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**DRY WINTERS, DRY SUMMERS:**
**WATER SHORTAGES IN ZANGSKAR**

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"ENTIRE KARGIL DISTRICT TO GET WATER WITHIN TWO YEARS", an eye catching headline from Autumn 2000's Ladakh Studies. Taken from the Daily Excelsior, the article details some of the drinking water and irrigation projects scheduled for Kargil District until the close of work in 2002. Impressively, some of the reported projects are completed, some are currently underway and some are scheduled for the imminent future. None however, appear to address the very immediate water shortages that are currently plaguing Zangskar.

Like much of Ladakh, Zangskar relies upon winter precipitation, in the form of snow, to replenish the snowfield and glacial reservoirs that supply villages with irrigation water throughout each summer. The majority of Zangskari villages are situated such that they intercept and utilize melt water carried in tributary streams between snowfield or glacier and the major rivers that flow through this landscape. Confined to the bottoms of wide glacial valleys, or deep and narrow gorges, the major rivers draining Zangskar are often too low to be of any use to gravity fed irrigation systems. The lack of viable arable land on perennially shifting floodplains and the difficulties of pumping water up from river gorges have restricted the exploitation of Zangskar's most abundant water sources.

High above Zangskar's rivers, villages are often at the mercy of winter skies for the snowfall that provides water security every summer. For villages dependant upon seasonal snowfields, winter snowfall is a critical indicator of the following summer’s irrigation supply. Seasonal shortages in snow translate directly into summertime drought in such villages. In other villages, permanent snowfields or glaciers provide more water reserves and a temporary decrease in winter snowfall may have little or no immediate effect in the supply of irrigation water. For settlements in central Zangskar which are largely fed by glacial melt water, like Padum, Pipiting, and Sani, many years of drier winters may be required before any reduction in water availability is observed on a village level. By contrast there are a handful of villages that experience much greater water security. The majority of fields in Yulang, for instance, are scarcely affected by a slight decrease in winter snowfall. Situated on the floodplains of the mighty Doda River, Yulang has plentiful irrigation water even in a summer where other villages suffer drought.

In the winter of 1999-2000 snowfall shortages led to a drought across much of Ladakh and Zangskar. This lack of snowfall directly precipitated a painful drought in the summer of 2000 in many Zangskari villages that have little or no access to glacial melt water. In lower Zangskar (Sham) where water is scarce every year, Zangla villages took the drastic measure of leaving one third of their fields fallow when, in early spring, it became clear that irrigation water would not be sufficient to irrigate the entire village that summer. Across the valley from Zangla, in Pishu, villagers only managed to irrigate their crops three or four times before their streambed dried up completely. Pishu and the nearby Kumig village, which lies up the valley, share a similar shortage of water each summer, as their irrigation water dwindles or dries up shortly before the fall harvest.

Other Zangskari villages usually have sufficient water to allow for a final watering just before harvest (to soften the soil) and occasionally even after the harvest is complete (before the autumn ploughing or *stan lag*). This year, however, even more severe shortages than usual forced Kumig villagers to also employ the drought procedure of leaving more than one third of the village fields fallow. Across the valley from Kumig, the village of Sendo also faced devastating drought in the summer of 2000. More than a third of all fields in Sendo (26 out of 66 fields) were left fallow due to lack of water in the village streambed. In Sendo's case, the fallow fields lay mostly in the half of the village which lies slightly further from the streambed and reservoir, where only one of the 19 plots was cultivated and the other 18 plots lay barren and desiccated.

In most of the villages studied, the scarcity of available irrigation water was compounded by some inefficiencies in the channels or pipes which routed water to the fields. In Sendo, as well as Pishu and Zangla, the villagers had attempted to increase the efficiency of the channels—which allow a great deal of seepage—by the use of metal and/or plastic pipes. In each case, these pipes were not fitted together properly due to a lack of couplings, tools, or other methods of joining the pipes together. In Zangla, the pipes were jury rigged together with whatever stray material was available. Pieces of plastic, jute, old clothes, and twine were wrapped tightly around the two pieces of pipe which lay mouth to mouth, as valuable water seeped slowly through fissures in the material. Even such stop-gap measures were unable to supply sufficient water to distant located fields in Zangla and Sendo. In Sendo, large metal pipes lay rusting and abandoned in the dry streambed due to a lack of couplings and the required tools to fit the unwieldy metal pipes together. In the meantime, the villagers repeated requests to the P.W.D. Department for tools, couplings, or assistance in digging out their reservoir—which had been filled with silt after a flash flood the previous year—were largely ignored. Large green patches below the reservoir and irrigation channels were telltale signs of seepage, which further compromised the already insufficient supplies of water flowing in the irrigation channel each day.

We spent some time discussing the drought with villagers in Kumig, Zangla, Sendo, and Pishu. While the number of fields each house in Kumig had cultivated varied, the poorest subsidiary houses (khung chung) only cultivated one or even part of a field. Meme Gelag an elderly informant from Kumig noted that some houses only cultivated a few 'rooms' (nang) of a single field—a room being a subdivision of the field created by the irrigation process ranging from 1-5 square yards. He noted that some optimistic villagers had plowed additional fields in early spring, but then later abandoned them after the first watering, when it became clear that additional melt water was not forthcoming. Recalling how the streambed was reduced to a trickle this year in late spring when snowmelt ordinarily might swell the streambed to burst its banks, Meme Gelag soberly added that most households in Kumig would face food and fodder shortages the following winter. He added that government officials had come around to document the drought but despaired of seeing much of the promised relief.

