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Song of the Dzopa: A Case Study of Traditional Farming, Food, and

Isabella Pezzulo

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Song of the *Dzopa*:

A Case Study of Traditional Farming, Food, and Community in Ladakh



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ABSTRACT

In a plane high above the snow-capped jagged peaks and cracked earth of Ladakh, I stared down below with awe, wondering how people ever coaxed life from the soil in this mountain-desert landscape. The intention of this study is to see how traditional subsistence farming actually takes place and the social settings formed by these practices. Living in the village of Tar for a little over twenty days allowed me to observe the age-old practices in which nourishment is produced and community formed through working the land. Working with my hands and resting with cups of butter tea alongside villagers in the fields, I saw the interconnectedness of agricultural systems and the social fabric of Tar. Modernization, government subsidy, and the migration of youth to the cities are all contributing to slow but meaningful changes to farming and food practices in the village. Furthermore, perceived changes in farming and the foods that are produced and consumed in Tar are used to anticipate changes in the livelihoods of the *Tarpas* in the face of development. Future implications for agriculture in Tar are also discussed, of which sustainable development projects and the encouragement of young farmers are a light for the preservation of this rich aspect of Ladakhi culture.

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The time I spent in Tar would not be as meaningful or as much fun without my homestay host *Ache* K.P., and many other villagers in Tar who have made my time there memorable. I hope to return to Tar to farm for an extended time because of the kindness they have shown me.

Also deserving of many thank yous is Becky Norman, who made getting to Tar incredibly accessible by accompanying me on my first trip there. Without her, I very easily would have gotten lost along the way, and would have had no Ladakhi language skills to reach my destination. Her encouragement and willingness to help me with my ISP made a world of difference.

I'd like to thank all of the students at SECMOL for being incredibly warm and making me feel welcome in Ladakh. When I wasn't in Tar, I was able to learn at SECMOL about the lives of these young and bright individuals.

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INTRODUCTION: FARMING AND LADAKHI IDENTITY

Before I even knew where Tar village was geographically, my research began in the fields at the Students Educational and Cultural Movement of Ladakh (SECMOL) campus in the village of Phey. The students come from a variety of backgrounds and villages all around Ladakh to gain confidence in academics and English-speaking. Being at SECMOL allowed me to ask questions of the students, giving me some perspectives on their villages and the livelihoods of their families. During work hours when all the students do chores around campus as a part of their daily routine, I observed that part of Ladakhi heritage is rooted in self-sufficiency and the ability to do practical tasks such as farming. While hauling manure by hand to the campus fields with several students, I discovered that often their parents were farmers who ate from the land as subsistence farmers. One of the students told me they began farming in primary school, as we dumped a load of manure around an apricot tree and started walking back for another trip. Many SECMOL students had spent their childhoods toddling around with yaks, *dzo*, sheep, and goats in their families' fields. Now that they were in school, and particularly one that encourages the preservation of Ladakhi identity, the students continued to help in the campus's many gardens, greenhouses, and fields. Nikki, a SECMOL staff member and garden caretaker, told me as she fixed an irrigation pipe that working with their hands is something the SECMOL students desire. This craving to be hands-on, to move beyond the confines of a textbook, may have something to do with watching their parents and grandparents having intimate connections with the earth through farming.

CAITLIN AND JASON: LIVING LIKE TARPAS

Having experienced very few instances of truly local, small scale food systems in the West, I was curious about the 35% of farmers who still practiced indigenous agriculture in the mid 1990s¹ The village of Tar came to my attention when I learned of two Americans who had been farming in Ladakh for the past year. Jason Chandler and Caitlin Thurrell started their journey in wintertime at SECMOL. The couple from the Northeast had picked up Ladakhi language in a couple months, and then immediately dove into living amongst the *Tarpas*. Since then, they had been participating in all aspects of farm and village life—from shepherding, to house building, to singing traditional Ladakhi folk songs. I observed the extent to which Caitlin and Jason are considered insiders in Tar from their eagerness to live and learn from within the community, and because they are known by their Ladakhi names, *Nilza Angmo* and *Puntsok Dorje*, around the village. After meeting these individuals in their cozy one-room home in the upper part of Tar, I got a the sense that they deeply understood Tar through working in tandem with locals and being insatiably curious about traditional Ladakhi farming. When they suggested I stay in the village to farm, and that plowing time was fast approaching, I was more than elated to adopt their style of learning by the *shol* and the *tokse*.

¹ Helena Norberg-Hodge, Todd Merrifield, and Steven Gorelick, *Bringing the Food Economy Home: Local Alternatives to Global Agribusiness* [Zed Books, 2002], 4.



Photo by Isabella Pezzulo. Enjoying a cup of tea with Jason and Caitlin (left) in their home located in the upper village.

FARMING IN TAR: PAST AND PRESENT

The village of Tar, like its farming and food practices, remains relatively untouched by modernization. There is no road into Tar; one must walk from the highway and up through a breathtaking gorge to reach the village surrounded by towering hills. Because of their remoteness, people in Tar are fairly reliant on their own land and resources for sustenance. Anything that does not grow in Tar, such as rice or sugar, needs to be brought up the mountain, and anything that cannot be carried by hand is brought up on the backs of *dzo*. The staple crops that the villagers plant are barley, wheat, and peas, some mustard plants for oil, along with apricot and apple trees.² Households will also supplement with gardens or greenhouses filled with greens, vegetables, and herbs. Barley is often ground and roasted to become *ngamphe*, known as tsampa to Tibetans, and is a staple food of the Ladakhi diet.³ What is not made into *ngamphe* is brewed into *chang*, a fermented barley beer that is pale-yellow and bubbly when made fresh. It is popular at many Ladakhi gatherings, and was consumed in robust quantities during plowing. *Chang*, I would later find out, was an important part of social gatherings in the seasons that required many hands such as plowing and harvest time.

