

ANIL AGARWAL GREEN CENTRE

# envision

## TRANSFORMERS

Stories of livelihoods  
and survival from inside the  
Nanda Devi Biosphere  
Reserve

- Keeda Jadi: God's gift
- Man-animal conflicts
- Van panchayats: Tug-o-war
- Chipko: Bitter after-taste

June 2009



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# Editorial

**T**HE Chipko movement that started in the 70s in Reni Village in the Himalayas made national headlines and is even today a poster act for environmental movements across the country.

Few kilometers from the birthplace of Chipko, in the Garhwal region of Uttarakhand, lies Tolma Village. The issues here are not far removed from those of its famous neighbour. Livelihoods and survival of the locals are stories in themselves. Yet it remains invisible to the public eye. Possibly it is too isolated or 'down market' a place to be reported by a main stream media occupied with 'priority' stories like 'Celebrity rapes his maid' or 'Bollywood's biggest super stars in a tussle'.

However, reporting on environmental issues, especially where conservation efforts and people often seem to be at odds, is a complicated matter. We have attempted to find stories in one such tiny village of 22 households. When I say we, I mean a group of 27 people from diverse fields, be it economics, sociology or psychology, coming together through a course to get a different perspective about the environment. For many it was their first time in places like the one we visited. For most, it was the first time they had to write about what they observed.

In fact, no article that covers this village has been easy. Whether in the perseverance the reporters had to understand the complex problems affecting the place or in the amount of skill that went into it. In simple words – there was no scope for armchair reporting. That's not saying that the city-centric stories had an easy time either. From clambering up mountains to trudging down dark hidden alleyways in Delhi, the reporters, between them, have done it all.

What it boils down to, is a combination of environmental, social, economic aspects that are presented in diverse ways. A fresh outlook and vivid, varied perspectives is what envision is all about.

**Simit Bhagat**

## Web features

[www.cseindia.org/drift.htm](http://www.cseindia.org/drift.htm)



### Water management in Tolma

Women in Tolma live in fear of drought: a look into their conservation efforts



### Creating natural wealth through ecotourism

Can ecotourism bridge the gap between the rich and the poor?



### Water inequity in urbanised Delhi

Private tanker owners thriving at the cost of the residents of Sangam Vihar



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Cover Photo by Simit Bhagat





ASOLA BHATTI SANCTUARY

# Safe haven for whom?

— *Vasudha Ravichandran, Utkarsh Dwivedi, Anupriya Karippadath*

**T**HE Bhatti mines area of the Asola Bhatti Wildlife Sanctuary is truly a unique sanctuary. Though public is not allowed to enter in, livestock herders from around 14 villages nearby graze in while monkeys move outside the sanctuary freely.

According to the villagers of Sanjay Nagar Colony (now renamed Bhatti mines), over the last three years, truck-

loads of monkeys have been brought from all over the city to the sanctuary almost every day. With no natural source of food inside Bhatti, the officials have come up with an interesting solution to the problem of feeding the animals. Instead of attempting to enhance the vegetation so that the monkeys can feed themselves, the officials at Bhatti bring in truck-loads of bananas and other fruits everyday to be fed to them. But the fact that the monkeys habitually steal food from the village instead raises the question: How effective is this practice? “They [the officials] are supposed to feed them at five in the morning, but they only do so around 11 AM, sometimes late in the afternoon. The poor monkeys stay hungry till then, and come to our village looking for food,” says Meena Kumari, a resident of Sanjay Nagar colony. She also encourages her neighbours to put out a bucket of water for the monkeys in case they get thirsty. “They are also living beings just like us,” she explains, “They need food and water just like we do.”

In addition, there is no restriction on villagers entering the Bhatti side, and they frequently do so, to collect firewood and graze their livestock. The monkey-proof fence was also not constructed properly, and the monkeys move in and out across the walls unhindered. They throng the adjacent villages, particularly Sanjay Nagar colony, where the nuisance they cause is unbelievable. Durga Devi, who lives yards from the Bhatti entrance, says they steal food when-



photographs: Vasudha Ravichandran

Monkey sifting through garbage outside the sanctuary gate

## Asola Bhatti: Delhi's green lung

The ABWS, of which the Bhatti mine was made a part in 1991, was established as a green lung in Delhi when NGO's proposed the restoration of the Ridge Forest area. The idea was to create a man-made sanctuary in this 6873 acre tract of land by planting trees native to the Aravallis so that the natural biodiversity would eventually grow. The sanctuary is home to a variety of fauna such as nilgai, porcupines, jackals etc.

The Bhatti mines were closed down in 1991 by the government. After the land was reclaimed, it was made part of the ABWS. However the Bhatti area did not regain its forests as much as the rest of the sanctuary did. It was primatologist Iqbal Malik, director and co-founder of the NGO Vatavaran, who suggested that Bhatti be used as a sanctuary for monkeys (macaques)

dwelling in the city. At the request of the authorities, she gave recommendations about setting up the place. She suggested tree species to be planted in the area to make it 'monkey friendly' and recommended a monkey-proof fence, to contain the monkeys. She also provided information on management strategies including monitoring the population and sterilisation to control it.

However these suggestions were implemented apathetically. According to Dr. Malik, when the sanctuary officials began bringing in the monkeys into Bhatti, the vegetation was far from adequate. The Tughlaqabad side of the Sanctuary itself has a dry thorn forest with species like Acacia, Zizyphus and Prosopis juliflora but no fruit-trees. Bhatti on the other hand is little more than a dry expanse of Prosopis shrubs which is not suitable even for browsing.



ever they get the chance, and sometimes even enter the house and open cupboards. “We don’t eat or sleep outside anymore,” she said. Ultimately, by thus allowing villagers to move freely into Bhatti, and the monkeys to move just as freely out, Bhatti defies the very definition of a sanctuary.

Nearly every resident of Sanjay Nagar colony has been bitten by the monkeys. There are occasional unprovoked attacks, as in the case of Heera Devi, who was bitten on her arm while sleeping in her courtyard. When the bites are severe, the villagers are directed to the Fatehpur dispensary, about 5 kms from the village, where they receive tetanus shots free of cost. When the dispensary is closed the villagers are unable to get the medical attention they need and, as they cannot afford treatment at private clinics, they often avoid it altogether. Dr. Mona Gupta, a doctor at Narayani Devi Charitable Trust, a private clinic near the Fatehpur dispensary, has seen her share of patients with monkey bites from other parts of Delhi. She recommends a series of seven rabies shots as a precaution. These shots, priced at Rs. 330 each, need to be purchased at the patient’s own expense and are barely affordable for the villagers. Iqbal Malik however, says that monkeys are not carriers of rabies like dogs and cats – they are affected by the disease, but do not transmit it through bites.

But why are there so many instances of monkeys attacking people, not just in Bhatti village, but in most parts of Delhi as well? It seems odd that monkeys would show such aggressive behaviour particularly when they are not



**Heera Devi shows the monkey bite scar on her arm**

provoked, but Dr. Malik disagrees. “Monkeys have lost faith in humans,” she explains. Considering the life of constant conflict these monkeys have shared with people in the city, and the abuse they have suffered in their hands, is this really surprising?

