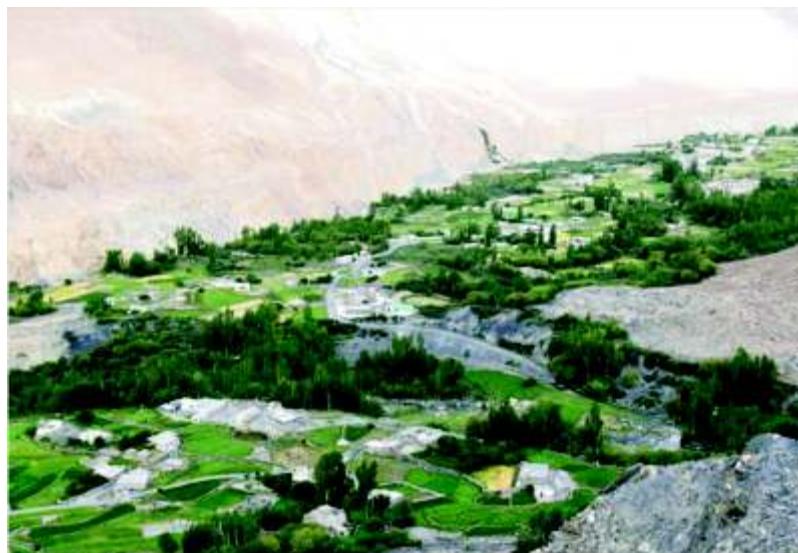
Future plans

Increase yaks population keeping in view huge area of pastures
Establish slaughter house and meat shop in SOST market (an urban place) to cover meat demand and boost business activities.
Introduce yak milk and dairy products especially butter
Processing of yak hair and extract fiber, sell to international buyers
Branding and marketing to extended markets

Challenges

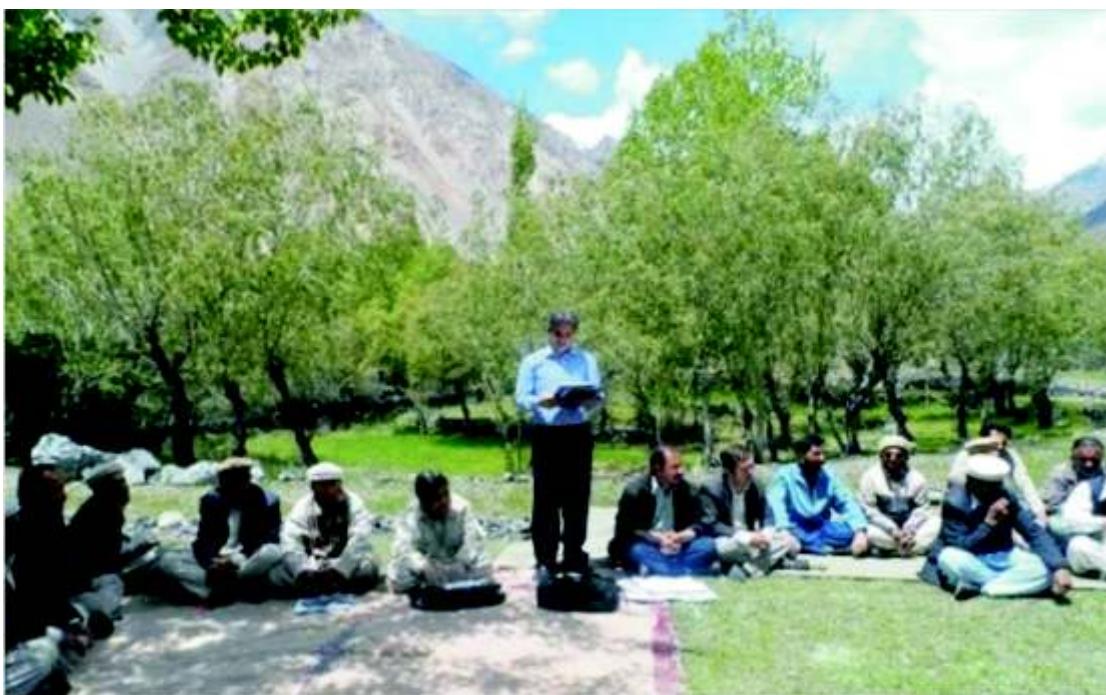
Weak financial position to boost business activities e.g. marketing, branding, supply chain, cold storage etc.
Unavailability of skilled human resource in yak farming.
Severe cold weather condition in pasture for grazing.
50% land is still barren, need to develop to produce fodder/grass for yaks.
Pasture development for grazing and grass storage.
Lack of infrastructure e.g. tracks, shades to save yaks and cattle, specially in rainy or snowy days.