At my homestay, my host *Ache* Kunchok Palmo (known as K.P.) and I would often make traditional Ladakhi dishes that consisted completely of ingredients she had stored from last year's harvest. I would huddle as close as possible to *Ache*'s woodstove, delicately forming *chutagi* with my inexperienced fingers. *Chutagi* literally translates to "water bread" from Ladakhi, and is a dish of wheat noodles made from local flour folded into a shape resembling a chinese cookie. We also often added fresh greenhouse greens to this dish along with *nyab tug*, a yellow vegetable that looked to be like a turnip or rutabaga. *Skotse*, a chive-like herb that is both cultivated and wild-harvested in the mountains, would be thrown into the sizzling frying pan with ginger, garlic, and other spices to prepare the *chutagi* sauce.

About 20 or 30 years ago, the villagers of Tar grew their crops without the aid of chemical fertilizers. Instead, they would use the manure, called *lut* in Ladakhi, of their livestock—cows, *dzo*, sheep, and goats.⁴ Human waste is also utilized in the fields from the composting toilets in the village homes. *Lut* is kept in massive piles in one field to be distributed among a household's many other fields during plowing. Today, the shortage of both animal manure and "humanure" is causing farmers in Tar to use government-subsidized chemical fertilizer. This topic will be discussed later on in-depth.

² Chandler, Jason. Interview by the author. April 9 2016.

³ Juliane Dame and Marcus Nüsser. "Food Security in High Mountain Regions: Agricultural Production and the Impact of Food Subsidies in Ladakh, Northern India", *Springer Science+Business Media B.V. & International Society for Plant Pathology*. 186.

⁴ I was told by one of the older members of the village, *Me-me* Wangchuk, that sheep and goat manure are the best for crops.



Photograph by Isabella Pezzulo. Three women use rabats to smooth the ground after it has been plowed.



Photograph by Isabella Pezzulo. Ache K.P. standing with a team of dzo for plowing.

AN OVERVIEW OF FARMING PRACTICES: THE SEASONAL CYCLE

The villagers of Tar move with the seasons; a cycle of work, rest and celebration that depends on the position of the Earth, Moon, and Sun. I was only able to witness a small part of the yearly cycle as the *chuli* buds began to blossom in the village. Though Jason and Caitlin, having spent the year farming in Tar, were able to give me some perspective on the other farming activities in the seasonal cycle.

SPRING

During the spring, the hard work of plowing and planting begins lasting between 20-30 days in Tar. Watering the fields by way of the intricate irrigation system called *yuras*, channeling glacial melt water always takes place a few days before the field is plowed. The specialization of the *yura* systems is what makes Tar's farming practices particularly distinctive in the context of other sustainable farming practices.⁵ Also notable is the abundance of water in Tar, whereas other villages in Ladakh can experience relative water scarcity as the snowmelt they rely on becomes less and less every year.⁶ Watering the fields a few days before plowing allows the earth to become saturated, and thus easier to plow.⁷ During plowing time, people gather together in the morning and work in groups on the various fields. Before plowing can begin, people must first evenly spread *lut* among the fields, usually by individuals carrying a load on their backs in a *tsepo* and then dumping them in evenly spaced piles on the field. Usually, a team of two *dzo* is used to pull the plow, which is small and lightweight compared to the plows Caitlin had worked with on American farms. The plow would also break frequently when it would hit a rock or a patch of alfalfa. However, they are quickly fixed by chopping a new wooden wedge for the plow blade. Men are almost always the ones who control the plow and lead the *dzo*⁸; the man driving the plow will often sing a song as they move along, praising the *dzo* for their efforts:

Norbu nyiska... tse bo ring zhik
(Both of you, golden, live a long life)
Kulea lokste skot
(come/go, return slowly)
Jule, ju
(thank you, thank you)

⁵ Networks of *yuras* crisscross the village, and water flow is controlled by the opening and closing of rock “dams” that allow water to enter or bypass channels in the fields.

⁶ Janaki Lenin, “As Himalayan glaciers disappear, Ladakhi farmers search for the ideal substitute”, *Scroll.in*. May 21 2015.

⁷ Thurrell, Caitlin. Interview by the author. April 13 2016.

⁸ Called *sholpas* and *dzopas*, respectively.

Ngal tsos zhik le
Yak gu kang se melong zhu chen
(you, son of a yak, are like ice, like a mirror, I respectfully say to you)
*Rzdak po zang pe rgo nor*⁹
(you, treasure of the household)

Traditionally women follow behind the work of the plow with *tokses*, which look like small picks. The women break up clods of dirt and furrows of soil created by the plow with the *tokses*. Then, tools called *rabats* that are like a toothless rakes are used to smooth the surface of the ground where the *tokses* have broken the furrows. The origins of these gender roles regarding specific farming practices are unknown. In Tar, it would be highly unusual and maybe unheard of to see a woman behind the plow. I heard that back in the day, there was 1000 Rs fine for a woman who even touched the plow. However, those rules seem to hold less strictly today.¹⁰

There is a lot of what Ladakhis call *doning*, or eating and drinking together in people's homes and fields to break up the hard labor of preparing the ground for planting. Frequently, thermoses of tea and freshly-baked *tagi* (Ladakhi wheat bread) are brought to the field and the people working are encouraged to rest and "*souja don!*" (drink tea/eat!)