For all the trouble the monkeys cause, the villagers are surprisingly sympathetic towards them, and blame their undesirable behaviour on the irresponsibility of the sanctuary officials. But their resentment towards the authorities also stems from the government’s attempts to evict the villages around Bhatti since 2005. Says Dr. Malik, that when the Bhatti area was included in the sanctuary, there were farmhouses encroaching on sanctuary land but the government insisted they were outside the limits and were legal. Instead, the officials are trying to evict villages in the surrounding area.

Not only have the officials failed to take responsibility for all these problems, they are extremely secretive about the sanctuary itself. The Bhatti area is not open to the public and photography anywhere inside the gates is strictly prohibited. Dr. Malik herself has been refused entry into the area since the sanctuary was set up. In fact, no one knows what is going on within their walls, except the officials themselves. But one thing is clear: Bhatti today is nothing like the monkey sanctuary envisioned by Dr. Malik. The government has simply picked monkeys off the streets and dumped them in Bhatti. (*uthake udhar phenk diya*, as Dr. Malik puts it). While this may solve the problem in the city, does it justify simply transferring the menace on to Bhatti village? Moreover, if the monkeys are living the same life in Bhatti as they did in the city, how is Bhatti any more of a sanctuary for them than Delhi is?



**Catapults: The villagers’ only defence**



# Adapting to times

Tolma in Uttarakhand, shows how community eco-tourism can be good for people and forests

— Simit Bhagat

FOR villagers of Tolma in the buffer zone of Nanda Devi Biosphere Reserve (NDBR) in the Garhwal region of Uttarakhand, it's a new beginning once again.

The village of 22 families, belonging to Bhotiya community, historically farmers, shepherds, porters and traders, is today involved in community eco-tourism.

It was during the India – China war in 1962 that the local economy received a major setback, as all traditional migratory routes for trade with Tibet in non-timber forest products were sealed. So the villagers were left with no choice, but to abandon the trade with Tibet.

Later on in 1982, the villagers were



Pics: Charu Jishnu

‘victimised’ due to stringent environment protection laws, since the forests were declared a national park and they were banned from entering it.

Earlier, villages such as Lata, Reni and Tolma that dot the periphery of the reserve, used to thrive. They would cultivate their fields and were dependent on the NTFP's.

“But due to the notification, we were stripped off our traditional rights like working as porters to trekkers, grazing livestock in alpine pasturelands and collecting non-timber forest products (NTFP's),” 75-year-old Alam Singh, who has been living in the village for the last 40 years says.

In the late 90's, the locals made a strong pitch for opening of NDBR for community-based tourism. It was in 2003, the Uttaranchal government opened up limited area of NDBR for tourism.

In fact, under a World Bank funded project, the Ministry of Environment and Forests initiated an eco-development project and set up development committees in the villages. The members of the local community were encouraged to take on jobs of guides, porters and tour operators.

“The government allocated funds and trained us in managing eco-tourism and we were being apprised with the Do's and Don'ts for the visitors,” Rudra Singh, Head of the Eco-Development Committee of the village says.

The initiative brought in immense changes in the village from keeping the houses clean to the use of thrash bins and increase in the number of modern toilets and houses to cater to tourists.

Today, Tolma is fighting against all odds and on its way towards becoming a model for participatory management. Around 500 backpackers across the world visited the site last year in the midst of pristine nature to experience some daredevilry moments with tracking and wildlife site seeing.

“Just a couple of years after initiating the eco-tourism project, our household income from tourism itself during the season - May, June, August and September has reached Rs 10000. Also, now we don't have to rely completely on agriculture, which is again subject to rainfall and wildlife destruction,” says 25-year-old Prem Singh Rawat, a villager, who is part of the project.

Adding, “We have been going through a constant struggle for survival due to changing environmental laws. And the eco-tourism project is like a new beginning for us.”

## Time Line

**1962:** India – China war that led to closure of border for trade

**1982:** Notification of Nandadevi National Park as a national park

**1988:** Declared as a biosphere reserve under the UNESCO's Man and the Biosphere (MAB) programme.

**1992:** Declared as World Heritage Site

**2000:** Valley of Flower National Park included in Nandadevi Biosphere Reserve

**2004:** UNESCO's World Network of Biosphere Reserve

**2005:** Valley of Flowers declared as a world heritage site





# God's gift

From Tolma to Khari Baoli, every one is after Keeda Jadi

— Poorna Balaji and Tilottama Sarkar

**W**HERE is everyone? That was the first question which struck us as we walked into Tolma, a village in Chamoli district of the picturesque Garhwal Himalayas. On enquiring, we were told the villagers had shifted base to Tadakkhal in quest of 'God's gift'.

For the last three years, the months of May and June have been the most demanding time of the year for the Bhotiya tribe of Tolma. The villagers tell us they travel arduous paths, across glaciers and mountains as high as 4500m to collect 'Keeda Jadi' (See box: *Keeda Jadi*). Like any other village in the Nanda Devi Biosphere Reserve, Tolma is highly dependent on forest resources and farming for their sustenance. With the introduction of the core zone, grazing and collection of Non timber forest products (NTFP) were highly restricted. In the midst of this economic crisis, Keeda Jadi proved to be a viable alternative. (See box: *Changing Lives*)

The collection of this Keeda not only depends on sheer physical strength, but also on another important factor-luck. Their month-long stay there could fetch them over thousands of keedas or they could return with close to nothing. We were bewildered at the thought of them travelling so far in search of this. "We get Rs 2,00,000 a kg for this; isn't it worth taking the risk?" reasoned Sundar Prasad, a local.

*"We get Rs 2,00,000 a kg for this; isn't it worth taking the risk?"*

Keeda jadi, also known as Yar Tsa Gumba, has been used as an ingredient in traditional Chinese medicine over the last 1500 years, the uses ranging from being energy boosters to possessing anti cancer properties. It was collected by the Lamas in Nepal Himalaya, Tibet, Bhutan and in the Sichuan, Qinghai, Xizang and Yunnan provinces of China. But as resources depleted, their collection base shifted to the Kumaon region of India.

With their forests taken away from them and their access to livelihood sources being denied the locals of Tolma were forced to look at other means to sustain themselves. In 2005, when they first came to know about Keeda Jadi in Garhwal, the news of this fresh income booster spread like wildfire to the other surrounding villages. Today, a point had reached where every household has at least one member leaving in pursuit of Yar Tsa Gumba.

## Seeking buried treasures

From their sun burnt faces, we knew Mina and Harish Singh had just returned from their quest to their daily lives in Tolma. Staying at their house, we were engaged in conversation over cooking meals. Their complete dependence on this dead caterpillar was hard to miss. "We invest a lot in buying foreign-made tents and other essential mountain equipment to survive the harsh climatic conditions during the months of Keeda Jadi collection" Harish said. The returns they get out of such investments help them sustain through the rest of the year - depending on the market demand, prices may even go

## Keeda Jadi

(*Cordyceps sinensis*) is a parasitic fungus in the alpine regions of the Himalayas between 3000m-5000m. It is mainly found between the months of May and June. This entomophilic fungus grows parasitically upon the larvae of the Chongcao bat moth and forms a fungus/larva composite body. The larva forms a cocoon in the winter and hibernates in the ground. The fruiting body of the fungus emerges from the head of the larva in summer and resembles a grass sprout. Hence the Chinese call this "Dong Chong Xia Cao" literally meaning "winter worm summer plant".



