

Chapter 6

Pastoralists grazing rights squeezed...

Globally, pastoralists are vanishing at an alarming rate. In India, they are pushed to impoverishment and drudgery. Herders of cattle, sheep, and goats play a vital role in protecting and restoring fragile ecosystems. Approximately 35 million pastoralists, spread across 200 communities, manage a livestock population of over 50 million animals. Exports of milk, meat, leather, wool, and animals used for traction and manure contribute to livestock raising's foreign exchange earnings.

In today's world, pastoral institutions face the increasing threat of mass displacement from economic factors such as agriculture, population growth, droughts and herd displacements. Pastoralism appears to be losing the battle as a way of life and a production system. Pastoral activities are complex, and it's dependent on the delicate balance between human population, livestock and natural resources. Despite its reputation as one of the most challenging and complex agricultural and natural resource development tasks, pastoralists tend to be among the least educated and least empowered of rural populations. In post-colonial societies, pastoralists remain largely out of the equations of power and there is no power balance between pastoralism and rural agriculture.

However, the reckless and short-sighted land policy has disrupted the movement of pastoral nomad communities, which is so critical for a successful pastoral production system. The Coronavirus and its second wave in most virulent form has pushed the pastoralists to the brink of crisis. While strategizing on combatting climate change, access to grazing lands and movement remains seamless to prevent pastoralists from being displaced and needs to be ensured by the class-in-power.

Nomads were once an important part of India's mainstream culture, living near farmers who relied on their livestock for manure. Their mobile lifestyle was soon challenged by growing urbanisation and factory systems set shortly after the British invasion. The British regarded the grazing lands as "wastelands" and nearly converted them into agricultural areas during their rule.

During her 30-year career as a UN consultant and research coordinator for the League for Pastoral Peoples, Ilse Köhler-Rollefson, said "Pastoralists transform 'waste' into value.". Wastelands, a term that dates back to colonial times, need

to be re-evaluated in India. Wastelands in India support the majority of the country's livestock population and play a critical role in food security.

Pastoralists' access to forestland denied or branded encroacher

Pastoralists' access to land and forests is impacted by the consolidation of state forests with the creation of reserve forests, wildlife sanctuaries, and other categories of forests, just as it is for adivasis and other forest dwelling communities. Notification of state forests has led to pastoralists losing traditional access to and control over grazing lands as in the case of the Banni grassland in Kutch district of Gujarat has been notified as protected forest) and the Bara Bhangal area in Kangra District of Himachal Pradesh, which had been demarcated as a Wildlife Sanctuary.

However, Governments and wildlife organisations have been pushing conservation efforts to save wildlife from extinction, but these efforts have resulted in the displacement of pastoral communities that traditionally lived in that area. Pastoralists once utilized these large areas for grazing.

"Our access to forestlands is restricted by local Forest Department officials. We avoid traversing through the forestlands as the officials demand exorbitant bribes. During the pandemic, this unreasonable rule was not relaxed. The Forest Department did not allow us to access those pasture routes close to our homes, and we could not travel along our traditional pasture routes. This is unfair to our people and livestock struggling to survive within this arid climate." said Sumer Singh Bhati, a pastoralist and an advocate for pastoral community's rights.

The Van Gujjar community, a nomadic pastoral community relies on buffalo-herding for their livelihood and it's a group of pastoralists who move from one place to another for their livelihood needs and cultural beliefs. Van Gujjars inhabit the foothills of Himalayan states like Jammu and Kashmir, Himachal Pradesh and Uttarakhand.

"Forcible eviction and beating of Van Gujjars continued, despite Uttarakhand High Court in Nainital's ruling on June 20, 2007 when it specifically stated that Van Gujjar evictions cannot take place¹ without recognition and vesting of rights under Forest Rights Act (FRA) 2006. The court heard a Public Interest Litigation (PIL) filed by the Van Gujjar community of Rajaji National Park who were issued eviction notices by the park authorities. Section 4(5) of FRA states

¹ <https://thewire.in/rights/for-how-long-will-van-gujjars-have-to-see-legal-remedies-for-their-livelihood-practices>

that no forest-dweller can be removed from the land under his/her occupation unless the processes of recognition and verification of rights under FRA are complete,” said Tarun Joshi, Co-ordinator, Van Panchayat Sangharsh Morcha.