SUMMER

After the ground has been plowed, watering takes place on a semi-frequent basis in the summer. At this point, people are able to rest a bit from the hard work of plowing. The land, once cracked and dusty, becomes incredibly lush and verdant. The high-mountain desert becomes a green oasis, thick with alfalfa and the green leaves of *changma*. The *dzos* are brought to the mountains to graze in the high pastures, and are not expected to come down to the village until winter. People water their fields 3-5 times per week and pick "weeds", which for Ladakhis are perfectly ideal for human and animal consumption.¹¹ Alfalfa, called *ol* in Ladakhi, is common throughout fields and is usually given to the cows. *Toma* is a plant with a tuber-like root that grows as a weed. From what I was told by one of the *Abis*, it is a delicious addition to *thukpa*.

⁹ Translation and lyrics provided by Caitlin Thurrell.

¹⁰ This is known from personal experience; I unwittingly handled the plow when trying to strap a camera to part of the plow—luckily no one took offense or charged me a fee.

¹¹ Women in the village were particularly knowledgeable about wild plants, and would be able to point them out by name, including *khalba* and *hotog*.



Photograph by Isabella Pezzulo. Chondol holding a juniper offering for blessing the plowing.

FALL

Fall is the season of the harvest, when heads of barley and wheat are threshed and straw for fodder is made. The growing season in Tar is only long enough for one round of harvest, and intercropping of grains and legumes like peas or dal does occur which contributes to soil health. Again the community gathers for the work, celebrating with traditional food and local *arak*. Animals are used for threshing, stamping on the grain over and over in circles on the threshing ground. Traditionally, the grain was separated from the chaff using only the wind, which can be encouraged by whistling, according to villagers. Though this kind of winnowing is still done in Tar, there is also a threshing machine that does the job more quickly.¹² The machine is one of the few modern adaptations to farming that Tar village has acquired.

WINTER

Winter is a time of deep rest for the people of Tar and the land. As one of the women of the village, *Ache* Kunzes, describes the body rhythm of farm work; “In summer we do, in winter we eat.” The stored harvest is eaten through the winter, and people keep away from the fields and the bite of winter mountain air, staying close to their woodstoves and families. People spend time spinning their sheep’s wool and carving pieces of *changma*. Very little work happens during this time, and people are able to recuperate from the labor of the warmer months. Animals are kept and fed throughout the winter on the straw stored on rooftops, and won’t be required to work again until the following springtime. Both human and animal bodies rest for a time, living on the bounty of the land. Food preservation techniques of drying and storing vegetables, apricots, and even cheeses allow people to eat well through the winter.

SEASONAL RHYTHMS AND SUSTAINABILITY

The information I gathered on the seasonal rhythm of farming made me re-evaluate my ideas about “sustainability”, and what that truly means in both an environmental and human context. The way that the *Tarpas* moved throughout the year, farming and then resting, was synchronized to the needs of a human body and the times of year in which the soil produces life and then lies fallow for a season. If “sustainable” agriculture is defined as a way of food production that protects ecology as well as the communities that produce food¹³, then the natural rhythm of farming in Ladakh is a good case study for sustainable practice. The ten days that I spent plowing were intense, often lasting ten to twelve hours. Villagers in Tar, some of them in their late 60s and even 70s, worked throughout the day

¹² Caitlin told me about this machine, and recounted that it was very cumbersome to drag over the terraces from house to house. Also, it made threshing a substantially more dangerous activity when *arak* was involved.

¹³ As defined by the Sustainable Agriculture Initiative Platform (SAI).

and have been doing so every year since they were young. Farming, I quickly found out, is hard on the body. I physically experienced how few hands to participate in farming could make these traditional practices backbreaking, and therefore unsustainable in a human context. Being a part of plowing made it apparent to me that the natural cycle of work and rest was essential to these traditional Ladakhi farming practices.

SUBSISTENCE FARMING AND HEALTH

If a bad crop year ever occurred in recent history, villagers in Tar hesitated to talk about it. Certain Ladakhi food habits might be remnants from times of crop failure, and it doesn't seem unlikely that food shortage was a part of seasonality.¹⁴ My research into Ladakhi dietary habits yielded slightly more insight into whether a season diet fulfills people's general health requirements. One study reported that the traditional Ladakhi subsistence-based diet could be lacking in certain areas, due to "lack of vegetables, fruit, and protein-rich food items."¹⁵ This is based on the lack of availability of fresh produce in the wintertime in areas like Tar. However, increasing numbers of greenhouses in the villages make it so villagers can consume a variety of vegetables more often than seasonal diets allowed for. Meat is rare in the village, and when it is eaten it is only for special occasions like plowing, and there are cultural boundaries to butchering animals in a Buddhist society.¹⁶

It seemed to me that seasonal diets are changing faster than agricultural practices in Tar, since the introduction of sugar, rice, and ration cards. These changes in diet could perhaps be beneficial from a health-perspective in that be in that they might supplement the diet in certain "very mild malnutrition." I feel that perhaps unintended implications, such as sugar-related illness¹⁷, might outweigh the benefits food not naturally found in Tar, not to mention the issues with transportation or production.

¹⁴ It occurred to Jason and Caitlin that maybe the reason for practicing *dzangs* was a result of lean years, when people had limited food to be offering to guests.

¹⁵ Dame and Nüsser, 184.

¹⁶ However, butchering is not unheard of in Tar. Jason told me about a situation where a cow was killed by a snow leopard, and afterwards the villagers utilized the meat.

¹⁷ There was only one instance where I witnessed this in Tar, and I'm unsure if it was diet related.