Photo: Charu Jishnu



*A Keeda Jadi collector, with his daughter after his return from Tadakkhal*

up to Rs 3,50,000 per kg. “We sell it to the middlemen from Joshimath who are fixed by traders in Delhi as they offer good prices.” added Mina. The demand creates such intense competition, that clashes between villages and individuals are rampant.

Since the time they started collecting, the villagers sold Yar Tsa Gumba directly across the border. With the number of villagers collecting Keeda Jadi increasing, the Van Panchayat of every village started issuing permits to monitor the same. Realising its true economic potential, in 2008 the State Government too issued a notification to curb smuggling of Keeda Jadi to the neighbouring Chinese provinces, compelling the villagers to sell their collection to them. But this proved

to be a vain attempt. For all the hardships endured, the State Government buys it from them for a mere Rs 50,000 per kg, while the middlemen from Joshimath who approach them have much higher prices to offer, implying that villagers’ obvious choice, thus the trade becomes illegal.

### **Dark side of Khari Baoli**

Tracking this wonder drug from the high reaches of the Himalayas we reached the dark alleys of Khari Baoli in

Delhi hidden somewhere in the bustle of Chandni Chowk. Khari Baoli, synonymous with spices is in fact the largest wholesale spice market in Asia. Making our way through labourers carrying and unloading piles of spices, we found ourselves sandwiched between heaps of red chillies, muesli, lichens and sacks of other exotic spices. Under the guise of two girls looking for the miracle drug to cure their mother’s chronic ailment, we felt equipped to find a market for this illegal trade. After an hour of enquiring, when none of the shop owners responded to what we were looking for, we began to lose hope, until an old coolie called us aside and said “What you’re looking for could be found further ahead in Gundhi Gully”.

Taking the lead we proceeded into exceptionally narrow gullies enveloping us with a mixed aroma of menthol and urine. We were being drawn into a dark maze with no other women to be seen. We noticed a sharp shift in response than earlier when asked about keeda jadi. It seemed they were attempting to keep something under wraps. While some were ready to disclose information they were immediately hushed up by their higher ups. Further into the maze, we stumbled upon Agarwal market. With his suggestive smile, Mr Manish, the owner, was the first one in two hours to even acknowledge the presence of this trade in Delhi. After much prodding, he directed us back into daylight by giving us the name of a particular trader, however “Don’t waste your time investigating this matter; it’s a banned trade in India.” he added.

Mohammad Jamal Salim Jamal was our first peek into light (or so we thought!). When our descriptions of the jadi matched with what he called ‘aagresham’ our hearts pounded with excitement. He offered to show us a sample, and we waited with bated breath. Was ‘aagresham’ the trade name! Our momentary excitement came crashing on finding out that the sample was nothing but silk cocoons! Disheartened, we had a glass of the famous Giani’s Falooda to refresh our minds.

## **Changing lives**

Nanda Devi Biosphere reserve is a fragile habitat. In 1982, for the first time it was notified as a National Park. Under the UNESCO, Man and Biosphere programme 1988, it was declared as a Biosphere Reserve. Along with this declaration the Core zone was introduced. This restricted entry of the locals to various parts of the reserve mainly the core zone, grazing cattle and sheep on the pastures and collection of Non Timber Forest Produce (NTFP) was banned. Their livelihood which primarily depended upon the forest resource had

a severe impact. Incidences of human-animal conflict (See Forest Encounters page: 8-9 ) were on the rise. This meant that their income generation capacity was drastically reduced.

The State Government took notice of this and came about with a scheme to provide the villagers Jersey Cows at subsidised rates under the Eco Development Programme for Nanda Devi. Though Jersey cows give more milk and can be stall fed, they use much more water than local varieties. Hence this scheme did not help them entirely and the villagers were forced to search for alternative means of income.





Our stomachs satiated, we went back with renewed vigour. This time we tried our luck by asking a roadside porter. Though he didn't seem to know much he directed us to Hari and Company of Peshawar. Rattling our story all over again, for the tenth time now, a young trader at the shop lent an ear to what we had to say. He reiterated the same details we had heard earlier in Tolma; the only fact which was different was the price at which it was being sold in the Delhi market. We couldn't fathom the price when he told us that it was Rs 10, 00,000/- per kg this year. Harish Singh was after all correct when we told us they get 30 per cent of the final market price. Lesser the quantity, higher were the rates - as much as Rs 2000 per piece! The last link of the chain was the world market. Yar Tsa Gumba was being sold mainly to China as well as all over India and the rest of the world as 'Caterpillars', (one of the many trade names). He went on to show us a sample; two small



Photo: Poorna Balaji

***“Don't waste your time investigating this matter; it's a banned trade in India”***

pieces in a zip lock pouch which was carefully tucked into the inner compartment of his briefcase, only this time our samples matched.

### **Hope — But for how long?**

Though villagers are aware of the fact that over exploitation will lead to depletion of this species, they are driven by poverty to continue doing the same. This in turn results in yet another burning impediment- CONSERVATION. Yar Tsa Gumba needs time to attain maturity of the fruiting body (stalk) and spore dissemination. At the present rate of exploitation, it may soon vanish.

This experience made us reflect on the obscurity and irony of the whole trade. The hard work and risk taken by the simple people of the mountains fetches easy money to these rich wholesalers in the clandestine Keeda Jadi market of Khari Baoli. We wondered if the Government had some role to play in surging the price from Rs 100 a piece to as much as Rs 2000 a piece over a mere distance of 500km. It has been noted time and again that Governmental intervention in matters of trading and marketing of NTFPs has always driven the trade underground thereby escalating the price. Learning from past as has been observed in the case of Agarwood, Sarpagandha and Talisapatra, the Government should concentrate more on regulating the collection and protecting the species from becoming endangered.

At the end of it all, we doubted the possibility of the village being empty in a few years from now; at the present rate of exploitation, they might not be able to find any more of God's Gift.

*(All names changed to protect identity)*

### **Uses of Keeda Jadi**

- Provides restful sleep
- Natural anti cancer agent
- Blood pressure regulator
- Respiratory aid
- Sexual Rejuvenator
- Increased Energy
- Anti ageing properties
- Blood sugar regulator
- Memory improvement and mood enhancer
- Increased absorption of other nutrients
- Blood builder and purifier
- Outstanding kidney rejuvenator

### **More facts about Keeda Jadi**

- After regular consumption of Cordyceps, a team of Chinese women runners shattered 9 WORLD RECORDS for the 10, 000 m run by an unprecedented 42 seconds at the Chinese National Games in 1993
- A Boston marathon runner, who had been taking Cordyceps, cut an unbelievable 25 minutes off his time and placed him in the top ten winners



# Forest encounters

Predators rove freely in Tolma

— Mayank Jain

**S**EVENTY-five-year-old Alam Singh, a tribal farmer from Tolma village in Uttarakhand, has fearlessly grazed his livestock in the wild all his life. But he no longer feels secure leaving them there and going back to his routine chores.

He is not the only one. Most of the livestock owners in the village are a worried lot these days. They are living under the constant fear of an increasingly bold and unusual foe – the leopard.

The big cat has been entering the village and attacking livestock. Over the past one-year, there have been 40 cases of livestock being killed in the village that falls under the buffer zone of Nanda Devi Biosphere Reserve (NDBR). Singh's jersey cow, which was grazing in the hills in NDBR, was a recent victim of the attacks. "Like any other day, I left the cow in the wild and got back to work in the village. But the cow did not return at the usual evening time. That's when I sensed something amiss and we immediately went to look out for it. But it was too late. The cow was lying in a corner of the grassland and the predator had half eaten the carcass," says Singh.

