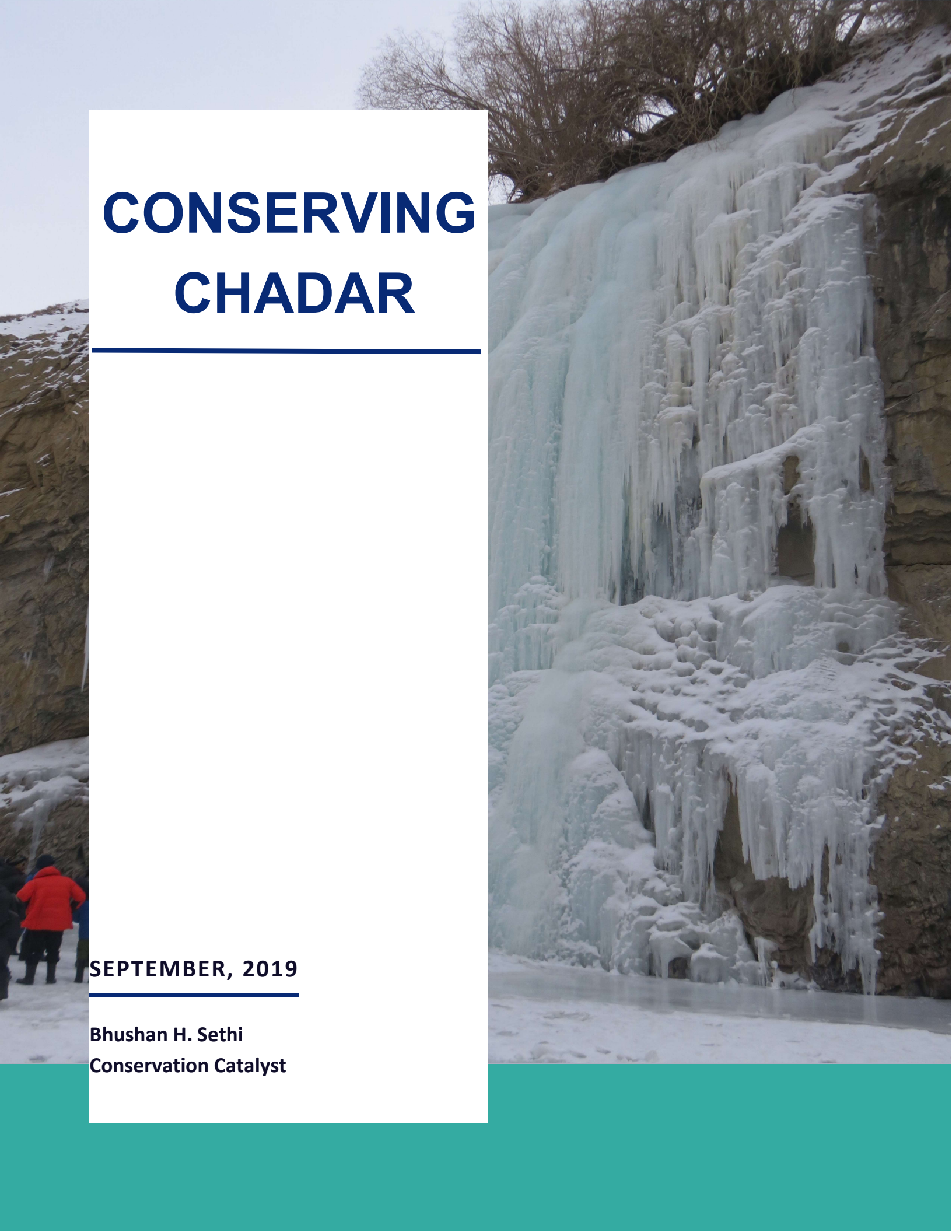


CONSERVING CHADAR

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A Brief Introduction

JULLAY!

This document presents some approaches to help sustainability of the *Chadar* and the greater *Zaskar* valley towards preserving natural and cultural treasures of *Ladakh*.