The Uttarakhand High Court on August 16, 2018 ordered for the removal of Van Gujjar families from the Jim Corbett National Park, it said in no uncertain terms. “The Van Gujjars are a constant threat to the wildlife. The State Government, however, has taken a prompt decision to protect the persons who have encroached upon the river banks and river beds². Prima facie the proposal taken to rehabilitate the Van Gujjars is against public policy.” The High Court was responding to the State Government’s formulation of a policy to rehabilitate 57 families from the Corbett Tiger Reserve. The Supreme Court had asked to maintain status quo on the order of the High Court³. This happened on September 10, 2018, after intervention by Tarun Joshi, who appealed in the matter.

Raikas, a community of camel herders from Rajasthan have been assiduously trying to acquire grazing permits for gaining access to Kumbhalgarh Wildlife Sanctuary in the Rajsamand district. Forest officials banned the practice in 2004, citing a letter from the Supreme Court's Central Empowered Committee that recommended a check on commercial activities and grazing ever since⁴, the community has had a difficult time using the land.

Konar pastoralists of Tirunelveli and Thoothukudi districts of Tamil Nadu have local sheep breeds like Killkaraisal, Vembur, and Chevadu which are free-ranging animals and loss of grazing lands would make these native breeds go extinct. The Konars also find it difficult to navigate with their herds through the landscape for their annual migration between wet and dry areas. Most of their traditional routes have been fenced, built-up, taken over by stone quarry, or busy highways cut across it putting the herds at great risk of being run over⁵. If it continues they would turn out to encroacher in their land.

The 2020-21 policy note from the Tamil Nadu animal husbandry department attributes the 6.36% decline in sheep population in the state to the rapid urbanisation of the state with a consequent decrease in grazing lands⁶.

2 <https://www.downtoearth.org.in/blog/forests/van-gujjars-a-repeat-of-historical-injustice-61655>

3 https://www.academia.edu/44196265/FORREST_RIGHTS_ACT_FRA_2006_AND_ITS_IMPLEMENTATION_and_VIOLATIONS

4 <https://india.mongabay.com/2021/01/commentary-policy-measures-do-not-address-increasing-sedentarisation-of-pastoralists-in-india/>

5 <https://india.mongabay.com/2020/12/commentary-the-disappearing-grasslands-of-southern-tamil-nadu/>

6 <https://india.mongabay.com/2020/12/commentary-the-disappearing-grasslands-of-southern-tamil-nadu/>

Pastoralists and Forest Rights Act, 2006

Pastoralist mobility adds a layer of tenurial complexity that has resulted in comparatively few claims being filed by pastoralist communities under the Forest Rights Act. This mobility results in pastoralist communities using resource rich habitats, such as the extensive alpine pastures of the Himalayas, the arid and semi-arid expanses of Rajasthan and Gujarat, and the grasslands of the Deccan Plateau for part of the year, and village commons in densely settled agricultural communities for a different part of the year. In the former, pastoralist need for access to grazing resources is contested primarily by the forest department, which sees pastoralism as a threat to biodiversity, wildlife, and other ecosystem services. In the latter instance, it is agricultural communities competing for village commons that pose the greatest challenge to pastoralist access to grazing areas. Tenure insecurity characterizes pastoralist rights over both situations⁷.

Although the FRA acknowledges pastoralist rights, there have been relatively few efforts on the part of pastoral communities to use it to secure more assured access to forage. In Kutch district of Gujarat, the Maldhari community has made CFR claims over Banni grassland approved by both SDC and SDLC. . In Himachal Pradesh, claims have been filed by the Gaddi community, staking claim to traditional grazing rights in what has been declared the Bara Bhangal Wildlife Sanctuary. These claims have yet to be processed.