His fears seem quite justified, considering that he has lost three of his jersey cows to leopard attacks – including two inside the cowshed adjoining his house – in the last one year itself.

Owing to a rise of such incidents, locals from the tribal village have been living in the fear of leopard and are even scared to let their livestock in the wild in evening. "When darkness falls, we take our livestock inside the shed because no one knows when the leopard would appear," says Narendra

Bhatola, another villager, who recently lost his cow in a similar leopard attack.

However, even keeping them inside the shed is not enough. Just a couple of weeks ago, the leopard killed one of the three cows kept in the shed.

But, leopards are not the only ones that have been worrying the locals. Of late, there have also been cases of agricultural fields being destroyed by bears. "Every year, we incur losses due to bear attacks. They gorge on apples and apricots, completely destroy rajmah (kidney bean) fields, and we have to bear with it," says Rudra Singh, head of the eco-development committee, Tolma.

In fact, due to the rising incidences of man-animal conflict in the NDBR, there has been a growing resentment amongst the locals. "Wild animals have been attacking our livestock, apart from destroying our annual crops. We are helpless and cannot do

anything against them, as it is against the wildlife laws," says Bali Devi of Reni village, just 7-8 km away from Tolma.

The locals are especially angered by the compensation procedure of the forest department. "Claiming compensation for the loss of livestock is an arduous task. Starting from the post-mortem from a veterinarian to submitting the report to the forest department, we have to undergo a long procedure. Even after claiming the compensation, we can't be assured that it will be



Photo: Smit Bhagat

**Alam Singh (above). Turmeric paste helps heal wounds on the cow that was mauled**



Photo: Charu Jishnu





cleared soon,” says Alam Singh, who has waited a year for compensation.

Due to hardships that the villagers have to go through, many don't bother with claiming compensation. Locals say initially the response was

good, with a fair amount of money being doled out. Lately however, the complaints appear to be simply filed away, no action taken altogether.

Take the case of Chandravati, a 35-year-old woman, who recently lost her jersey cow. “Although I lost my cow to a leopard attack, I have not claimed for compensation. The amount of hardships and expenses that one has to incur to claim the compensation is much more than what one actually gets in return,” she says.

The forest officials agree the procedures to acquire compensation can be lengthy. They differ, however, with the villagers regarding the time it takes for villagers to get the money. “Compensation is provided to everyone if their livestock had been attacked, though it takes about 2-4 months to do away with compensation. They are paid Rs 2,500-3,000 per cow after submission of appropriate papers in the office” says Balbir Singh, a scalar of the Forest Development Corporation.

According to a study conducted by the GB Pant Institute of Himalayan Environment and Development, an autonomous institute of the Union Ministry of Environment and Forests, wild animals have wreaked havoc in the villages located inside the biosphere reserve. Around 1,000 livestock have been killed by leopards and bears since the area was declared a Biosphere Reserve. On average, each household in the reserve loses Rs 272 each year from loss of livestock (leopards and bears), and Rs. 1,060 from damage to fruit crops and Rs. 2590 from food loss to crops (bears). The research also surmised that a number of fake claims by villagers could be the reason behind deterioration of claim settlement process. The study said protected area managers took interest in the initial period, but subsequently adopted callous attitudes towards the speedy settlement of compensation cases.

The biosphere reserve declara-

tion brought about a profound change in relations between man and animal. It led to a drastic curtailment in the access the villagers and their livestock traditionally enjoyed in the forests and the high altitude pasture lands. Similarly, the strict forest laws and closer scrutiny meant less money villagers could make through the collection and sale of non-timber forest produce, especially highly valued medicinal plants, while tourism dried up with the core zones being declared no-go areas.

Ignoring the traditional dependence of the local people on forest resources leads to conflict between the locals and protected area managers. Now crop yield losses and devastation of livestock have become an acute problem in the villages inside the biosphere reserve.

In fact, a World Bank-funded Eco-Development Project sought to reduce the inevitable conflict between village communities and animals. Some of the measures included providing heavily subsidized, high milk-yielding jersey cows to villagers. These animals, many of them stall-fed, are sitting ducks for the leopard, which perhaps explains the increase in the number of brazen attacks in Tolma and other villages inside the buffer zones of biosphere reserve.

Villagers say forest officials are more concerned about wild animals than the lives of people. “Wild animals can damage our crops, destroy our livestock, and even harm our family, but if the people do anything against the animals, we are punishable by law and are jailed straight away”, said Prem Singh, a Tolma resident.

This is a story being played out in other protected areas in many other parts of the country. Clearly, there is urgent need to discover ways to more deeply – and more innovatively – involve community-based institutions and make them stakeholders in the conservation agenda.



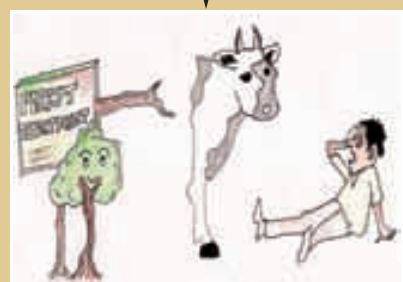
A villager in Tolma grazing his cow



Leopard attack!



Villager claims compensation



But gets only 1/4th the value of the cow

Illustration: Saurabh Mehta



# Reviving *gharats* in the Himalayas

Gharats are unique water mills which need to be harnessed as a source of energy

— Adithi N Rao

EVER heard of grinding mills that run on water and not electricity? Gharats are water mills found all over in the valley of Uttarakhand. Gharats are playing an important role in the daily lives of the people there. They are traditional mills, used for crushing and grinding, found all over the Himalayan region.

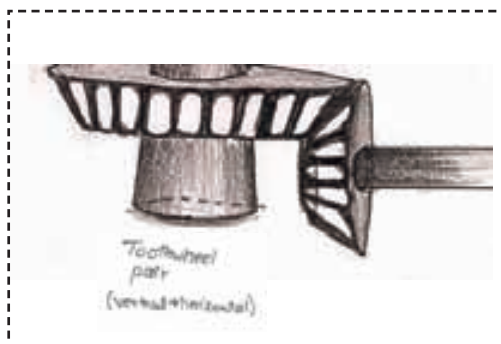
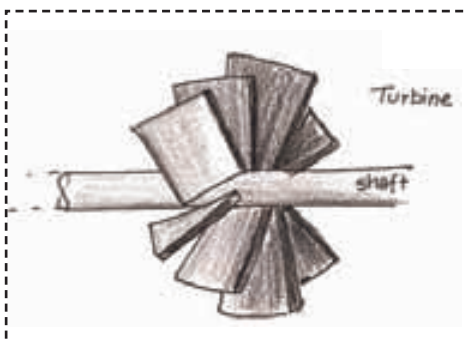
Gharats work in a simple way and are operational in periods of good supply of water as water is essential for running them. Water from a stream or spring is routed through a head and made to fall on a shaft of flat blades which makes the attached turbine (with a ball bearing) rotate. When the turbine rotates, the stone chakki (A thick round circular stone with a hole in the centre) located at the top of the rotating apparatus starts operating and grinds the grain like wheat into flour (atta). The speed of the shaft can be varied and adjusted according to the flow of water. The stone chakki is changed depending on the flow of water in the sense that for a faster speed of water a heavier chakki is needed and vice versa. They require about 20 litres water/per second to grind the grain. The water falling on the shaft flows out and joins the nalas (small streams).