At the outset I would like to impress on readers that sensitization, education on **Sustainability** is a great value addition and an important context to help ongoing discussions for an all-around improvement to any **outdoors** experience. Such an exercise takes many rounds of discussions and consultations with stakeholders towards implementing the best approach / strategy. This itself is rewarding, ultimately benefitting the landscape and livelihoods of all involved. It is also worthwhile to develop a multi-year multi-point vision for a year on year improvement. The easiest approach could be to first curtail any environmentally un-friendly activities and then make further adjustments for next season based on feedback. This way effect of each change can be monitored and fine-tuned further. **If this is not followed then the joy of doing unique expeditions will be short lived and die out in years to come! Like the *Stok Kangri* closure that happened this year due to unsustainable tourism and its side effects!!!**

See(https://www.outlookindia.com/outlooktraveller/travelnews/story/69177/C_hadar-trek-to-soon-be-banned) - article's like this are concerning and may become reality if no timely action is taken.

Furthermore, making any activity sustainable does not essentially mean reducing its business or commercial gain in the longer term. Even though there may be a fall in revenue or gains in the short term it will be compensated many-fold long-term as sustainable practices itself ensures the activity continues longer. Identifying the right impact and costs to environment and any other intangible effects need a positive approach on behalf of all stakeholders. Thereafter suitable adjustments can be made to

the cost structure of the experience to address any gap. Ongoing support and understanding from all stakeholders and visitors then ensure better maintenance of the landscape and continuation of the *Chadar* trek. **This is the goal!**

I must say having witnessed the pro-active and rich value system of the *Ladakh* people it is my sincere endeavor to bring new best practices and suggestions to them. This should also help cultural preservation in a world where such values are fast disappearing! The tussle between development, livelihoods and sustainability can be made a healthy one by balancing all sides. This is clearly evident in states like Bhutan as the government and people have aligned to ensure sustainability via the unique concept of Gross National Happiness, instead of a GDP only view. It is the cost of maintaining precisely this culture and nature that sustains us, that is foremost in each and every endeavor including tourism. Bhutan could have brought in a lot more money into the country if higher tourism numbers were allowed at cheaper costs. We need to understand that there is a cost to maintaining quality of life and natural resources. Especially in high-altitude region's where resources are very scarce, preservation and respect are required. Only then can sensitization of visitors be made for a controlled growth in tourism while preserving cultural values via education and discussions.

Finally, I encourage the district administration and leadership in *Ladakh* for a pro-active outlook towards **Sustainability** and carrying capacity of each trek landscape into their best practices. Encouraging people's involvement via sensitizing local communities will help preserve the rich culture, ensure cleanliness, help livelihoods towards a prosperous *Ladakh*. We look forward to help develop this for *Ladakh*.

My sincere best wishes to all!

CONSERVING THE CHADAR LANDSCAPE

A Background

Chadar.... the frozen river! For centuries people of the *Zaskar* valley as far as beyond *Padum* have used it as a way to walk to *Leh* markets. There is no road access in winter that connects the valley with the outside world. Over the last 2 decades, it has developed in to a trek that commercial tour operators promote – and truly is a unique experience!!

Given the effects of climate change globally the condition of *Chadar* trekking season varies from year to year per the weather, in that the strength and thickness of ice formation. Besides climate change the other main factor that effects the *Chadar* landscape is the human pressure and their effects, especially from trekkers. Side effects like footprint density, human waste decomposition & dissemination, garbage dumping & removal etc. All this affects flora, fauna, sustainability of *Chadar* and greater *Zaskar* valley landscape.

The district administration makes every effort to preserve the region and make it safe for trekkers. They now mandate a 3-day pre-trek acclimatization stay and medical fitment tests at *Leh*. Also, medical insurance is now mandatory for all and there are medical camps en-route to handle emergencies. For the well-being of the *Zaskar* landscape a limit on number of tourists per day on *Chadar* exists. While it is good to see all these practices probably as some of the first in the country, this document makes some additional suggestions.