While moving through 11 states for a Study to Document the violations in the implementation of the Forest Rights and options being locally worked out by Civil Society and communities to assert their rights in general and Community Forest Rights in particular, prior to COVID -19 in March 2020 I found that there were one or few of the people's organisations or social action groups were there to lend their helping hand to nomadic pastoralists for filing their IFR/CFR claims so they find them excluded even from the good CFR titles granted in Gadchiroli district of Maharashtra or Jharkhand. In Gadchiroli, pastoralists live under the mercy of other forest dwellers for running even a CFR meeting in the forest.

Akshay Jasrotia, Convenor of Baijnath Kisan Sabha (BKS) and co-founder of Himachal Van Adhikar Manch, a state level forum of organisations working for speedy implementation of the FRA in Himachal Pradesh and who has been espousing the cause of nomadic pastoralists emphatically puts forth , "Nomadic Pastoralists have to cross over 100 Gram Sabhas but guidelines are unclear. As

⁷ <https://www.centerforland.org/wp-content/uploads/2019/03/Panel-19-Centre-for-Pastoralism.pdf>

per the political power in the vote bank politics these nomadic pastoralists, as Gujjars in Himachal Pradesh are the most vulnerable and marginalised section. As wanderers, nomadic pastoralists are always on the move so they have less of political interference. But its habitats are largest in the country. Rajasthan's camel herders, the shepherds of Gujarat and Madhya Pradesh, nomadic pastoralists across the country and goat herders are politically at weaker position as the people's organisations and social action groups working on FRA have been silent on the issues confronting these large section. Silence is not the answer. In Himachal Pradesh we didn't remain silent, the mobility of the nomadic pastoralists in such large majority if the Gram Sabha doesn't accept it then they won't allow anyone to enter Bara Bhangal. If Gadchiroli formula is applied in Bara Bhangal then the pastoralists are the real owners and they won't allow anyone. As per the revenue records in FRA, if in Gadchiroli and Jharkhand the Gram Sabha is the owner of the forest so why not nomadic pastoralists in Bara Bhangal in Kangra district be the owners of the forest? But it's not possible in the Himalayas as there are multiple forests and pastoralists need to be included in it. A small example is these 28 CFR claims in which we lend our support in filing. Apart from this, the process of filing 30-40 CFR claims and some claims from the areas of Nagri. Till its clearance from Ministry of Tribal Affairs (MoTA), a large section of the marginalised population has been left out. In the national level struggles there is discussion of it. There is no effort towards such discourse as there is no representation of the nomadic pastoralists⁸.”

“Where there is CFR claim in Banni, which is in Chamba district? Claims were not even filed. There is a Tundah Wildlife Sanctuary in Banni, give them the CFR claim. Zones closer to the protected area have different kinds of conflicts. There is example of Dhauladhar Wildlife Sanctuary as the 28 CFR claims cover the entire sanctuary, which was approved. In Gujarat, there is a Wildlife Sanctuary which was approved CFR title just 7 years ago, which they are practicing and managing efficiently. Now few examples are emerging out of core protected areas of Sundarban Tiger Reserve, Sariska Tiger Sanctuary and Jim Corbett National Park. The core is due to which internationalization continues to create full protection, to garner international gains so that money or rewards keep coming. In Gadchiroli district, 1200 Gram Sabhas has been conferred CFR titles. Hardly any forest left, which does not have CFR title. Shepherds live under the mercy of other forest dwellers. If you have live under anyone's mercy then what's the benefit of FRA? Then delete section C (1) (d) from FRA. Camel owners, donkey owners, goat herders and shepherds have a mobile-linked

8 Interaction with Akshay Jasrotia, Convenor, Baijnath Kisan Sabha, Kangra District, Himachal Pradesh

system. In the mobile pastoral system of the Himalayan landscape nomadic pastoralists have a stronghold,” added Akshay Jasrotia

These are few isolated examples within pastoral communities, although there is growing interest amongst organizations working on pastoral issues to more pro-actively engage with the FRA as a means of securing herder rights to grazing resources.