Photograph by Isabella Pezzulo. Frequent doning happens breaks up the hard labor of plowing for the villagers.



Photograph by Isabella Pezzulo. The dzopa and sholpa pose with the treasured dzo.

COMMUNITY SUPPORTED AGRICULTURE

The most palpable part of being and farming in Tar for me was the incredible sense of community that was created through these farm duties. In plowing season especially, individuals in the village gather in one or two fields to help with the day's work, and to share homemade food, tea, and *chang*. The task of plowing the fields in the village is shared by every villager, with many hands making for lighter work in every way.

DECISION MAKING IN THE COMMUNITY

At 6:30 A.M. sharp, villagers would begin to show up at the household where plowing was to take place. *Tsepos* on their backs, they would begin to haul loads of *lut* from a massive *lut* pile and distribute them throughout the field. Usually, I would show up slightly later, bleary-eyed and annoyed that my body and mind didn't embrace the dawn. "Jule, Etsez! Kamzang?" "Hello, Etsez, how are you?" *Ache* Tashi would yell across the terrace using my Ladakhi name, Etsez Palmo. Perhaps she sensed my tiredness from the previous day—or maybe assumed that a foreigner wouldn't be used to the schedule of a Ladakhi farmer. Gracefully, they would toss the basket up and over one shoulder to dump it, not a fleck of *lut* anywhere but the ground. My *tsepo*-flip was not as refined, and many times an *Abi* would come over *tsk tsking*, and would bat my sweatshirt free of manure that didn't make it to the field.

After an hour or so of early-morning *lut* hauling, or what came to be called "tsepo school" as an inside joke between Jason, Caitlin, and I, the twelve or so villagers who came that morning would sit in a large circle on carpets brought to the field for the first round of tea. As people sipped butter tea, sweet tea, *chang*, and nibbled on hunks of *tagi*, the work teams were formed through a lively discussion. I would watch a conversation unfold about the work that day, and how many people should be split between this field and that field. Of course these conversations all took place in Ladakhi, but I observed how nearly everyone took part save Jason, Caitlin, and I. I could never discern whether arguments or agreements were taking place as a stream of fast-paced Ladakhi flew between the circle of *doning* villagers. After this brief chat, villagers would stand up and continue to carry *lut*, or perhaps depart for the field where they were most needed.

DONING: GATHERING AROUND FOOD

Forty-five minutes later, people would gather in the household whose fields were being plowed. In these ornate rooms decorated with copper pots and hand-painted tables, I would witness the host-guest culture at its height. Service by the host's family was met by the *dzongs* of the guests, or insincere refusals before finally accepting more tea or food. Traditionally, it would be considered somewhat rude to drink your tea down before someone came to refill it. *Ngamphe* and tea would be mixed together to a dry but doughy consistency to form *kholak* in tarnished metal bowls. Chutneys made from dried tomatoes and freshly-grown greenhouse herbs and slightly fermented buttermilk *tara* were some of the many condiments served to all the guests. The atmosphere in these rooms was semi-formal, but with an energetic commotion between all the refilling of teacups, passing of chutney, constant *dzangs* and acquiesces. Community bonds were formed in the sharing of the best food and drink; the act of work and celebration intermingled within the spaces of *doning*.

The host would then bring out a vat of *thukpa* in a pot that could feed an army of *tokse*-bearing warriors. After a bowl (or three) of the homemade noodle soup, a plate of chapatti would be passed around the room with a pat of butter on each as an offering; ceremonial offerings of *chang*, barley, and juniper incense would be brought around the fields to bless the act of plowing and the success of the crop. On the first day of plowing I witnessed offerings brought to a *hlukang*, a white earthen altar where a spirit of the water resides.¹⁸ Ceremonial incense wafted to the heavens as one of the men of the village, *Acho Rigzin*, brought offerings of juniper to the *hlukang* on a small hill above the fields. Tar is a village of Buddhist farmers; ritual and community gathering overlaid the seemingly mundane task of farming in a manner that felt both practical and yet mystical. After breakfast, people arose from their ornate cushions and empty *thukpa* bowls to head to the field.

¹⁸ There is still a bit of confusion on my part as to whether the altar was for a *hlu* or *sadak*, a spirit of the water or earth respectively.



Photograph by Jason Chandler. Breakfast on the first day of plowing in the lower village.



Photograph by Isabella Pezzulo. Ache K.P. leads the team of dzo and Acho Rigzin follows with the shol.

VILLAGERS WHO WORK TOGETHER, STAY TOGETHER

I discovered after a few days of plowing that certain groups of villagers often worked together consistently. Ladakh is known to have groups of families, called *paspuns*, who are often provide mutual support to each other in situations like birth, marriage, death, and so on. The relationships are bound by a sense of belonging and shared purpose in the community.¹⁹ The work groups in Tar might be considered a *paspun* in the context of a bigger village, but because the village is so small the affiliations are much looser.

“We work together because we are friends!” Ache *Kunzes* once said to me when I asked why she and a particular group of women always seemed to be working together. Though *paspuns* are not a formal system in Tar, cooperation among groups of close friends and family are an important aspect of life in the village. I saws *dzo*, farm tools, and loafs of *tagi* being swapped around the village in a gesture of abundant sharing.

The groups of people working together encourage periodic rests throughout the day. The people wielding *tokses* and *rabats* would often rest and work together, never leaving one person in the field to overwork. “Hang loose, dog!” was one of *Ache Tashi*’s favorite English phrases, which was often shouted at me to drop my *tokse* and drink a cup of sweet tea. From a Ladakhi perspective, when there are plenty of people doing the work there is no point in over-exerting oneself. All the work in the village is shared, and so its in everyone’s best interest to rest.