I have visited the beautiful greater *Ladakh* region a few times now and given the uniqueness of *Ladakhi* terrain I feel we need to work with the district administration to help further maintain the cleanliness and sustainability of the region. This will ensure trekkers continue to have a seamless experience year after year. To achieve this the natural recourse would impart as much new education in different areas. The best will be to implement the globally renowned and well-established '**Leave No Trace**' ethics as

a basic minimum. Thereafter leadership training and Wilderness First Aid (WFA, WAFA & WUFR) certifications for first aid/health to field staff will help. This is a multi-year and continuous education/development goal. It will benefit the *Ladakh* landscape with better skills to aid the livelihoods of communities for decades to come.

By way of this document, I hereby attempt to present some simple observations and mitigation suggestions that should be deliberated amongst the immediate stakeholders. They can then be incorporated in to current SOP's as best practices. If better SOP's require an increase in time for sensitization of trekkers and communities and thereby costs to them, it will still go a long way. This increase is to be taken as an investment and not cost. It ensures knowledge, skills and safety upgradation and most importantly sustainability in the landscape.

Towards this there have to be discussions with business and livelihood stakeholders to work out an acceptable approach and prioritize various suggestions. This is crucial to achieving a healthy balance between incomes / livelihoods and sustainability. It will make everyone involved appreciate the available natural resources and create a respect towards preserving them. Thereafter trekkers once sensitized via the upgraded program will value the experience much more thereby directly encouraging sustainable practices along the way. I am sure there have been discussions already on some of these issues, they just have to include some long-term goals, new global standards and best practices.

General Observations

For our group it was a wonderful experience setting out from *Leh* early morning towards the Indus-Zaskar sangam, then to Chilling for the trek. Finally, as we neared the *Bakola* cave, we could see partial *Chadar* formations. Currently for the most part, the *Chadar* trek starts off at *Bakola* and ends at the *Nerak* waterfall for 95+% of the tourists, only few continue thereafter to stay at *Nerak village*, *Lingshed* or *Padum*. However **less than 50% trekkers** enrolled could complete the full *Chadar* experience. The challenges why the most could not finish are mentioned below along with some suggestions that can be taken up to improve trekker's experience and sustainability.

A. Unsustainable Human Pressure

During the walk up to *Nerak*, there were a few places where the ice was badly eroded. At places, 1+ foot deep water pools had formed due to repeated walking and



Trekkers line up and wait as to cross through a water channel created due to human pressure

ice erosion due to **heavy sledge use**. In weaker ice areas walking first crushes the ice to small glass cube like pieces and then continued human pressure of walking/sledging over this already crushed ice then compounded by the warmth of the day's sunlight make it melt forming a water channel/pool. This excess day after day human churn makes the volume of water in this pool large enough to maintain its warmth. So much so that this water does not freeze brick solid even when overnight temperatures plummet to under -20.

At places trekkers and guides/porters were lined up to 30-60+ individuals waiting to cross through these pools. This is mainly due to the number of people being much in excess of the ice's carrying capacity, ultimately causing the ice to eventually dis-integrate causing a break in the continuity of the *Chadar*. On my return back from *Nerak* to *Bakola*, these huge weak ice links in the *Chadar* had totally disappeared causing a discontinuity in the ice and trekkers had to climb on rocks for 100+ meter distances (at places with attached ropes), this was an extreme hardship to senior aged trekkers and porters carrying large loads not to mention a severe safety hazard.





More importantly but sadly due to ice breaks new trekkers coming to *Nerak* later could not proceed forward and had to abandon and return back to *Leh* without completing the trek experience. Some groups were stuck at the Yogma camp for 3 days since they could not proceed to Nerak nor return back due to ice breakages. Many had their return flights booked and had to make a no-choice departure back to *Leh* braving all odds.