Gharats are also used for generation of power and can generate about 10 to 15 kilowatts of power. However, it depends on the flow of water and the height through which water falls. When the alternator fixed to the turbine starts, power is generated. The *gharats* can be used as power generation units to meet the power needs of the local communities. While generating employment, the *gharats* also promote the socio-economic status of people.

It is indeed amazing to know how people in the valley with limited knowledge are making use of a simple technology without causing adverse effects on the environment.



Photo: Smit Bhagat







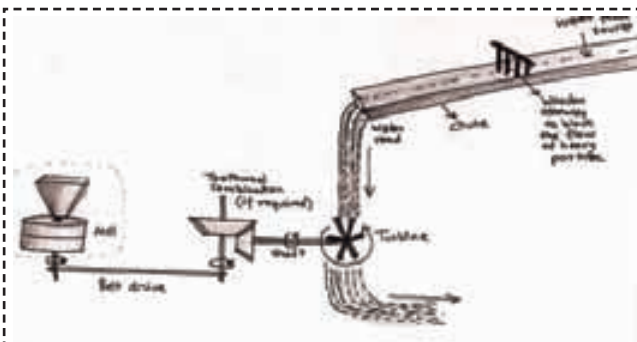
**Simple stone chakki powered by the gharat to grind atta**

## Versatile water mills

- Gharats originated in the 7th century. About 70,000 *gharats* exist in Uttarakhand alone, roughly 15-20 *gharats* for every 10 to 12 houses
- Gharats grind wheat (Sathi, Nabbe, and Tant) and spices
- Gharats have varied potential uses. With minor modifications, *gharats* can be used to extract oil, comb cotton. Their turbines can also be used to generate electricity
- About 40-50 kilos of flour can be ground in an hour, or about 4 quintals in a day
- A *gharat* operator earns Rs 5,000 - 10,000 per month

The Himalayan Environmental Studies and Conservation Organization (HESCO) has restored *gharats* by adding ball bearings and replacing the traditional wooden turbines with iron cast ones at a cost of approximately Rs. 1,00,000 for each *gharat*. About 15 *gharats* have been restored so far in the Garhwal valley.

**Gharats offer a cost-effective environmental safeguard. If all of Uttarakhand's 70,000 gharats are restored, they could generate up to 560 megawatts of electricity, practically as much as any large dam, minus the human costs or environmental destruction.**





# Tug-o-war

## Conservation policy vs tribals: Is there a golden mean?

— Kamal Medhi

**A**RE conservation policies in India enough to protect natural resources, or there is some other way? State governments allocate significant sums of money for forest protection, but they are not more effective than local communities that manage with minimal resources.

Tolma village in the Nanda Devi Biosphere Reserve (NDBR) belongs to the Bhotiya tribe, historically shepherds, porters, hunters and traders. Trade with Tibet was an important source of income for them. However, the 1962 Indo-China war closed the border between India and Tibet, forcing the Bhotiyas to abandon their trade routes. Over a period of time, the forest became integral to their livelihoods. Recognition of this connection between man and forest, and its importance in forest conservation, led to setting up of the Tolma *van panchayat* (forest council) in 1964.



Photo: Manali Rane

Initially, the panchayat regulated around 11,000 ha of forest in the valley. In 1982, the forest department acquired around 8,000 ha of forest land and similarly from several van panchayats, including these in the Nanda Devi National Park (NDNP) and imposed a blanket ban on resource use. The villagers were now forced to forgo dependence on the forest even for necessities.

Most of the Bhotiya community has also been practicing eco-tourism as main source of livelihood since after 1962. They have been affected by the park notification, as it includes a blanket ban on eco-tourism and trekking to its core zone. Also, in 1988 UNESCO declared the area, includ-

ing NDNP, as a biosphere reserve. "Now we need to take permission from the forest department to cut even a dry tree from our forest," says Mohansingh, the *sarpanch* of Tolma *van panchayat*. Many families also lost their rights over pasture land inside the new biosphere reserve. With the idea of providing of a solution, the Government later introduced jersey cows in the villages of the reserve's buffer zone, in an effort to promote stall feeding. This valuable milch cow does necessitate stall feeding, but also requires large amounts of drinking water. Tolma, being situated 2,200 meters above from sea level, faces regular water shortage. One more instance where plans have been executed without thought as to their larger consequences.

It is obvious that the new biodiversity conservation policies have ignored the vertical linkages, between activity at lower elevations in the buffer zone and those at the higher elevation of the core, crucial to the survival of the Bhotiyas. This is a mistake repeated several times (see box on page 4). In the Niti Valley, this is leading to a rapid transition in people's livelihood.

It is becoming clear including locals in any conservation effort is crucial for success. The *van panchayat* system is an excellent example of this. *Van panchayats* in Uttarakhand were born out of the conflicts and compromises that followed the settlements and reservations of forests, like that in NDBR. The Tolma *van panchayat* owns approximately 3000 ha forest area, adjoining the Nanda Devi core zone. People from the village have expressed an earnest inclination to protect their forest resources for sustainable use. "We are forest dwellers and we want the forest to be protected better. Ironically, the government doesn't listen to us and makes policies that are not in our favor," says Mohansingh.

Today, the village also has an eco-development society which has been zealously helping the forest staff in the protecting the forest. The society members along with the Tolma *van panchayat* nabbed a poacher red handed last year and have been providing assistance in the legal proceedings against the offender. Eco-development efforts have emerged across the Niti Valley after a conference on community based conservation and ecotourism, which drafted a declaration to promote ecotourism on the fringes of Nanda Devi National Park, in 2001. This beginning is the result of a 30 year struggle.

Places like Niti Valley have proved that tribals need not to be excluded from policy framing and implementation. They are, in fact, crucial to success. However, even today, with biodiversity conservation being such a priority in environmental movements, some of our well-meant conservation policies do not integrate local forest dwellers and their institutions. An integral conservation approach must include both conservation policies and local institutions for better conservation of natural resources.





# Himalayan baroque

Changing face of hill architecture: From slate stone roofs and wooden balconies to modern concrete blocks



Photo: Poorna Balaji



Photo: Charu Jishu

— Ritu Manga, Sangeeta Gogoi, Sumi Narah

**S**EVENTY-five-year-old Alam Singh lives with his sons and grandchildren in a small house with stone walls, mud floors, wooden balconies, and slate roofs – simple, cheap and locally available materials that typifies hill architecture, rich in social, cultural symbolism with practical uses.

The house is planned around a ‘khao’ or ‘aangan’ (courtyard), used to receive guests, to dry crops and to tether the cattle. The wooden parts of the house are shielded from snow, rain and direct sunlight.

The walls are made of stone cemented with mud and polished with lime water. The low doors help protect against the cold, while forcing visitors to bend before entering the house, in a suitable gesture of obsequiousness.

Some traditional houses in Tolma inside the Nanda Devi Biosphere Reserve (NDBR) are double-storied, with the rooms on the ground floor used as a cattle shed and to store fodder during the winter months. The family rooms on the upper floor – with sur-

prisingly few windows – serve as habitation for the family, an effective floor plan that ensures insulation, warmth and protection for the animals during the winter.