There was perhaps one day of many during plowing in which this was not the case; it was a situation when I worked with a team of villagers whom I hadn’t worked with before and I was recruited as an extra *toksepa*. Immediately, I noticed a different dynamic between villagers and a feeling of tension over the field. I also noticed that I wasn’t being asked to rest, whereas in previous days it had been a frequent occurrence. Caitlin let me in on the fact that this particular family who was plowing had been involved with a divorce, perhaps creating some rifts in their work team. Additionally, the family relied mostly on their three sons to help plow, and so didn’t often help other villagers in exchange for their assistance. Consequently, the group felt short of hands and the pressure to plow all the family’s fields in two days seemed to weigh on the group. Members of the household seemed to work for long periods, disappear into the house for a long time, and didn’t work according to a pace set by other members of the group. At the end of the day the work was finished, but not without a feeling of exhaustion, which was perhaps caused by a lack of cohesiveness in the plowing team. This long day was a tangible experience in the reality of how much community support makes this type of work possible, and even enjoyable. Part of what makes the model of Ladakhi traditional agriculture a sustainable one is its ability to do work in a fulfilling and celebratory way.

¹⁹ Helena Norberg-Hodge, *Ancient Futures*. [Oxford University Press, 1991] 51.



*Photograph by Isabella Pezzulo. These women frequently worked as a group during plowing.
From left to right: Abi Rinchen, Chondol, Ache K.P., Abi Tsewong, Ache Tashi, and Abi Dolkar.*

SMALL IS BEAUTIFUL

As much as I've always viewed ecological systems as the focus for what I considered "sustainable", Tar's demonstration of community cooperation gave sustainability a new dimension for me. In a Western context, it would seem very generous for someone to lend out the entirety of their day and their livestock to help a neighbor. What makes this type of community possible is that the exchange of cash money is rare in Tar; people are constantly helping each other with the expectation of getting help in return, instead of a fistful of rupees. *Ache* Kunzes told me once that difference between Tar and larger villages are that there is less of a reliance on cash money in people's livelihoods. "We don't need to worry about business, about coming and going," *Ache* said to me, thinking about the village she used to live in before marrying into Tar. "In a small village there is less fighting, people drink tea together. In big villages they have to worry about income to pay Nepali workers." With the exception of a few Nepali workers who come to Tar during the harvest, rupees are swapped much less often than help in the fields and home cooked meals in Tar. Having seen the ways in which these agricultural communities seem to function, though sometimes imperfectly, I also began to glimpse challenges that Tar is facing as some of the community structures begin to break down in the face of modernization and the exodus of young people to the cities.

THE CHALLENGES OF FARMING ORGANICALLY IN TAR

I asked several of the older villagers what has changed about farming in Tar since they were children. Mostly, they said, it is not that different than it was 50 years ago. Helena Norberg-Hodge's book *Ancient Futures* backs up this sentiment, describing farming in Ladakh almost exactly as I had witnessed it today. A few subtle differences exist: villagers wear North Face jackets over their traditional woolen *goncha*, maybe. There is likely more trash in the chinks of the rock walls of the terraces than there used to be, and a few households even have a TV and a landline, but the farming practices remain largely the same. However, a few specific occurrences have made a substantial difference in the way farming will continue in the future.

The challenges to traditional farming are complex and interconnected. Today, there are fewer people to care for animals, forcing households to give up large portions of their livestock herds. Fewer animals means less manure, creating a reliance on government-subsidized chemical fertilizer. Thus, a domino effect towards reliance on the government and industrial inputs is taking place in a village where change has been slow in the past fifty years.

WHEN THE YOUTH DISSAPPEAR

The most vivid challenge to traditional farming is the disappearance of the younger generation in Tar. One of the first things I noticed when living in Tar is that seeing someone in the age range of 9-30 years old was somewhat rare. The recent trend is for parents to send students to private schools in Leh, thus leaving the primary and secondary village schools empty of students.²⁰ I didn't delve too deeply into the issue of education in the villages, but the effects of this phenomenon are numerous and directly connected to other issues like the shortage of animal and human manure for fertilizing the fields. Additionally, the absence of young people means fewer people around to bring animals to the high pastures and in the summer, and few people to help out in the many aspects of village life and farm work. The following sections on challenges to the way of life in Tar I believe stem from absence of young people who go to cities either to study or seek out government jobs, which supply a steady source of cash income—something becoming more desirable as Ladakh is gripped by modernization.

WHERE HAS THE LUT GONE?

There is a particular image from one of my last days in Tar that I feel illustrates the lack of human and animal manure, AKA *lut*, in Tar. That morning, I had been helping carry *lut* in a *tsepo* for *Ache* K.P. and her father *Meme* Wangchuck. As I flung my load onto the ground, I noticed that the *lut* barely stretched over one and a half of four fields owned by the family. I looked up from the ground, wondering whether this was the first year that there was such a shortage. I remember watching as *Me-me* threw wheat seeds from a pouch around his waste to be sewn into the field, and *Ache* K.P. walking alongside him; instead sowing black pellets of chemical fertilizer. It was an image testifying that agriculture in Tar was changing. But how? Why is it that the *Tarpas* all of a sudden need to outsource black and white pellets instead of the black gold that used to be so abundant?

²⁰ These schools are staffed by government teachers and have roster. However, they remain empty for most of the year because students are sent elsewhere according to a conversation with Rebecca Norman.



Photograph by Isabella Pezzulo. Villagers get their tsepos filled with lut to distribute in the fields.



Photograph by Isabella Pezzulo. Abi Tsewong using a shovel to channel water across the field.