Misgar Valley





Community mobilization Meeting 6-7 June 2015 in Misgar





Community mobilization Meeting 6-7 June 2015 in Misgar



Yaks in pasture





Yak Grazing

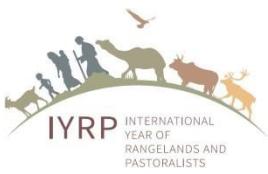




Yak Herd



NATIONAL FEDERATION
OF PASTURE USER
GROUPS OF HERDERS



Award for Sustainable Pasture Management and for Conserving Rangelands -2021

Award for Sustainable Pasture Management and for Conserving Rangelands 2021

PROFILE OF PASTORAL COMMUNITIES

AWARD WINNERS



NATIONAL FEDERATION
OF PASTURE USER
GROUPS OF HOLDERS



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The UN Framework Convention on Climate Change calls Article 6, Section iii) public participation in addressing climate change and its effects and developing adequate responses; and “UN Convention to Combat Desertification”: Section 3, Article 19 on “Capacity building, education and public awareness” c) “encourages the establishment of associations that contribute public awareness”. Also the proposal for An International Year of Rangelands and Pastoralists, Section A on “Awareness rising”, enhances the perceived natural and cultural values of rangelands and pastoral livelihood systems, enhance pastoralists’ rights and pride in their own cultural systems and traditions and foster innovation towards sustainability and overcoming poverty”.

This is first Award for Pastoralist communities in Mongolia and Central Asia on community based participatory rangeland management and balancing ecological capacity of pasture with animal numbers and sound use of the rangelands. The award is aim to promote Mongolian Government proposal of an International Year of Rangelands and Pastoralists.

We are thankful for all our partners to organize this “Award Sustainable Pasture Management and for Conserving Rangelands 2021” in Central Asia and Mongolia, particularly for the National Federation of Pasture User Groups of Mongolia (NFPUG), Department of Policy and Coordination on Animal Husbandry of the Ministry of Food, Agriculture and Light Industry, Mongolia (MoFALI), Central Asia Pastoral Alliance (CAPA) of International Land Coalition, ILC, Central Asia & Mongolia Regional IYRP Support Group (CAM RISG) and the Mongolian Working Group (WG) on “Territories of Life” for Natural Resource Management Communities, Pasture and Forest User Groups, and Global/Asia Rangeland Initiative.

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We look forward for our continued cooperation for awareness rising and the encouraging local communities for sustainable management of rangelands and improving their livelihoods.

Dr.Hijaba Yhkanbai

15 Oct., 2021

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PROFILES OF “BICHIGT KHAD” PUG

COMMUNITY LEADER: B. BAYAN-OCHIR



Uvs aimag Davst soum "Bichigt khad" PUG leader Bayan-Ochir Bayanzul, with his wife Chimed Baatar

1. Name of the pasture user group:
Bichigt Khad Pasture User Group
2. **Community leader:** Mr. B. Bayan-Ochir
3. **Full address:** Bichigt Khad PUG, Khandgait bag, Davst soum, Ubs aimag, Mongolia
4. **Contact phone:** 976-86081145 ;
5. Community identification registration number: 0851002

Introduction: In 2010, 38 herder families who shares same rangeland, boundaries and interest established "Bichigt Khad" PUG in order to provide flexible management of animal husbandry and migration in accordance with local characteristics, climate change, rangeland carrying capacity, protection from degradation and improvement of rangeland. B.Bayan-Ochr was elected as the group leader by the votes of all members. Bayan-Ochir is a four-generation herder who has learned the way of herding from an early age and is now respected by many herders.

Since being elected as the leader of the Bichigt Khad pasture user group, he has led 38 households, initiated number of activities to protect rangeland, improve the quality of livestock, adjust the number of livestock to the rangeland carrying capacity, and improve herders' incomes.