Long wooden balconies serve for socialization, both among family members and for visitors. The kitchens are equipped with traditional chulhas for cooking, with a long chimney to aid in the dissemination of smoke.

The law, changed priorities of the youth and the availability of materials have conspired to change architectural designs in Tolma, as elsewhere in the upper Garhwal region.

With increasing exposure to the urban lifestyle, the youth especially choose the modern over the more inconvenient traditional. Mortar is routinely used in place of mud.

The cowshed is now set a little apart from the main courtyard to separate the dirt and stench from the household. The low ceilings, for added insulation, have been replaced with 10-foot-high ones, while slanted roofs of slate stone have given way to flat, rein-

forced cement concrete roofs, especially with the ban on mining in NDBR.

The tourist, especially the eco-tourist, influx has had an enduring impact. The urban traveller needs a pucca house with tiled bathrooms, well furnished rooms, and glazed windows to take in the views, a vast change from the more practical hole-in-the-ceiling to keep the room insulated, yet well ventilated.

The entire look of the village is now a mosaic of the old and the new. Tolma’s living landscape has adapted to the tourist – wooden ‘use me’ trash cans are ubiquitous throughout the village, cemented uncovered drains are effective in channelling wastewater away from habitations, while the solar panelled streetlights – a gift from the government’s border development fund – provide illumination at night.

However, the architectural transformation has not changed the strong interaction among family members. Children still spend time with their grandparents in the older houses and women folk still prefer cooking the family meal in the old chulha.



# A bitter after-taste

The famous Chipko movement brought Reni nothing but despair

— Vasudha Ravichandran

**D**ESPITE being the pioneer of one of the most well-known movements India has ever seen, the birth place of Chipko movement, the village of Reni, continues to be an island of despair.

More than three decades ago, Gaura Devi led 27 women from the Reni village in a historical retaliation against commercial felling of forest trees by hugging the trees until the lumberers retreated. The nationwide Chipko movement sparked off by this simple act not only opened the eyes of the nation to the needs of these people, but has also become an eternal symbol

for conservation movements today. But for all the sensation behind the movement, the humble village that started it all is left with nothing more than resentment.

The essence of the Chipko movement, the simple act of tree-hugging, was originally started by Chandi Prasad Bhatt as part of the Dasholi Gram Swarajya Sangam (DGSS). Chandi Prasad had been leading the village people against the rampant commercial exploitation of the forests through his workshops for building farm tools using forest resources. When the DGSS was denied the right to cut trees from

## Chipko: A timeline

**1964:** Chandi Prasad Bhatt started the Dasholi Gram Swarajya Sangh (DGSS) to set up small industries using forest resources.

**1973:** First Chipko incident by DGSS workers and villages in Gopeshwar against lumberers.

**1974:** Gaura Devi led 27 women against lumberers in the forests of Reni village.

**1980:** Indira Gandhi issued a 15-year ban on felling trees in Himalayan regions.



Photo: Simit Bhagat

The memorial of Gaura Devi, who led the Chipko movement in Reni

the forest despite the open tolerance to commercial lumbering, Chandi Prasad led the villagers in a series of tree-hugging protests until the lumberers retreated.

On March 26th 1974, Chandi Prasad and his followers were diverted elsewhere by the government who sanctioned the cutting of trees in Reni village by commercial lumberers. Tipped off by young Balli Devi, Gaura Devi took over the movement and led the hallmark, all-women protest, that later blossomed into the Chipko movement. Their act of bravery not only inspired villages far and wide, but it was also the first time in history that women played such an active role in a movement.

But the significance of their achievements seems to be lost on the people of Reni today. More than thirty years after their uprising, the





Government still does not recognise their right to use the forest resources they fought for. While the spate of commercial exploitation of forests of the 1970s is long gone, the Forest Conservation Act has banned the cutting of trees altogether. To add to their woes, the building of dams on the nearby Alaknanda river has ruined their farm lands and water supply.

On another note, Chander Singh, Gaura Devi's son feels his mother and the women of Reni did not receive the recognition they deserved for their role in the movement. "Chandi Prasad Bhatt and Sunderlal Bahuguna were given a lot of money for their role in the movement, but the people of Reni, who started it all, got nothing" he says. Moreover, he and other followers of Gaura Devi believe that the woman who calls herself Balli Devi is an imposter.

If the Chipko movement was such a breakthrough for the entire country, why has it left the people of Reni in such despair? Firstly, Chipko was intended to let the village people have the right to use the forest to fulfill their needs. But it has since been popularised to represent the idea of protect-

ing and conserving forests, the original idea of sustainable use forgotten.

Secondly, while hugging trees could stop their being felled at the time, it was no more than a temporary fix for an immediate threat. As far as the law went, their rights over the forest still remained in the hands of the Forest Department.

Above all, Chipko has brought to light the harsh reality of the government and its policy-making. Various acts on the use and management of forests have come and gone, but each seems just as extreme as the one it replaces. The Indian Forest Act strongly advocated commercial exploitation of forests with little concern for its preservation, while the Forest conservation act was all for conservation without giving thought to the people who depended on the forests for their survival. Through it all, the people who relied most on the forests were forgotten, and the simple balanced solution of sustainable use seems to have occurred to no one.

Reni today is no better off than it was three decades ago and, if anything, is wrought with more grief. The spirit



Photo: Vasudha Ravichandran

**Chander Singh, son of Gaura Devi**

and passion of the Chipko movement has been replaced by resentment over who should get credit for the movement, and everyone seems to have forgotten what they were really fighting for.



Photo: Adithi N Rao

**The forest that the people of Reni saved is now a part of Nanda Devi Biosphere Reserve**



# “Villagers will be driven to the point of killing leopards”

Excerpts from Tiasa Adhya's conversation with Rudra Singh Butula, Head of Eco-tourism Development Committee in Tolma village



## **Tell us something about Tolma village**

There are many problems plaguing the village. Cattle rearing and agriculture have taken a huge beating due to leopard and bear attacks. Also, we had set up a herbarium for cultivation of medicinal plants in our village with the help of Mr P. K. Hazra, Former Director of Botanical Survey of India, BSI, in 1998. But it is not flourishing, due to illegal herb collectors, who sell it at much lower price.

## **Why do you charge more for the medicinal plants than the illegal traders?**

We charge more because a lot of effort and time goes into cultivation. We have to give organic pesticides like gobar mixed with dried apricot leaves. Hence, we charge a higher price. For a kilogram of *katki* may cost around Rs 250, where as illegally one gets it at Rs 50 illegally.

## **How was the eco-tourism project initiated in Tolma?**

In 2004, the Director of the Wildlife Trust of India, Dr. Aniruddha Mukherjee visited the village. He assisted us in setting up the community owned eco-tourism project in the village. Even the Border Development Authority (BDA) helped us setting up solar panels in the entire village, while the World Bank gave us Rs 3,80,000 to promote eco-tourism. We were also provided the high-yielding jersey cows at subsidised rates. Also, since it is a stall feeder, the

owners do not have to graze them in the forest. Apart from the jersey cows, we were also provided LPG cylinders. But, unfortunately after a year, the World Bank backed out of the project. But we still have Rs three lakh in our kitty.