In my interview with *Me-me* Wangchuk, he reminisced that many households used to have more than 50 goats and sheep. Tar would be a haven for hundreds of sheep and goats during the summer when people from a lower village called Nurla would bring their animals to graze on the higher pastures. People from the village would rotationally bring the animals up into the mountains for ten-day stints, harvesting fodder for a few days at a time²¹. Bringing so many animals up into the mountains can no longer happen, because there are fewer and fewer people. Jason acted as the village shepherd for a time, but in anticipation of his departure in a year people have decided to sell big portions of their herds (Interview with Jason). One villager, Sonam Kunzes (not to be confused with *Ache* Kunzes) has only ten sheep today when she used to have twenty to thirty sheep.²² This decline in the amount of livestock people are able to keep is directly related to how there is not enough *lut* in the village to nourish the crops without the aid of chemical fertilizers.

THE RISE OF CHEMICAL FERTILIZERS

In my interview with *Me-me* Wangchuck, he said that he had only employed chemical fertilizers in the last fifteen to twenty years. He described a time when he was a child that the crop used to be so tall that it would fall over under its own weight, and that the old grain produced a lot more *chang*. The crops today are still adequate, but *Me-me* felt that the quality was worse and that the grain heads are smaller than they used to be. It used to be that villagers “never saw a weed” growing amongst his family’s fields of wheat and barley.

The chemical fertilizers I saw being utilized in Tar are two kinds—small white pellets, which are subsidized by the government, and small black pellets that are more expensive.²³ Apparently, the white ones are incredibly cheap because of the subsidy, while the black ones are more expensive. *Meme* Wangchuck said that when he used the white pellets, the ground got very hard and there were many unknown pests on the crop. Now he uses the black kind, which he gets from Nurla. People’s attitudes toward using the chemical fertilizer are generally one of hesitation. It was a point of shame for Ache K.P. to not have enough *lut* to cover her fields, particularly when it used to be so abundant. Buddhist teachers like H.H. the 37th Drikung Kyabgon Chetsang have preached against the use of chemical fertilizers in favor of organically grown foods and sustainable development in Ladakh²⁴. However, I feel that many villagers find chemical fertilizer unavoidable in situations where there is only *lut* for half of their crops, leaving them no choice but to use chemical products subsidized by the Indian government.

²¹ Interview with Sonam Wangchuck. Interview by the author. April 22 2016.

²² Interview with Sonam Kunzes. Interview by the author. April 18 2016.

²³ I suspect the white kind to high in concentration of urea—the black kind is harder to pin down.

²⁴ Rigyal Rinpoche, “Inauguration of Go Green & Go Organic, Jangthang, Ladhak”, *Drikung Kagyu*. May 7 2014.

GOVERNMENT SUBSIDY IN TAR

Though subtle, the influence of the Indian government is making changes in the diets and farming habits of the *Tarpas*. I found it interesting that during plowing time, the midday meal almost always consisted of rice, dal, vegetable (*spaks*), stir-fried greens (*tsod ma*), and perhaps even a hard-boiled egg or meat. This meal was special for plowing, but hardly consisted of ingredients that were staples in Tar unlike *chutagi* or *thukpa*. I wondered how long rice and dal have been on the lunch plates of the *Tarpas*, and what this addition to their diets represented. It turns out that India in the late 90's experienced surpluses of wheat and rice, as higher spending to disseminate grain subsidies to those considered to be poor farmers.²⁵

I found that likely all of the people in Tar receive government rations which allow them to purchase government-subsidized wheat, rice, sugar, kerosene, and oil²⁶. Though most of the meals I partook in were based on local staples of wheat and barley, I couldn't help but think about how every sip of sweet tea and bite of rice represented government intervention that had not been in the rural village until the late 90's. I don't claim whether ration cards are necessarily a boon or a detriment to the *Tarpas*. However, they represent a relationship with institutionalism and could have effects on the land-use patterns when villagers may choose to plant less wheat because they can get buy it at a subsidized rate. This is one explanation for why barley is favored in villages like Tar, even though it is not due to its unavailability in the market.²⁷ Though not exactly a challenge to traditional agriculture, government subsidy represents a subtle influence on rural villages and might cause their fields to become less reflective on their own diets. This creates a state of food-insecurity for remote areas in Ladakh if for some reason they were cut off from transport infrastructures. Reliance on subsidy also has possible health implications for villagers. Sugar was probably only available in the form of apricots fifty years ago, and today its not uncommon for villagers to consume several cups of sweet tea a day, biscuits with added sugar, etc. The prevalence of illness related to diet is on the rise in Ladakh, and is no longer unheard of in remote villages like Tar.²⁸

²⁵ Shikha Jha, P.V. Srinivasan, and Maurice Landes. "Indian Wheat and Rice Sector Policies and the Implications of Reform" *United States Department of Agriculture*. Economic Research Report Number 41. May 2007.

²⁶ Norman, Rebecca. Interview by the author. April 7 2016.

²⁷ Dame and Nüsser, 186.

²⁸ Hajira Bano Balkhang, "Lifestyle Diseases on the rise in Ladakh", *Reach Ladakh*. September 24 2013.