Bakarwals and Gujjars of Jammu & Kashmir and Article 370

Bakarwals and Gujjars, the pastoral community constitute 11.9% of the state’s population – 1.5 million out of a total population of 12.5 million as per 2011 census. After the abrogation of Article 370, the pastoral community’s population of 2 million are the Union Territory’s third most populous community after Kashmiris and Dogras.

The Bakarwals and Gujjars are a group of nomads, semi-nomads, pastoralists, and agro-pastoralists. They practice transhumance, traversing a huge swathe of land in the state (now two Union Territories) ranging from the plains of the Jammu region to the lush green meadows of the Valley and the treacherous, barren mountains of Zanskar⁹. These nomadic pastoralists move with their cattle and livestock, along the beautiful rivers meandering through lush green meadows and lofty mountains. Their day begins with their sheep bleating around, harmoniously in sync with the musical flow of rivers.

Bakarwals and Gujjars have lived on the land that belonged to no one, since 1960 it has been owned by the Government. Despite being scattered throughout Jammu & Kashmir and Ladakh a major portion of Bakarwal-Gujjar population lives in Rajouri and Poonch districts, which lie along the Line of Control. The mountainous terrain, climate and political uncertainty have shaped the life of these pastoralists. Due to army’s intervention for quelling the so-called insurgency operations, many pastures have been out of bounds for these pastoral community for decades

Since 2014, when BJP- led NDA came to power in the Central Government, the newer phenomenon of *gaurakshaks* patronised by RSS attacking Bakarwals and Gujjars and terrorising them. There has been number of cases where cow vigilante groups attacking the nomadic pastoralists in different parts of the state (now 2 UTs). The BJP-led Central Government had sparked accusations of religious bias against Muslim Gujjars and Bakarwals in only Muslim-majority

⁹ <https://www.facebook.com/DeraEPirPanjal/photos/a.115019353667261/213757997126729/?type=3>

state and served notices of evictions to them, who were classified as Scheduled Tribes (ST) in 1991.

Moreover, the state-sponsored practice of charging money from the nomads for *ghas-charai* (grazing), etc, adds to their woes¹⁰. The process of ‘registering’ the names of the nomads, during their migration, along with the number of cattle and livestock started during the time of Maharaja Hari Singh. This process has increasingly alienated them from the land and resources that always belonged to them.

Bakarwals and Gujjars are always be at risk of eviction until the Forest Rights Act, 2006 is enacted in the 2 UTs of Jammu & Kashmir and Ladakh. It is not possible for everyone among the impoverished Gujjars and Bakarwals pastoralists to approach the court and seek justice.

The most unfortunate event, for the Bakarwals and Gujjars, the tribal pastoralists was the “forgotten massacre of Jammu Muslims in the wake of Partition in 1947”. Extremist Hindus and Sikhs along with Rashtriya Swayamsewak Sangh (RSS) functionaries actively supported Dogra ruler Hari Singh in the massacre of over two lakh Muslims. Most of the murdered Muslims were Bakarwals and Gujjars, as it was a conspiracy by the Dogra ruler in collusion with RSS to convert them from majority in the Jammu region, into a minority. It was the time when the people of the princely state of Jammu and Kashmir, starting from Poonch and spreading elsewhere, had risen in protest against the despotic Maharaja whose forces flared up communal violence in the region. Late Ved Bhasin, a senior journalist who never compromised with his secular views was witness to the 1947 violence in Jammu and he recalled that thousands of Bakarwals-Gujjars were killed in broad daylight, and that the Ramnagar Rakh was littered with their bodies. The Bakarwals-Gujjars were also forced to migrate to Sialkot, Pakistan, alongside a large number of Muslims. While moving in batches towards Sialkot, RSS functionaries and Sikh refugees attacked them in the outskirts of Jammu and mercilessly killed most of them. The massacre and subsequent migrations contributed significantly to changing the demography of the Jammu region¹¹. Bakarwals- Gujjars were dispersed across different parts of Jammu and became even further marginalized socio-economically. The Indian Government incorporated Article 370 in the Indian

¹⁰ <https://www.firstpost.com/india/adviasis-and-the-indian-state-facing-govt-apathy-and-discrimination-kashmirs-gujjar-bakarwal-tribe-struggles-to-preserve-nomadic-way-of-life-7215331.html>

¹¹ <https://www.forwardpress.in/2020/10/article-370-out-new-domicile-rules-in-jks-gujjars-and-bakarwals-are-a-worried-lot/>

Constitution to provide autonomous status to the region, but Bakarwals-Gujjars did not benefit.