"**Bichigt Khad**" pasture user group established a 15-year rangeland use agreement with the soum governor in 2016 to use 19,398,000 hectares for the purpose of protecting and rehabilitating rangeland. "It was very important step in increasing the responsibility of herders and ensuring their traditional rights to use and protect their pastures by establishing rangeland use agreement with soum governor and registering it to Department of Land Management and Geodesy's national land management integrated database .

In order to identify short-term changes in the implementation result of rangeland use agreement, photomonitoring surveys are conducted at two plots each year. Based on monitoring survey results, an annual rangeland protection, use plan is developed and implemented by a joint decision.

Pastureland management activities :Herders of Khandgait bagh calculated the pasture risk fund at 100 MNT per sheep according to the pasture risk fund regulations Bichigt Khad rehabilitated and fixed the a 16m long and 8m wide hay storage facility in the bagh center with money raised by the PUGs. The pastureland risk fund regulations are being discussed and approved by the Khandgait bagh Citizens' Public Meeting.



Bichigt Khad PUG Organized the work to provide livestock for 5-6 households. In cooperation with the Green Gold Animal Health Project the herders' "Davst Urnun Delgerekh" SCC was established and B. Bayan-Ochir was selected as the head of the SCC by the vote of all members.

From 2019, in order to adjust the number of livestock to the carrying capacity of pastures, herders sign an agreement with "Meat Market" company every year, organize livestock meat preparation, sell excess livestock from pasture carrying capacity into the market and support herders' incomes.

B. Bayan-Ochir, the owner of these successes, herder who has shown if herders work harder and harder can achieve the goals. He is a successful herder who has shown that a PUG Leader can be also the head of the Cooperatives in the soum at the same time.

He is also chosen as an active member of the Davst soum Citizens representative Khural in the 2020 local elections. In 2021, he was awarded the title of State Champion Herder for his many years of work.

Conservation of rangelands:In terms of rangeland use, Bichigt Khad PUG members rest the pasture by moving 6-8 times a year in spring, autumn and summer. This has supported the rangeland's own regenerative capacity and protecting it from overgrazing. PUG leader B.Bayan-Ochir built a bird seat covering 15,000 hectares at his own expense to protect pastures from rodents.



Figure 1. Before, and After

Activities to increase income:

In 2020, he established a herder cooperative called “Yamaat Aarag Uul” and successfully established a skin and leather tannery. This is making a valuable contribution to use sheepskins profitably and increase income which was previously discarded by herders.

In addition, 3 million MNT was spent to protect the source of the Teel spring by fencing 72m² of land. More than 15,000 livestock from 20-30 households are watered from this spring in summer and autumn.

One of the measures to improve pastures is to spread manure on pastures, which is conducted every year.



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PROFILE OF “SARY-BULAK” PUU

COMMUNITY LEADER: MS. GULJAN ASANOVA

1. Name of the pasture user group:
Sary-Bulak Pasture User's Union.
2. Community leader: **Ms. Guljan Asanova.**
3. Full address: Sary-Bulak, Issyk-Kul region, Kyrgyzstan
4. Contact phone: +996704004884
6. Community identification registration number: 108166-3302-TOC.



Introduction: Community members: 7043 people in total, 51% - women, 20% - youth. The total area of pastures: The total area of pastures in the community is 4534 hectares, of which 1219 are summer pastures, 1398 are spring pastures, and 1917 are winter pastures. Cattle - 17278, Pasture committee's members - 14 people, 9 of them are women.

Pastureland management activities : effective seasonal rotation of pastures, planned and regular mobility of livestock on the territory, change of pasture areas according to the level of degradation, measures to restore the livestock of pedigree animals, conservation and development of breeds, restoration of degraded pastures, improvement of the population's access to water resources, conservation and growth forest cover, effective interaction with the local population, community mobilization, improvement of the cover of local grazing areas. These methods are used not only for restoration, but also for periodic prevention of pasture degradation.

Conservation of rangelands: Asanova Guljan has been working as the chairman of the pasture committee of the Sary-Bulak ail Okmotu of the Tyup district of the Issyk-Kul region since August 1, 2014. During this time, she did an impressive work together with

pasture users in rural areas, took an active part in the full implementation of various projects to improve the condition of pastures, pasture restoration, and improving of the degraded areas.