FEWER HANDS MAKE HEAVIER WORK (FOR WOMEN)

Of the 15 or so households in Tar, I observed that in most only one or two people lived in the large earthen houses which were often built to accommodate five or six people. Of course when I inquired about why this was the case in Tar, I was often told that the young people of the village were often studying in hostels. Some of the men would often go to Leh to work as drivers, or seek government jobs that supplied a cash income for their families back in Tar. Sometimes, those occupied in the cities came back to Tar to help with the plowing and the harvest; sometimes, they did not. Thus, the inhabitants of Tar were much reduced to the *me-mes* and *abis*, as well as a few wives who married into the village and took care of the household and fields when their husbands were away. In my conversation with *Ache* Kunzes, she told me that she is the only one who stays permanently in her house. *Ache* had four brothers and three sisters while she was growing up in the village of Tya, and all of them went to school except for her—someone had to help the family and the village. She married into Tar when she was 23, her husband a woodworker in Leh who comes back only occasionally. One of her daughters, Chondol, studied in a hostel in the town of Khaltse and was only able to come for two days of plowing during a holiday from school. Her other daughter Palmo was the only person my age whom I met in the village before plowing started. Though she had stayed in the village to help out a while, she left home for Leh to find a government job while I was in Tar. *Ache* Kunzes expressed to me that she wants her daughters to study well; lest they become “housewives like her.” Not having a cash income means that you can’t educate your kids, so what choice does she have but to be alone? *Ache* Kunzes’s story is one of perpetual sacrifice leaving her at home to do the hard work of a farmer and householder by herself. Watching women work in the village convinced me that they work the hardest in the number of tasks that they complete in their day-to-day.²⁹ In a group interview with a work group of five women, one of them said, half-jokingly, “Men push the plow, but they don’t do much else!” While this might be a slight exaggeration, it is true in that while the men and children are away, women are left with a lion’s share of the work in the village. This was evident in several ways, but for me it was most distinct in how skillfully women do certain tasks. There were many times I would watch in awe as the women whom I worked with when watering the fields gracefully carved subtle channels into the earth with the edge of a shovel, creating strategic rivulets for saturating every inch of parched earth. I watched grandmothers spread *lut* onto the fields with the effortless sweeping gesture of their shovels that reminded me of dancing as they turned in a circular pattern around the small piles of *lut*.

²⁹ Rebecca Norman made a point that while women seem to complete a large number of daily tasks, men who are present in the village will often take care of more dangerous, though less frequent, jobs.



Photograph by Isabella Pezzulo. Ache Tashi and Ache K.P. carrying baskets of lut.

THE FUTURE OF FARMING IN TAR

Ultimately, no matter how skilled farmers in Tar may be, the burden of taking care of their homes, fields, livestock, and small children is a practice that is not easily sustained by them alone. Without young people in the village, the question arises of who will manage the fields when the aging villagers in 60s and 70s can no longer do so. Uncertainty seemed to loom over the villagers when I asked questions regarding the future of their fields. Sonam Kunzes and her husband Sonam Tsewang hoped that one of their three sons would eventually bring his wife to the village to manage the fields.³⁰

Villagers in Tar have hope that a piece of land given to them by the government, called the *Tang*, will become a place where their children might stay since it is closer to the main highway, allowing them access to modern infrastructure like schools and hospitals. Even with these responses, I felt a sense of ambiguity about the future of farming in Tar. Fields had already been abandoned in the upper part of the village with so few people in Tar to help maintain them. A few older villagers chose to not plow a few of their fields this year, the extra work being too much for them to manage alone. To return to Tar 10 years from now might be to walk onto abandoned terraces, largely overgrown, if the draw to the cities for the younger generation becomes overwhelming for the small village. Nepali workers are sometimes hired to help with farming due to the migration of the youth and men of the village. Inherently, this has both social and economic issues. The workers, who are paid in cash money, have an effect on the social dynamic in the village as well. The effect is something like stress on the villages for having to hire labor for cash money, for which the villagers have very little; thus, the cycle of people going to cities to make an income is perpetuated.³¹

FUTURE IMPLICATIONS: PRESERVING LADAKHI AGRICULTURE

With all my conversations in Tar orbiting around food and agriculture, a few ideas surfaced about how Tar is projected to change with regards to its agricultural systems. I admit that originally the prospects for traditional farming seemed dismal to me as I thought back to the lonely interiors of the massive homes in Tar. I wondered what would bring the younger generation of *Tarpas* back to their village, or if any of the hardworking women of the village felt proud of their livelihoods instead of considering themselves merely income-less householders. I needed to see a candle in the dark for the traditional practices of farming, being well aware of the many challenges.

³⁰ Traditionally, the eldest son inherits the family land.

³¹ This was explained to me by Jason and Caitlin, having worked alongside Nepali workers before during the harvest.

A GENERATION OF YOUNG FARMERS?

I was fortunate enough to capture glimpses of hope emanating from the enthused faces of SECMOL students. One student named Diskit, an extroverted girl with the personality of an actress, stood up in an English conversation exercise to announce that she wanted to be an organic farmer. Another student, Tsetan, told me that he too was interested in farming and seemed proud that a foreigner from the United States would have a similar interest.

These conversations with SECMOL students and my experience in Tar made me believe that there is more to “subsistence” agriculture than scraping by on last year’s carrots and potatoes. People lead joyful and meaningful lives in the fields, and both young and old people may find more meaning behind the plow than behind the wheel of a taxi in Leh. Many of the villagers seem to have their eyes set on the *Tang* as a place where the village may evolve with its location near the highway. Potentially, the young people would return and be the stewards of this “new village” and uphold some of their family’s traditions around farming, whilst having access to education and medical care—that’s at least what the villagers hope. There is hope that the development of this piece of government land could fix Tar’s population problem.