According to Bhasin, the RSS played a key role in these killings, aided by armed Sikh refugees “who even paraded the Jammu streets with their naked swords”. Some of those who led the riots in Udampur and Bhaderwah later joined the National Conference presently led by Farooq Abdullah and some even served as ministers. There were reports of Muslims massacred in Chhamb, Deva Batala, Manawsar and other parts of Akhnoor, with several of them fleeing to the other side or moving to Jammu. In Kathua district too there was the large-scale killing of Muslims and reports of women being raped and abducted. As for the attitude of the state, Bhasin alleged that instead of preventing these communal killings and fostering an atmosphere of peace, “the Maharaja’s administration helped and even armed¹² the communal marauders”. He goes on to say that many Muslims living outside Muslim-dominated areas were brutally killed by the rioters who moved freely in vehicles with arms and ammunition even when the city was officially under curfew. “The curfew it appeared was meant only to check the movement of Muslims,” Bhasin said.

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The abrogation of Article 370 has been the rallying point behind the BJP’s right-wing politics in Jammu & Kashmir. This is the only instance, however, where the BJP is challenging and opposing the extension of Forest Rights Act to the State of Jammu and Kashmir by invoking the special status.

However, this is the only instance where the BJP is challenging and opposing the extension of Forest Rights Act to the State of Jammu and Kashmir by invoking the special status. Bakarwal-Gujjars are not plagued only by their Adivasi identity, but also by their Muslim identity that brings on the onslaught from the communal forces patronised by the state. The persecution of the Gujjars and Bakarwals, however, goes back to the Poonch uprising against repressive Dogra ruler, Maharaja Hari Singh and events that unfolded resulting in massacre of them by the Dogra forces in connivance with RSS in 1947. Today,

¹² <https://scroll.in/article/811468/the-killing-fields-of-jammu-when-it-was-muslims-who-were-eliminated>

¹³ <https://scroll.in/article/811468/the-killing-fields-of-jammu-when-it-was-muslims-who-were-eliminated>

the Bakarwal–Gujjar community is marginalised, since the absence of a sound policy framework makes it easy for the state to deny them adivasi rights.

The Kathua rape and murder is an extension of the atrocities meted out to pastoral community to evict them from their land and deprive it of the basic right to life, which is how the overall functioning of the state in these sites of exception is ensured.¹⁴

The tribal nomadic pastoralists, like everyone else in the state, are very apprehensive about the plans of the Central Government. Bakarwals-Gujjars are not the inhabitants of a particular region of the Jammu & Kashmir as they keep travelling because of their nomadic life. The move to abrogate article 370 divided their home as they live in all parts of the 2 UTs — Jammu, Kashmir and Ladakh— in different times of the year¹⁵.

COVID-19 and its second wave, Lockdown and Pastoralists

Since centuries, pastoral communities have moved from place to place to protect their livelihood. Nomadic pastoralists have to ensure that their large herds get indigenous organic feed. Even in the midst of a pandemic, they cannot afford to remain indoors to survive. It was imperative on the part of the administration and the concerned authorities to ensure that pastoral communities were educated enough to protect themselves from deadly virus, but it was never done.

Pastoralists are required to be with their livestock throughout the day to feed them. Sun hovering over their head in the scorching heat made it difficult for the pastoralists to put on N95 or surgical mask, while moving with their livestock. When the temperature rose, the pastoralist found it difficult to use a mask while taking their herd to the fields and grazing grounds. Instead of mask, they quickly wrapped *gamucha* (a traditional thin, coarse cotton towel, often with a checked design) across their face whenever they confronted policemen patrolling on the road.