Data needs to be checked as to how many could not complete Chadar, **my guess more than 50%!! On some day's trekkers MUCH in excess of the daily limit of were starting the trek along with their support staff! This is the MOST important issue!**

SUGGESTION

1. Actual carrying capacity of *Chadar* needs to be computed for last season based on success average. This can then be further fine-tuned based on the strength of the winter each season,

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2. Calculate the actual and sustainable **Seasonal Capacity of Chadar [SC]** as number of actual trekkers completing the trek in last season.
 3. Then a **NEW per day Trekker Count [TC]** computed as $[SC / \text{trekking days within the season}]$. 2019 was a good year for weather in terms of temperature, snow fall **and** thickness of *Chadar*. In subsequent years when such ideal conditions do not exist the day limit **[TC]** may have to be further reduced even below the **NEW** capacity and monitored closely day to day!
 4. *Once in place this* walking path in the ice should be monitored to prevent damage and ensure weak links don't develop that could cause a total path breakdown. This be the most proactive way of monitoring,
 5. Natural ice breakdowns can't be helped anyway and ice conditions change by the hour. Quick action may have to be taken in case a weakness develops in the ice to ensure trekkers safety and return. To facilitate this, *park wardens /trained-porter(s) with good sensitization skills needs to walk and assess the Chadar on a daily basis to check for excessive human use and ice quality degradation.* They can then radio back and indicate to the *Bakola* starting point (& Leh office) to regulate further inflow and permits. This will help save the ice from total breakdown and trekkers getting stuck en-route thereby causing a safety hazard.
 6. Trekkers should be advised to **keep 2 additional free days after end of trek date** for return flight bookings to accommodate for delays due to weather, health or any other inadvertent reasons
 7. Trekkers should be recommended to carry good trekking shoes and wear them as suitable. Gum boots have no grip on ice and are slippery. They should be used only when wet and watery conditions exist, otherwise trekking shoes with good grip can help prevent falls and slips that cause medical conditions,
 8. **Crampons to be prohibited at all costs.** It causes bad degradation of ice at sensitive places which ultimately causes *Chadar* to completely break down leading to a discontinuation of the trek. Individuals need to be advised as guides don't strictly enforce crampon rules to them. Most foreign tourists prefer to wear them as they are used to on icy mountain trails back home,

B. Trekker fitness and sensitization

One notices that a significant percentage of trekkers coming on *Chadar* did not have enough outdoor exposure or preparation. To name a few most had

- No prior trekking experience! None whatsoever, other than picnics or fun outings OR
- No Himalayan exposure at all let alone being at any altitude for that matter OR
- No experience to being exposed to even low to zero temperatures let alone sub-zero's OR
- No sensitization as to what it meant to be on a trek, expedition or most importantly OR
- How to conduct oneself with regards to safety, environmental, nature sensitization etc.

Flying in to *Leh* from any city in summer itself is an acclimatization challenge to most visitors. Going there in the winter with no exposure to altitude or cold can indeed be an extreme experience. It will be worthwhile to check fitment and filter out un-fit individuals. Most cases of emergencies tend to arise from such individuals for the most part. Trekker permits and medical data can be checked to confirm the same. Like this <https://youtu.be/hhdzvX9XCjM> video, individuals make lot of appealing movie clips which give it a picnic like visual appeal. Fun, music, campfire seem to shield viewers from the hardships of altitude, temperature and discipline involved. With ease of social media such videos make a strong online advertisement. This is extremely detrimental to the mindset with which new individual's sign-up for *Chadar*. This is something that cannot be withheld and hence fitment of people coming in has to be ascertained and sensitization imparted. This malady is not limited to *Chadar* only but to any tough but beautiful trekking destinations globally that feel within easy reach with no apparent hardship and skills required. Ease of affordable trekking apparel today makes it seem all easy and within reach. Few newcomers do the required preparation for a trek or understand the effects of altitude/temperature.

SUGGESTION

1. After discussions on fitment criteria, pre-conditions to be put in to place to have
 - a. only allow trekkers with a certain minimum year trekking experience on *Chadar*,
 - b. additionally, within the above experience, trekkers should have done Himalayan/altitude treks (e.g. 10-12,000 ft.),
 - c. been exposed to certain minimum low temperatures. [e.g. -20 to -25 deg Celcius],