The average level of degradation is 38%, however, according to the results of the work of the Pasture Committee, more than half of these lands have been restored. This was done through the implementation of a strategic plan for effective management, use and planning of pastures, which was developed by the pasture committee, discussed with the local community and approved by local MPs. This plan made it possible to qualitatively implement the seasonal rotation of pastures, taking into account the current state of pastures and livestock. As a result of all these measures, all pasture areas are used according to the planned system of livestock mobility and are not subject to congestion, trampling and degradation.

Also in the community, special attention is paid to the restoration of forest cover; unique nurseries have been created for the cultivation of pasture trees, including the Tien Shan spruce, where the grown seedlings are subsequently planted on the territory of remote pastures, thereby creating conditions for the natural reproduction of these trees. Over the past 10 years, more than 80 hectares of land have been planted with seedlings, mainly on the slopes of hills and mountains.

Periodically, the most vulnerable areas of pastures are restored by overseeding pasture grasses, as well as by fencing these areas for rest and recovery without grazing for up to 5 years. For example, this year it is an area of 6,000 hectares, where livestock grazing is prohibited, and to support the owners of livestock, an additional 25 hectares of corn has been sown, from which 70 tons of silage is obtained.

In addition, a veterinary pharmacy was built in the village, yurts were purchased for shepherds to facilitate their relocation to remote pastures, and conditions were created for comfortable living on the territory of pastures for the families of shepherds. Much attention is paid to animal health, regular vaccinations of animals are carried out, preventive measures are taken to increase the potential of community residents to improve the quality of agricultural products.

Activities to increase income: To support alternative sources of income for the local population and reduce the pressure on pastures, special conditions were created at the village level, including considering gender aspects. Women were trained in milk processing at home, the production of 15 types of dairy products, drying and processing of fruits and vegetables, received special equipment and began to produce and sell finished products on the local market, the production of felt products, wool processing, production and sale of household items from natural raw materials.

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1 Pasture restoration (by leaving it for the rest) 2 Wool processing and producing the traditional items



3 Creating better conditions for the shepherds and their families 4 Cultivation of pasture trees

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PROFILE OF “ADUUNCHULUUN” PASTURE USER GROUP

COMMUNITY LEADER: MS. SOLONGO J.

- Name of the community:

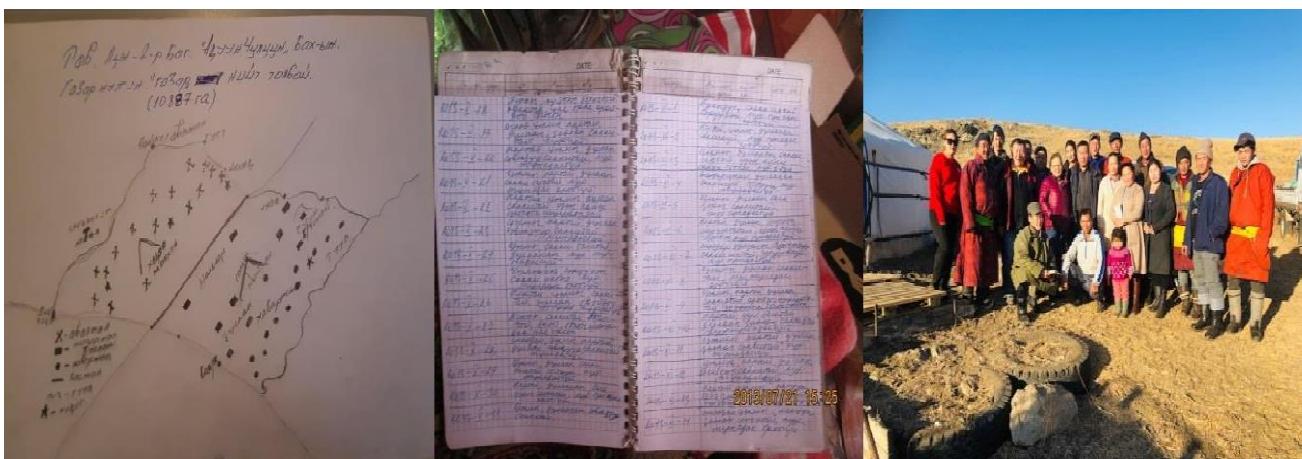
Aduunchuluun PUG

- Address/Location: Uguumur 2nd bag , Lun soum, Tuv province (aimak), Mongolia
- Community leader: Leader of PUG: **Ms. Solongo J.**
- Cellphone: 98602850
- Community Registration number:04



Introduction: Our PUGs were established in 2003 with 12 households in Maikhant Valley by herders of community named, as Pastureland and Natural Resources Management Community “Aduunchuluun”, and in 2017 we renamed as “Aduunchuluun” Pasture User’s Group, PUG.