Pastoralists move with large herds of livestock, traversing long distances and passing through a multiple states. They would use selected markets to sell livestock products and to buy items necessary for themselves and their livestock. Income is derived from the sale of milk, wool, leather, meat, and other livestock products along the routes and the access to those markets.

14 <https://www.epw.in/engage/article/why-kathua-case-cannot-indias-oppressive-nation>

15 <https://www.firstpost.com/india/adivasis-and-the-indian-state-facing-govt-apathy-and-discrimination-kashmirs-gujjar-bakarwal-tribe-struggles-to-preserve-nomadic-way-of-life-7215331.html>

Pastoralists' primary source of income, livestock trading, was also affected by false rumours spreading that the disease spread this way. With many markets closed and transportation becoming more difficult, India's meat trade collapsed, causing loss of income for sheep and goat herders. During the lockdown, pastoralists also faced severe fodder shortages, requiring them to suspend travel. Many pastoralist families lack the financial means to purchase fodder from open markets, making them among the most marginalized communities.

Due to lockdowns, pastoralists have been unable to migrate or access their areas during the season. Many of the pastoralists during the pandemic outbreak in 2020 and in the second wave in March- June 2021, were reported to be stuck in other states/districts without access to rations and fodder for their livestock. The milk economy has also been severely impacted by the lockdown, as both procurement and sale have been disrupted. The nationwide lockdown in 2020 and in the second wave in 2021 of the pandemic. Thousands of Bakarwals and Gujjars, another nomadic pastoral tribe, have missed their traditional spring migration due to the lockdown imposed by the government to curb COVID-19 and its second wave.

The Rajaji National Park was reported to have a critical zone encompassing 30 km of the park and during the national lockdown restrictions were imposed on Van Gujjars to access the park, who have living there for generations together, as per the advisory. The forest department also destroyed several quintals of milk, which the Van Gujjars sold in Haridwar milk dairies in an effort to prevent them from reaching the cities.

Women pastoralists, in the majority, are illiterate, but have considerable experience and knowledge of livestock, their management, and their feeding behaviour. Therefore, they mix feed mixtures, pick fodder, or gather bush and tree products as feed. Women of nomadic pastoralist families are at a greater risk of hardship and vulnerability.

Pastoralists around the country confronted hostile policing system including the harassment by forest guards. Amidst the outbreak, the regulation and control over their movement escalated during the most crucial time, i.e., their move towards the summer pastures. While some state governments exempted their movement like the transport of essential commodities, the shepherds who had gone to their farms were stuck and unable to join their flocks back¹⁶

¹⁶ <https://www.actionaidindia.org/wp-content/uploads/2020/08/Ebook-I-Pastoralists-During-Covid19-I-Study.pdf>

Second Wave of COVID -19

India was battling a second wave of COVID-19 infections between March and June 2021, which was in its virulent form killing many lakhs in rural areas. The spread was so fast in the rural areas that ravaged entire villages of Uttar Pradesh, Uttarakhand, Gujarat, Bihar and many other states. Pastoral communities, who had limited information about the symptoms, preventive measures, diagnosis, treatment and vaccination, were becoming silent victims. A brief by the League for Pastoral Peoples and Endogenous Livestock Development claims that pastoralists make up some one per cent of the Indian population or about 13 million people.¹⁷ The second wave endangered their lives and the absence of robust data on them is worrisome.

Mobile livelihoods are a defining and distinct feature of pastoralists. Livestock survival depends on it. Since last year, various reports have discussed the steep costs of the government's lockdown decision. Pastoral communities and their livestock are both affected by these restrictions.

Since 2020, the steep costs of the government's decision to impose lockdowns paid by pastoralists have been widely discussed. These restrictions hurt not only the pastoral communities but also their livestock¹⁸. Pastoral communities and their livestock are both affected by these restrictions. Pastoralism is practiced in arid and semi-arid areas and local grazing lands are unable to cater to fodder requirements¹⁹. Since pastoralists live in arid and semi-arid environments, local grasslands aren't suitable for fodder production. Pastoralists who were unable to migrate during the second wave of the pandemic were concerned that existing water and forage resources were inadequate to feed a large number of animals, a problem they were well aware of from 2020's national lockdown.