## **How do you plan to spend the remaining funds? Are you also creating awareness amongst the villagers about the benefits of the project?**

I was the first person in the village to build a *pucca* house and toilet. Only five of the 22 families in the village have followed my foot steps. So, in the future, we plan to divert the remaining fund in building *pucca* houses and toilets for other villagers. This will ensure that the home stay of the tourists is comfortable and the eco-tourism initiative is developed as a good source of income.

## **How are the villagers benefiting from the eco-tourism initiative?**

We charge around Rs 200 per person/day for the stay. And for non-vegetarian food, we charge around Rs 400 per person/day. Taking eco-tourism and agriculture into consideration, our annual income increased to around Rs 80, 000 to 1.5 lakh per year. Considering our rural life-style, the amount is good enough. But there are many in this village, who do not earn as much, so my aim is to improve their standard of living. But, there are certain negative aspects of the initiative that affects us like lack of privacy, changing traditional practices.

## **So, apart from this, your main livelihood is agriculture. How good is it as a source of income?**

We sell Rajma for Rs 50/kg and potato for Rs 10/kg. We also have livestock rearing. We also work as guides to tourists going into the core zones. For that, we charge around Rs 1,000/day. But constantly, bears and pheasants feed on our crops. And we are not given compensation for that. Neither are we allowed to kill the animals else we will be jailed.

## **Do you receive compensation for loss of livestock due to leopard attacks?**

Yes, the government gives a compensation of around Rs 2,500 for a cow and Rs 4,000 for a sheep killed. But they always delay the compensation process, even upto 1 year. Moreover, we have to bribe the veterinary doctors to get a valid post-mortem on the basis of which we get the compensation. Some of us are so fed-up with the process that we don't even apply anymore.

## **What is the solution to all this?**

Well, the government should be active in tracking down illegal herb collectors. They should provide us with barbed wires and give us compensation on time. Otherwise, the villagers will be driven to the point of killing these leopards. Many of them think that is the only solution!





# “Fire on the mountain....”

When the forest floor crackled and the smoke made us choke

— Anupriya Karippadath

**JUNE 13, 2009:** “Smoke!” the cry went up as we rounded a bend in the mountain path. A great white plume was rising from the trees. I thought it was a cloud. 13 hours later, the still-rising ‘cloud’ forced me to reconsider my opinion. Breakfast conversations revealed it to be a forest fire, in the deodhar forest just beyond village Tolma, in the buffer zone of the Nandadevi Biosphere Reserve.

We were unfortunate this fire, the first to occur from that area of the Reserve since 1994, broke out when we were there. Generally, the very phrase

Our fire was very much in existence by late morning on the 14th. But the gravity of the matter was completely lost on me. That changed however, when we set out from Tolma for a long walk. We hadn’t walked more than five minutes, however, when we entered into a patch of pure haze. Walking further, we saw the smoke cloud was flowing up the mountain side, bullied by the wind, and completely blocking our path! Nothing beyond, or even in, the smoke was visible. Our guide for the trail, Rudrasinghji, insisted we turn back. He said we would all faint if we ventured into the fumes.

Reluctantly, we started back. However, four of us were determined to take a closer look, and so trudged down the forest path that evening. With Kamal and Manali armed with cameras, and Utkarsh leading the way, we headed down a small winding by-lane, down into the lower reaches of the slope.

We followed the narrow footpath along the slope, heading towards where the smoke appeared to originate. Down we went, through dense shrubbery, avoiding spiny branches, and tripping over every second rock. After a while, the path turned really steep. Now the fire seemed much closer. We smelt smoke, mixed with the heady scent of melting pine-resin. Eyes stinging, we could now see the flames. The damage the fire had wreaked came into full view: burnt moss and pine needles, most trees scorched at the base, some still burning. Live embers smouldered under much of the thick undergrowth. Even rocks and boulders were hot to the touch.

The fire had spread in every direction. Heading into the haze, Manali and I decided we had had enough. The guys

went a little bit higher to try and get some good pictures. As we waited for them, the wind changed and suddenly the smoke was blowing towards us. Throats searing, we called out to the other two to come down immediately. They tumbled down, gasping for air, and we literally ran for our lives!

Luckily for us, the wind decided to play around again, and the smoke soon headed in the other direction. Thankfully, we stumbled, half asphyxiated, out of the trees, onto the path and into the village.

There is a basic protocol followed when forest fires strike. The sarpanch (chief) of the van panchayat of the concerned area is supposed to contact the Forest Department. The sarpanch of Tolma’s van panchayat not being at home, the whole matter was a mess! Of course, the phenomenon itself was so rare there that people were confused on what was to be done. I learnt two people from the Forest Nigam had been by. Why? The Nigam had valuable logs stored in the vicinity the fire had broken out, and was there to check on its safety. The department officials, however, did not turn up. Mind you, when we left on the morning of the 15th, the fire had already been burning for at least a day and a half.

All evening on 14th and morning the next day, the slight dim haze over the valley was a constant reminder of the silent destruction so close to us. What was clear was the need for defined and efficient ways to deal with such crises. Till then, the vision of a tall deodhar tree, flames licking around its base, standing sad among the ruins of a once green forest floor, will stay.

*Inputs by Utkarsh Dwivedi and Manali Rane*



Photo: Kamal Meethi

‘forest fire’ conjures up visions of roaring flames and trees crackling in an inferno. Not so in this case. This fire was more on the lines of a quiet, smouldering advance over the dry undergrowth.

Forest fires are easily set off in terrains like this. The pine needles that litter the slopes dry easily, providing the ideal hair-trigger for a fire. Unusually high temperatures, sunlight focused through pine-resin, a lit match or cigarette butt carelessly thrown will kindle the dry needles. Once on, the fire spreads over the slopes, not ceasing unless checked. Given the right conditions, the fire can go on for days.



# Sacred groves: A peg for conservation

Hariyali Devi in Uttarakhand helps in preserving forests

— Tiasa Adhya

**W**ITH deforestation and degeneration becoming commonplace phenomenon, the existence of sacred groves comes as a blessing for conservation of biodiversity, especially because of its religious connection. A sacred grove is a patch of forest, dedicated to deities, a form of social fencing that communities use to protect the forest, and is a traditional, informal, yet effective method of conservation.

One such sacred grove exists in Jasoli, in Rudrapur district of Uttarakhand - the Hariyali Devi sacred grove. A 200-year-old sacred grove, it derives its name from the lush green vegetation of the surrounding mountains. Spread over an area of 20 sq km, the sacred grove is visited by people

before going into the groves to offer their prayers. This is a sacrifice performed by the locals in order to appease the deity. “Devi takes good care of our crops and livestock and punishes those who venture into the groves with the wrong intentions. So, there is no poaching or illegal collection of medicinal plants” said Sachidananda with irrevocable faith, when prodded about such occurrences. Locals also believe that if one makes a wish with a pure mind, that wish is always granted.

The sacred grove also has an important socio-cultural role. Several festivals are held throughout the year, which is important for socialization among the youth of different communities making them more aware about their culture and traditions.