“What would bring young people back to Tar?”, I offered the question to *Me-me* Wangchuck during our interview, having considered all the difficulties Tar faces without young people around to help. He thought for a moment, and then said that Tar needs a good school to keep young people in the village. It may not solve all of Tar’s problems, but access to education is a key component to keeping the youth in the village, and perhaps to keeping Ladakhi agriculture alive. A component of learning in the village might include the ecological and social importance of Ladakhi farming. Raising up the status of farmers as an important and celebrated profession might allow young people to be proud of their background and heritage. There is great possibility in initiatives to engage young people in farming that is innovative, combining traditional practices and sustainable invention. One of the staff at SECMOL, Kunchok Norgay, discussed with me plans for a multi-session workshop on sustainable agriculture that he would like to run for Ladakhi farmers.³² Youth being a part of these workshops and getting exposed to farming as a proud and inventive profession could create the flame for a movement of young Ladakhi farmers.

³² Norgay, Kunchok. Interview by the author. April 25 2016.



Photograph by Isabella Pezzulo. Jason leading a dzo down to the lower village.

CONCLUSION

The experience of being in Tar was exceedingly rich for me, having gleaned so much about traditional agriculture, food, and community there. With industrial agriculture being the norm back in the States, and having only done a good amount of hobby gardening myself, it was incredibly valuable to be able to experience a system of agriculture that is pretty much a closed loop, without external inputs or outputs. Cycles of nourishment, for people and the earth, are completely interconnected without the waste streams that are the trademarks of our global industrial food system. The way of life in Tar is one of incredible resourcefulness and adaption to the landscape. If there's something I've come away with from living and working in Tar, it's a new understanding of sustainability based on a sense of community and self-care as well holistic treatment of the soil. However, being in this place allowed me to view it in a moment of transition, where this way of life is on the verge of being altered by the disappearance of youth, the introduction of chemical fertilizers, and government subsidies. In the future, the effects of these external forces may put a village such as Tar in a place of insecurity as opposed to self-reliance.³³ There is much uncertainty that the villagers feel about the implications of these various factors on the future of Tar. My interactions with Caitlin and Jason, as well as SECMOL students has brought me hope for the continuation of traditional farming and the farming community in Ladakh. A step in the right direction could be access to more education on the importance of farming to Ladakhi culture. I also feel that a paradigm shift about the status of farmers is needed, and can take place in the context of innovative groups like SECMOL to introduce the younger generation to the ways in which their farming heritage is culturally and ecologically significant.

³³ Vladimiro Pelliciardi. "From self-sufficiency to dependence on imported food-grain in Leh District (Ladakh, Indian Trans-Himalaya)". *European Journal of Sustainable Development*, 2013. 109-122.

RECOMMENDATIONS FOR FUTURE RESEARCH

The village of Tar and its surroundings are a place ripe for research, and I recommend that anyone interested in traditional food systems and farming should visit there. One topic that I did not get to study in depth, but would have liked to, is related to health beliefs. (One does not sit on the bare ground without getting scolded by a Ladakhi grandmother that they will catch a cold.) There is also a growing local foods movement in Leh, mostly catering to tourists. It would be an interesting project to research how the “farm-to-table” movement was created and is sustained by tourism in Ladakh as another side to local food systems and sustainable development.

METHODOLOGY

My approach for going about this research was simple; I joined in the work of springtime plowing for the thirteen days I stayed in Tar. Besides the casual conversations I would have in the fields with villagers, I would also conduct a few sit-down interviews with either Caitlin or Jason as my translator. Also contributing vast amounts to my research were my conversations with Caitlin and Jason, as well as with Becky Norman of SECMOL. I used SECMOL as a jumping off point for finding a village to research in, where Becky directed me towards Tar as a possible research site. Observations regarding farm work and village life were also significant to my understanding of the topic of traditional Ladakhi agriculture.



Photograph by Isabella Pezzulo. Caitlin (right) and I in the fields as first light hits the chuli trees.

GLOSSARY OF LADAKHI PHRASES

Abi/me-me- Grandmother/grandfather.

Ache/acho- Older sister/older brother.

Arak- local hard liquor.

Cha/Solja- word for tea/honorific for tea

Changma- “tree”, more specifically willow, which grows abundantly in Tar.

Chang- a fermented barley “beer” popular at plowing time.

Chuli- apricot.

Chutagi- “water bread”, a traditional Ladakhi dish made from wheat noodles folded into a characteristic shape.

Don- The honorific word for to eat and/or drink.

Dzangs- a custom of refusing food or drink once or twice before accepting. An insincere refusal typical in *doning* situations.

Dzo- a cow/yak hybrid used for plowing and carrying loads in Tar.

Kholak- a mixture of ngamphe and tea to make a staple food with a dough-like consistency.

Lut- Manure from both people and animals that is collected as fertilizer for farming.

Ngamphe- roasted barley flour and Ladakhi staple food.

Nyabtug- A yellow turnip grown in Tar.

Ol- alfalfa.

Paspun- a formal system of household groupings in Ladakhi society to help each other in times of birth, marriage, or death.

Rabat- a y-shaped, toothless rake for smoothing the soil after it has been plowed.

Shol- a vertical part of the plow which is directed by the *sholpa* to keep the plow blade in the ground.

Skotse- a wild-growing and cultivated herb resembling chives. It is often collected in the mountains and used in Ladakhi cooking.

Tagi- “bread”, usually made from whole-wheat flour and baked in woodstoves.

Tarpa- A person who lives in Tar.

Thukpa- Noodle soup; usually made with homemade noodles.

Tokse- a small pick used for breaking up clods of soil and furrows created by the plow.

Toma- an edible weed.

Tsepo- “basket”. Used for carrying loads of *lut*, rocks, or earth on one’s back.

Yuras- Intricate system of canals which bring glacial melt water to irrigate the field.

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