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- d. once the above fitment criteria are in place it will be much easier for the guides and porters to manage the groups due to trekkers familiarity,
 - e. most importantly the groups size will come down to a sustainable number thereby reducing the wear and tear on *Chadar* and ensure more trekkers can finish the trek,
2. What works against most of the trekkers are combination of all of the above factors compounded with the ease of flying directly into *Leh* at 11,000 ft. Then lack of training whatsoever before landing up at *Bakola* for *Chadar*. Therefore, at *Bakola* a 30/50-minute temperature confirmatory test can be introduced where trekkers will be given this time to demonstrate sustenance to temperature and surroundings. This should help identify weakness in seasoned trekkers as well. This way medical camp doctors can then advice on temperature-endurance fitment and if issues persist, take a decision on continuing further. If this check is adopted it will help pick out any case that may cause a concern later. It will also help the team leaders identify susceptible individuals to avoid further medical issues downstream in case the weather gets bad or if a group gets stranded
 3. Thereafter, a *POLICY to ensure everyone's fitness - start of day and bed time checks by the trek leader, if there is any sign of discomfort the individual needs to be taken to the nearest medical camp immediately! This will ensure there is no loss of life or limb and MOST importantly the medical team has enough time to help the individual and transport him to Leh should the need arise.* PLEASE NOTE A seemingly small issue at bedtime may compound by morning if not addressed thereby increasing the challenge on the medical staff many-fold in the morning. This may cause fatalities.
 4. A list of *Chadar* requirements and trekking qualification sheet needs to be prepared and shared with the operators in advance requesting compliance from all those signing up before flying in to *Leh*. Thereafter the operators will have to validate the compliance in person or filter them out,
 5. To implement this, a (Online?) **registration program for permits** with the above criteria could be instituted. Only once this permit is okayed can the tour operator sign up the trekker. The permit process can ONLY be done via registered *Leh* operators to ensure control and seamlessness – this needs to be deliberated at length for ease of implementation to make a fool proof system. This is achievable and such quota systems are already in place in multiple National Parks and protected areas in India and abroad,

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6. Strick waste disposal rules need to be implemented to individuals and operators. For the same **forest-department wardens**/ trained porters can keep an eye for cleanliness and hygiene, at camp sites and en-route. Small hip belt waste pouches per walker made mandatory,
 7. All expedition generated waste to be packed in gunny bags and to be carried back to Leh's waste processing facilities by each team's vehicle. This should be similar to all supplies as bought in to the region,

Note: The above **is not meant** to keep any of the trekking community **away** from *Chadar* in anyway, it's to ensure individuals build their exposure and experience for some period of time before attempting *Chadar*. This is very much in line with principles of high-altitude trekking and safety that is followed globally. A trekker never flies in to 5,000m directly before attempting a 5,500m peak but prep's a few attempts with lower altitudes peaks first. Also, during the actual expedition the start is always from a much lower altitude, giving the body time a few weeks' time to acclimatize to altitude and drop in temperatures *progressively*. **What works against *Chadar* is that people fly in directly to Leh altitude and proceed to Chadar on 4th day.** Chadar does not have any climbing or ascent involved to filter out un-fit individuals. In climbing and trekking expeditions incline's automatically stop trekkers from proceeding if they feel unfit or cannot deal with it and guides can easily detect this.

C. Campfires

The *Chadar* walk till *Nerak* waterfall is about a 35km distance with three overnight camps en-route. The first at *Shingra*, second at *Tibb Cave* and third at *Yogma*. Thereafter it's a walk to *Nerak* waterfall and back to *Yogma* for overnight stay and then return. The absence of tree cover in the landscape from the *Bakola* starting point until *Yogma* is very obvious. A binocular scan of the surrounding mountains shows an extremely sparse to non-existent wood stock even on higher elevations. This limited tree stock takes a long time to grow in the arid mountains of *Zaskar* valley. However, as you proceed to *Nerak* it progressively increases in density though only marginally. However, after *Nerak* as the track breaks off to *Lingshed* the wood stock is much higher as people are restrained from using the wood as land is protected under the *Gompa*.

Local staff on trek may have rights to extract wood for self-consumption but in this zone even that puts pressure on the extremely meagre dry tree cover. Further, seeing local staff even tourists will make requests for camp fire. It should be declined **at all costs**. This is non-negotiable nature-wise! What could be burnt may be dry and non-polluting garbage at best. Also allowing one group to do a camp fire make others want it too!