With the second wave wreaking havoc in rural areas and lockdowns being imposed, the informal market of milk and milk products were in Jamnagar has being closed for an indefinite period and the families of these nomadic storalists bore the brunt..

There is evidence across the world which shows that pastoralism was a way where hostile/ fragile ecosystems were inhabited. While agriculture based civilizations developed in the fertile valleys and plains dependent as it were on a continuous supply of fresh water provided by the perennial rivers, a different type of civilization developed on the basis of pastoral economies that could move to where the fodder and water was. These communities engaged with

17 <https://www.actionaidindia.org/wp-content/uploads/2020/08/Ebook-1-Pastoralists-During-Covid19-I-Study.pdf>

18 <https://www.telegraphindia.com/opinion/right-of-passage-covid-and-pastoral-communities/cid/1819606>

19 <https://www.telegraphindia.com/opinion/right-of-passage-covid-and-pastoral-communities/cid/1819606>

sedentary ones converting grain stalks left standing in the fields into much needed dung to fertilize the fields in time for the next crop. Industrialisation and closure movements on one hand and the need to protect the disappearing forests on the other ignored the traditional role played by pastoralism in fragile alpine pastures, desert, mangrove and montane ecosystems. Purnendu S. Kavoori on the other hand in his book *Pastoralism in Expansion: The Transhumming Herders of Western Rajasthan (Studies in Social Ecology and Environmental History- 1999)* talks of the changes made by pastoralists to adapt to changing conditions. He focuses on the resilience of pastoralists to changing conditions, a traditional knowledge that they have inherited over centuries.

In *Dialectics of Nature*, Engels writes: *Let us not, however, flatter ourselves overmuch on account of our human victories over nature. For each such victory nature takes its revenge on us. Each victory, it is true, in the first place brings about the results we expected, but in the second and third places it has quite different, unforeseen effects which only too often cancel out the first. The people who, in Mesopotamia, Greece, Asia Minor, and elsewhere, destroyed the forests to obtain cultivable land, never dreamed that by removing along with the forests the collecting centres and reservoirs of moisture they were laying the basis for the present forlorn state of those countries. When the Italians of the Alps used up the pine forests on the southern slopes, so carefully cherished on the northern slopes, they had no inkling that by doing so they were cutting at the roots of the dairy industry in their region; they had still less inkling that they were thereby depriving their mountain springs of water for the greater part of the year, and making it possible for them to pour still more furious torrents on the plains during the rainy seasons.*

The story of the great dust bowl that overtook the Prairies of North America is well known to us. Learning from this Stalin decided not to cultivate the Steppes, relying instead on developing shelter belts for the South to shelter it from the Cold North Wind. Ecological issues as we know them now were however not that well grasped and hence a few decades later, Khrushchev investing heavily in cultivating these wildernesses. USSR paid the price for these blunders one they never fully recovered from. The story of the disaster done to pastoralism in Mongolia is no different.

In India the relevance of the Habitat in determining the local breeds is only now only surfacing sharply *Approaches and experiences of NDDB in development of Gir - a promising Indigenous breed*. It is now known that what was traditionally known as nondescript breeds actually have very defined properties. The Chilika water buffalo was earlier ignored due to its low productivity. Now, it is being recognised for its survival in productivity in low

cost conditions *Chilika Buffaloes in Orissa – A Unique Germ plasm – B.N. Patro, P.K. Mishra and P. K. Rao*. The Banni Buffalo that can survive in harsh and arid conditions is another such recent discovery <https://indianexpress.com/article/india/the-incredible-banni-buffalo-breed-in-arid-kutch-a-village-of-30-families-that-supplies-rs-2-2-crore-worth-of-milk-a-year-4961014/>.

Given issues related to Climate Change and the increasing cost of agricultural production local knowledge embedded in the different ecological systems will help us uncover the relevance of such traditional systems as a cost effective method of promoting and developing livelihood options outside of the framework that demands development of scarce water resources and the resultant displacement that goes with it.

TARUN KANTI BOSE