Locals believe Devi brings rainfall, keeps livestock healthy and fends off disasters. There is also a scientific basis to this physical phenomenon. Transpiration from the huge vegetative mass increases atmospheric humidity and brings down temperatures in the immediate vicinity, thus promoting rainfall. Abundant rainfall leads to healthy vegetation and healthier livestock that feed on it. It ‘fends off disasters’ by bringing down the speeds of storms and helps prevent soil erosion. Not only that, the sacred grove also plays a crucial role in water conservation. It acts as a large sponge that soaks up water during monsoon and recharges groundwater resources. In addition, such forests have immense potential in carbon dioxide sequestration.

It is also a refuge for leopards, black bears and musk-deer. It is the nursery and store-house of several medicinal herbs for fever, stomach ache etc. “The hakim is the only person who has an extensive knowledge on the medicinal plants” informed the villagers. However, the villagers have clearly lost touch with the practice of venturing into the forests in search for herbs.

But the picture is not so bright anymore. Jasoli youth are migrating to cities. If the next generation of supporters and conservators of the sacred grove become disinterested in its existence, how can it survive? Excessive pilgrimage and tourism can also upset the integrity of the grove. It is important for us to protect the grove so that it retains its lushness. “Only then can we expect Hariyali Devi to smile back and gift us with greenery” believes Sachidananda.



Hariyali Devi sacred grove

from across India. It is managed by a temple trust, headed by priest, Sachidananda Chamoli.

According to him, Hariyali Devi sacred grove is the residing place of ‘Balasundari’ – the unmarried goddess and hence girls that attain puberty are denied access. However, post-menopausal women are allowed inside. As one story goes, once a District Forest Officer of the region, a lady, tried to venture into the grove but her path was suddenly blocked by a huge log. Hence, she had to come back!

Men who go to the groves stop having spices like garlic and onion and live on a vegetarian diet for one week





# Restricted greens

Forest reservation deprives livestock of grazing lands

— Adithi N Rao and Charu Jishnu

Delhi's livestock is fighting a losing battle against the urban sprawl. There is massive space crunch for people, while animals are losing their natural habitat too. But quite often one catches glimpses of small herds of goats, usually in the housing clusters close to graveyards and wastelands. We caught sight of some in Tughlaqabad and followed them for several kilometres to Dakshinpuri where their owners live.

In Dakshinpuri, some traditional goat herders (Gwalias) still keep a few animals although the menfolk have taken to other careers and work in government offices and private companies. But the biggest problem for the livestock is dwindling land for grazing. The ban on grazing in the nearby Jahanpanah Forest adds to the problem.

Jahanpanah Forest is the largest of the 21 protected forests in the city that are managed by the Delhi Development Authority (DDA), while four others come under the protection of the Forest Department. The DDA-managed forests were notified only in the 1980s whereas the others were notified between 1940 and 1950. The Delhi ridge is a reserved forest.

According to a report of Government of the National Capital, Jahanpanah Forest is spread over 800 acres although some say encroachments have reduced it to almost half its original size. It is an interesting green belt located between Tughlaqabad and Chirag Delhi and passes through Alaknanda and Greater Kailash Part II. According to some historians, this forest was part of the fourth citadel built by Muhammad-bin-Tughlaq in the 14th century. Today, it serves as a green lung for South Delhi and is used by many people for morning strolls or for family outings. But it is also misused for dumping garbage. The locals enjoy free access and often use the forest as a shortcut to reach nearby Dakshinpuri. But for the shepherds (Gwalias) like Sarejanwal's family, Jahanpanah offers no protection.

Shantidevi, who belongs to Aligarh, shifted to Delhi 30 years ago because of unemployment and severe poverty back home. She owns a few goats as livestock. The city accorded her food, money and shelter but not much was on offer to the goats as entry was banned to the grazing area. Today she walks for about two kilometres every day to graze her cattle in scattered urban patches of greens, which could be aban-



Photo: Charu Jishnu

doned lands, construction sites or even a cemetery. So the livestock, in reality, is not a source of income but a financial burden, as she now thinks of selling off the goats. "We dare not go into forest because the forest guards can be nasty if they catch us," says Shantidevi. "They demand money from us and if we cannot pay them, they seize our goats," she complains. "Animals have a right to be in the forest, so why are we banned from going to the forest", she asks. She does not agree with the law that forbids people like her from taking their livestock inside.

Surinder Kumar belongs to the Shepherd's family from Chayata on the outskirts of Ghaziabad. These grazers are often termed as Gwalias. They came to Delhi in search of jobs, have been living here for the past 25 years and have seen it change considerably over the years. He said that Dakshinpuri was a vast open space with a lot of vegetation but today all empty spaces have been encroached upon, animals forced to live on roads (kept away from their natural habitat). Surinder Kumar purchases a sack of vegetables from a nearby mandi everyday to feed his goats which may include brinjals, carrots, beans, radish, mangoes, cucumber etc. He is left with no option as the Jahapana forest was closed down after DDA declared it a protected forest. As he recalls there were many like him earlier till circumstances left them with no option but to sell off their goats. Another reason for doing so was that if they allowed their goats to venture into the forest the guards would take custody of the goat and demand a bribe of 700 – 800 rupees per goat to release them.

But the days of the goats are clearly numbered. The large herds that once roamed these areas are a thing of the past. Now the goats are kept mostly as pets, from time to time providing milk for domestic use. For Shantidevi that's the only solace.



# Taste of Garhwal

Recipes from a small mountain village

— Sangeeta Gogoi, Sumi Narah and Mayank Jain

## Salted Tea

Salted tea keeps the body warm, allays hunger, aids digestion and promotes a healthy cardiovascular system. It cleanses the body of accumulated lactic acid, rejuvenates inner strength and increase stamina.

### Ingredients:

Plain black tea (in bags or loose)  
Salt (1/4 tsp)  
Flour (1/2 tbsp)  
Butter or ghee (2 tbsp)  
Milk (1/2 cup)  
Water

### Method:

Boil four cups of water, put two teabags or one tablespoon of dried tea leaves in the water and allow boiling for 2 minutes and brew. Take out the tea bags/strain the tea leaves.

Pour 1 tablespoon flour, 2 tablespoon butter or ghee and salt into a wooden slim cylinder (shown in figure). Pour the tea prepared earlier into this mixture. Churn the mixture well for 2-3 minutes.

Serve tea while hot.

## Wheat Beer (*Chhang*)

### Ingredients

Wheat grains (1 kg)  
Water (1 litre)  
Wheat flour (1/2 kg)  
One cotton cloth  
Some grasses (locally available)



### Method

Mix wheat flour with some water and make a dough. Make wheat balls out of the dough and spread over the grasses on the floor. Cover it with the cloth and leave it for fermentation for 2 -3 days. Sun-dry the fermented wheat balls.

Then boil the wheat grains. After they soak water, cool them for some time and mix with the wheat balls and leave for 1 week. After this, fermentation juices are released which can be stored and consumed as *Chhang*.

## Chuli ki Chutney

### Ingredients

Chuli (Apricots) 3 to 4  
Sugar (1 tsp)

Corriander leaves

Pudina (mint) leaves (5 to 7)

Chopped garlic (4-5 pieces)

Water (1 cup)

Red chillies (whole)

Salt to taste

### Method

To 1 cup of water, add 3 to 4 small size chuli (apricots) and boil till they become soft. After cooling for some time, smash the chuli and remove the seeds. Add salt, sugar, coriander leaves and pudina leaves. Finally add some chopped garlic and red chillies and grind to make a thick paste. The chutney is now ready to be served with chapatti and/or rice.