As the above pictures show, there is little or no tree cover left on the main trekking route of *Bakola-Nerak* so there has to be a 'severe' restriction on any and all campfires.

It is observed that in the 3-day acclimatization stay at *Leh*, individuals visiting for the first time in winter are hit with an extreme temperature drop and tend to overheat their rooms and dining rooms. Exposure to excessive wood and kerosene fire results in body losing its acclimatization to cold and makes one feel worst the moment they step out of the warmth.

This is counter-productive to the principle of body's functioning and acclimatization as well. Naturally, these individuals then try to repeat this on the trek at night with adverse environmental impacts. Tourists may continue to make demands but campfires are a strict NO while on *Chadar*. Trekking staff should be highly sensitive to this!

SUGGESTION

1. Improvement in sensitization program plus sign off sheet can be added in the 3-day stay at *Leh*. A short video/film can be presented and Q&A session conducted on day-2 in addition to the current medical tests on day-3,
2. Trekkers should be sensitized to get maximum cold acclimatization during *Leh* stay and avoid over exposure to heat,
3. Leave No Trace practices for snowy/frozen ecosystems could be studied/applied,
4. Thereafter campfire for tourists to be strictly prohibited and fines to be imposed on tourists and operators,
5. Minimal fire done by porters using ONLY dry non-polluting garbage can be allowed. Porter and guide sensitization program to be developed and thereafter liability and responsibility added for cutting/collecting wood,
6. Better clothing and more food availability for guide/porter staff & sensitization,
7. Forest wardens on Chadar route to monitor compliance and impose fines and register porters/guides identification for mis-conduct.

D. Human Waste

As one alights from the vehicle at *Bakola* road head, it's probably the highest congregation density of people. Trekkers, porters, other support staff and other related activity - being the start and end point for all *Chadar* expeditions. The teams move to the river below immediately to set their feet on ice for repacking, trek readiness, lunch preparation and consumption and all other pre-trek activities.

This adds human disturbance and related issues on to the *Chadar* ice as up to two hours of time is spent by each team in this spot.



SUGGESTION

1. What will help best is that post disembarkation from the buses at the *road head*, trekkers & guide/porters be asked to stay on the road level itself. All pre-trek preparation, freshening and washroom activity be completed here until lunch is

served. All café's and medical facilities also exist on this level. Only once it's time to start the trek, should the trekkers and their guides/porters get on to the *Chadar* and post 5-10 minutes of ice-surface acclimatization start walking. This way all human waste generation activities and garbage etc. stays at the road head itself thereby facilitating easy collection and saving the *Chadar & Zaskar*

2. All generated & collected waste to be packed in to big bags, sealed and transported back to *Leh* for disposal processing on the same empty buses that head back after dropping off trekkers. Essentially, all material and left overs bought in to the region by each trekking group needs to be carried back by same group. Need to ensure waste is not accumulated along the route for end of season collection and add any overhead to the district administration

E. Toilets and bio-degradable Waste



Bathroom Tents set up by the river

Finally, there is lack of wild animal activity except *jackal* tracks that emerge at night. This is probably because *canid*'s come scavenging for leftover food and garbage etc, basically looking for human left behinds. This is a risk if they pick up unsuitable food items, plastics etc. or even human waste. Deer tracks start appearing near *Nerak* as the wildlife can sense the place to be in-violate to roam freely. After *Omah* a lot of snow leopard tracks are visible, some even frozen in the ice below the surface which may go to show that it is a regular activity in the region.

A lot of *jackal* tracks visible in day 2,3 & 4 of trail till *Nerak* indicates that they are out scavenging at night. It is important to ensure there is no open defecation as canids generally are known to look for any feces as that has certain enzyme content that helps derive nutrition. Therefore, it is easy to get infected if infected human feces are around, even a little sub-terranean waste covered by sand / mud that can be easily dug out.