Pasture capacity adjustment activities: The PUG has a 10.8 thousand hectares of pastureland, which is maximum of 10.9 thousand sheep in winter and spring, currently in our community 13.2 thousand sheep, which means that about 20 percent less than that. This led to the decision not to allow other PUGs, baghs, soums and provinces to come otor livestock from other herders without specific agreements. The PUGs organized a working group with two supervisors to monitor the movement of the passing otor, and to organize the grazing and rotation of pastures according to the schedule. Redistribute winter and spring manure that has not been used for 2 years. Herders are not allowed to bring in other herders' livestock from outside without informing and agreeing with the PUGs, and if additional livestock is brought in by otor from other places, so “pasture use payment” will be donated to the group's pasture rehabilitation activities at the current pastureland valuation.



Pic. 1-3 Community mapping; WFD notebook by Ms.Solongo; Community members

In 2009, in cooperation with the Common Resources Management project of JASIL Association, we participated in a participatory study by teacher's and student's survey to

improve the efficiency of livestock herding by introduction of new breeds of sheep Uzemchin tribe . In 2010, we brought rams from the Khulenbour soum of Dornod aimak, and in 2011 we also introduced new breeds of 15 mail sheep and goat from Erdenetsagaan soum of Sukhebaatar aimak and improved livestock breeds and its quality. As a result, livestock productivity has increased by up to 30 percent, making it an important measure to adjust the number of livestock to the carrying capacity of pastures.

Conservation of rangelands: The main achievement of our PUGs is that since we were first established as co-management group in 2003, since we have worked with all the members of the community to improve sustainable management of pastureland and other natural resources. Our peculiarity is that many herders and otor herders come to our community. It requires us to work joint agreement with all stakeholders, even with incoming herder's from other regions. In 2019 and 2020, the otor movement came in large numbers, but the winter and spring were was very difficult in the soum. During such a difficult time, we used the three dais WFD and agreed to make otor movements in the territory of Bayantsogt and Tseel soums. In 2018-2019 we implement community activities to monitor and reduce the rodent's numbers in degraded pasture land of the community and these pastures now improved and restored.

Also in last few years, we have implemented the following activities:

- In case of difficult times, a fee was collected from a herder household moving to an otor from a other soum in accordance with the suggested and approved payment level set by the soum Citizen's Khural .
- The new breeds has been introduced to adapt the PUG livestock number to pasture carrying capacity
- Measures have been taken to certify the winter and spring camps of herders in the area, to limit the number, and not to build new camps arbitrarily.
- PUGs took measures to protect and fence their hayfields and planted willow trees on 1 ha area in Tul river watershed pasture
- The PUG has entered into an agreement with the local government, which sets out the rights and responsibilities of the PUG leader and local governments



Pic. 4-6 Exchange in Central Asia; Community meeting; Seasonal pasture use

Activities to increase income: Our community from 2019, 1.5 tons of cashmere will be produced and supplied to Wool and Cashmere Association. Our community also marketing milk, meat and other daily food products for the consumers of the soum and the Ulaanbaatar city.

In collaboration with the JASIL , the specific location Weather Forecast Data , WFD, has been regularly delivering to herders and using it in Pasture management and livelihood improvement. Thanks to these activities livestock loss was reduced by 32-69 % during the 2011-2020. This work has been carried out since 2010 and the PUG weather information has been compiled by the soum meteorologist and is still used, especially during extreme weather conditions (winter and spring). In 2007-2010, 2015, and 2017, the weather conditions was bad, but PUG households were able to overcome all of this severe weather risks thanks to WFD .

Thanks to above joint activities of community members In last two years our Aduunchuluun community was one best PUG in the soum and the Tuv province (aimag) .



Pic. 7-8 Community goods; Food items of the community

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