As one nears *Omah* after *Nerak* the deer tracks suddenly start appearing in large numbers and multiple paths crisscross the ice showing it to be start of the free 'wild' terrain. Thereafter snow leopard tracks are visible and after the *Lingshed* junction off the *Zanskar* these tracks also increase in numbers. I have measured up to *three* fresh snow leopard tracks crisscrossing paths with human tracks simultaneously as well. There was an adult snow leopard track with a younger one in tow at one place indicating that breeding females also inhabit in and around the deeper *Zanskar* valley that are away from human presence. Having spent a lot of time in tiger dominated landscapes and having spotted snow leopards in *Ladakh* previously this was good to spot and is indeed a treat to see.

Next page : Crossroads of human and wildlife (snow leopard tracks) after *Nerak* on *Chadar*...



SUGGESTION

1. Toilet tents with pit and sand technique at the ground level off-*Chadar* are very susceptible to contaminate surroundings when water levels rise. This distributes the human waste in the surrounding campsites. The river water is freely used by all for drinking, cooking etc. It is recommended to build a few more permanent deep-pit toilets (Ladakhi or bio degradable) like existing ones on the route. This will ensure efficient ground based natural bio-degradation of human waste. Once number of trekkers on *Chadar* is managed to a sustainable and healthy number as suggested in #1 above, sanitation will be much better. It may be worth mentioning here that the US Forestry service mandates people pack human waste and carry it out in sensitive natural habitats.
2. Fixed toilets should be built above the summer water line/flood line mark. A lot more sensitization needs to be added to enforce no defecation in the gravel near camp sites even via bathroom tents. While camping human waste covered with mud/sand in bathroom tents easily goes back in to the water as levels rise. This will only carry the human infection & parasites further by water or scavengers only to enter the wilderness chain. This has to be addressed!
3. Finally, trekkers to be sensitized to carry extra plastic garbage bags so that any inadvertent human waste can be collected and any paper tissues/wet wipes etc. be bagged and dumped at the next camp for disposal and NOT left en-route!

These are some of the broad areas of concern where human density affects the sustainability of the flora, fauna and the *Chadar* ice itself. We need to work towards taking up a process of continuous improvement step by step and year after year towards helping reducing these effects. I am sure *Ladakh* District administration and the citizens of the region can make this a win-win by sensitizing all involved and set a standard for other states as well.

Following a strategy of selection of suitable trekkers, followed by providing sensitization and education pre-trek on all aspects of safety conduct and regional specifics will ensure sustainability of the greater *Chadar* region to a great degree. This will automatically ensure we leave no trace as the season ends each year.

Towards a sustainable future

The district administration is well aware what the 3 Idiots movie did to the Pangong Tso tourism influx. Thereafter challenges to resolve issues of un-controlled / un-sustainable tourism and other human problems are well known. To prevent trekking on *Chadar* from going the same way these suggestions can be discussed and implemented. The main philosophy and approach to all these is via continued education and sensitization to all actors in the landscape year after year.

ACTORS in the landscape

1. Administrations and Managers
2. Operators associations, Guides, Porters
3. Local community if home-stay's are used (e.g. *Nerak, Lingshed*)
4. Medical providers and their Staff
5. Trekkers
6. NGO's and Support Action Groups

All actors should be updated on the needed best practices. Leave no Trace needs to be strictly followed, both as sensitization to the tourists and as a training to the guides requesting strict enforcement and reporting. Suitable punitive fines need to be implemented for actors in the landscape reported violating.

To take this forward, a strategy followed by a detailed plan needs to be put together on suitable upgrades to all aspects of the current operation across all actors. Thereafter pre-season meetings with stakeholders is essential for sensitization and feedback. This will then enable trekkers coming in the next season to have a good *Chadar* experience.

An example link and suggested action points from a Support Action Groups 'RockyFeet' is included on the next page.

Proposed RockyFeet Solutions without creating ban on tourism - Link:

1. Littering is a common problem across the country and the only solution to it is developing awareness by repeated positive campaigns. Every travel agency, guide, porter and other supporting members of *Chadar* trek operation need to be awakened about it. Every year green workshop can be conducted beginning of the season. They are the key persons to act on this and bring the change. Agency must show their participation certificate of the workshop before obtaining an environmental permit for their group.
2. The Clear message to stop littering need to convey to every trekker participating Chadar Trek on every day briefing irrespective of agency they choose. The previously mentioned workshop should help to create the coordination.
3. Installation of signage at campsite conveying a message to stop littering may keep everyone on the trail on track.
4. Installation of dustbin at the campsites, in parity of size to the quantity of waste generate, is a mandatory solution. This will help trekkers to dispose of their non-littered waste.
5. End of the season or periodic cleaning expedition is absolutely mandatory to bring this waste back to *Leh* waste yard. Trekking Team or Group who will participate in voluntary basis to bring back the waste from campsite; can be incentivized with money refund from their environmental fees on per KG of waste basis.
6. Sanitation problem can be addressed by creating permanent *Ladakhi* Dry Toilet Or Bio toilet, a smarter & much effective version of *Ladakhi* toilet, in decent numbers at campsites. Major designated campsites have enough space for it too. We have this best practice available at Nilamaling campsite in Markha Valley trail.
7. Earlier proposed workshop can bring awareness on the issue of campfire too. But the campfire is only created by the local stuff of Chadar trekking operations to get warmer. Sometimes on request of fun from trekkers too. On an open discussion with them, bring the fact of a deficit of warm shelter & clothes for them. Most of the time even tents are not planned in equipment list for them. Also, there is no united body to represent the concerns of stuff like porter, guide, cook or helpers. So, one solution to it can be initiated from agency side by providing enough warm clothes, sleeping bag and tent for them as well as trekkers. Unless this difference of adequate gear is not disappeared, we will not have any right to approach them with a request to stop campfire. This will definitely increase the operation cost of an agency per trekker, but we need to convey the message to our trekkers to bare it for a brighter & sustainable future. Bringing wood from city to burn, should not be considered as a solution. Carbon emission from the campfire will definitely create sedimentation of the carbon layer on top of the ice sheet and work for the melt of sooner.

Next Steps for Chadar and other landscapes of Ladakh

Ladakh is uniquely positioned for promoting sustainable tourism development as compared to the rest of India as any tourist movements out of *Leh* are administered using **Permits**. This application trackability and established link with tourists can be developed further. It can be upgraded to provide face time, suitable sensitization, impart education and ensure healthy tourism. Globally, natural preservation areas grant only a fixed number of daily permits. The above combined with sensitization of local communities (deriving livelihood from any kind of tourism) & the operators association can be leveraged to develop sustainable and clean tourism infrastructure practices.

Government agencies and commercial operators involved in overseeing/regulating safety of people and environment in any area could consider gaining Organizational Leadership training. Relevant training courses from an organization like ‘Leave No Trace Centre for Outdoor Ethics, U.S.A.’ (www.Int.org) or the ‘National Outdoor Leadership School in India and U.S.A.’ (NOLS) will go a long way to evolve Ladakh’s outdoor experience for all. ‘Leave No Trace Centre for Outdoor Ethics’ was formed in the 1960s as an initiative of the USDA Forest Service. It was further developed by the ‘NOLS’ before Leave No Trace was incorporated as a not-for-profit organization. It is finding widespread acceptance globally including Australia.

‘Leave No Trace Centre Seven Principles’ have environment friendly practices for various kinds of ecosystems and have robust training programs for various profiles of people and organizations that function in the outdoors and are responsible for safety of people and environment. *Chadar* would benefit from the frozen ecosystem processes.

India presence: NOLS, India functions primarily by conducting outdoor leadership courses of 30 to 60 days’ duration in the Indian Himalaya. NOLS has also conducted a review of the 10-day outdoor leadership course offered by Tata Steel Adventure Foundation. There are Indian instructors of NOLS that are qualified to teach Leave No Trace Seven Principles. **Finally, I encourage the district administration to take this up on a priority basis and look forward to seeing *Ladakh* develop sustainability programs in its landscape per globally defined best practices.** Outcome remains to be seen!

Julley!