The villagers of both Kumig and Zangla reported that a Land Revenue officer (parwar) had visited earlier that summer and had taken notes on the number of fallow fields attached to each household. Villagers were told that these reports would be submitted to the District Commissioner in Kargil, who would authorize the ration stores in Padum and Zangla to give each household a certain number of free rations the
subsequent winter. While villagers in Zangla felt fairly confident of receiving government assistance due to the fact that one of their own—the King of Zangla—was highly placed in the Ladakhi administration as a District official, Kumig villagers were far less confident. Informants noted wryly that even if the free rations were sanctioned, they would surely be "eaten" by corrupt officials at the Padum ration depot and the Revenue office. Sendo villagers, for their part, told a story of the visit of a Block Development Officer (B.D.O.), who was none other than the King of Zangla. The Sendo villagers who were surprised by the visit of an important bureaucrat but also hopeful as he was one of their own, a Zangskari, pressed the king for immediate assistance to their irrigation system, including concrete to line their reservoirs and, if possible, the major irrigation channels. While Sendo villagers plied the king with more local beer and brandy (a ruk) than he could consume, he appeared to be plotting his own development strategy for Sendo. Ignoring their requests, he urged the villagers to initiate a government plantation and plant poplar saplings instead. The villagers have yet to receive an ounce of assistance for their leaking irrigation channels, silted reservoir, and ill-fitting steel pipes, while the king appears to have mastered the system by ascending even higher in the ranks of the state bureaucracy.

In contrast to villages like Pishu, Zangla and Sendo which rely heavily on snowmelt from narrow tributary streams, the village of Yulang, which lies several hundred yards below Sendo, next to the floodplain of the Doda River, experienced little water shortage in the summer of 2000. Due to its proximity to the Doda River, Yulang was one of the few villages in all of Zangskar in which most villagers experienced almost no inconvenience from the summer's drought. Only 1% (4 out of 323 fields) of the fields surveyed in Yulang were left fallow, most of them located in a part of Yulang village called Rihan which lies uphill from Yulang's primary or 'mother' leat (ma yur) and thus receives its irrigation water from neighboring Karsha village. This section of Yulang receives no water from the Yulang leat and considerably less water than most of the Karsha households due to its distance from the Karsha streambed and its unfortunate position at the tail end of the irrigation network.

Water shortages on the scale observed in 2000 are unusual although not unheard of in Ladakh and Zangskar. Many of the elder informants noted that the drought last summer was more of an exception than the norm. When asked, such elder informants could remember only one or two occasions in their lifetime when they had experienced droughts of similar severity. Meme Gelag, who is over 70, and the Karsha Lonpo, who is 65, could recall one other similarly severe drought in their lifetime. Both the Karsha Lonpo and Meme Gelag spoke of a time shortly before Partition in 1947 when a two-year drought struck all of Zangskar with devastating effects. Because the poorer households consumed their grain stores in the first winter after the drought, they resorted to begging for food from wealthier houses and the monastery in the second year. The Lonpo of Karsha added that a few people died during this period from food shortages. He also reported that most sharecropping households avoided paying grain taxes to the monastery on their leased fields by substituting money for grain.

Kumig appears to have been experiencing water shortages already for two decades. As Henry Osmaston notes, "even in the 1980's, Kumig's water supply was marginal; I remember they were running short just before harvest" (personal communication, 8/3/01). Yeshe Angdus, a 63 year old villager from Sendo—which has an excellent view of the snowfields above Kumig—spoke of the decline of the Kumig snowfields that he had observed in his life time. Suspended high above the village and tantalizingly close to the larger permanent snowfield that drains to Stongde, the Kumig snowfields have, in recent years, declined beyond all recognition. The decreasing snowfields have placed increasing emphasis on the methods of channeling water from the entire catchment area below the snowfields to the village far below. However, large areas of porous scree slopes between the snowfield and the village have hampered any attempts to engineer permanent irrigation channels between the Kumig snowfield and the fields. Meme Gelag described a communal project to improve the village's irrigation prospects long ago, when he and some other villagers walked up the mountain slopes behind the village until they were just below the snowfields. Their feeble attempts to channel the water more efficiently through the scree slopes were foiled for a number of reasons. Although the men dug a channel that was so deep that you could stand up in it and not see out, the water still seeped out through the scree rather than flowing in the channel. Additionally, the cold was so intense that they all nearly froze to death and had to keep coming down to avoid frostbite. The cold winds caused any water that did pool in the channel to freeze. Since the water only seemed to flow when mixed with dirt, it was impossible to create sufficient flow in the channel. When the older generation asked the young men of Kumig to return to the snowfields this year to dig out the channel, the young men refused. Even when the elders reminded them that they now had down coats, kerosene stoves, and sleeping bags—none of which were available back when Meme Gelag performed a similar feat—the youths refused, whether in fear or despair it is hard to tell. Meme Gelag added that he would rather go down the chadar in the thin sweatshirt he was wearing that day than go back up to the Kumig snowfields. At least on the chadar there is plentiful driftwood to make a huge fire at night for warmth, while there is not a speck of wood or dung to be found near the Kumig snowfields he recalled.

For Kumig, water shortage in the village has become a chronic and desperate problem. As a result of increasing aridity and more recent drought, many Kumig villagers have begun to seriously consider the logistics of moving the entire village down several hundred feet to the Zangskar River. Meme Gelag noted quite poignantly that when he walks through the village of Kumig these days, "I feel like crying." Such words—coming from a man who has seen Partition, past droughts, harsh taxation under the Kashmiri Darbar, and other hardships—state the stark reality which has made the unthinkable not merely possible but probable. Kumig village, which is one of the oldest villages in Zangskar, if one is to believe the 16th century Zangskari chronicle known as the Bo Yig, may be forced from a fortress like perch it has held for over a thousand years to the wide and shifting floodplains of the Zangskar River far below. If so, it may result in a rare case of village relocation, similar to the relocation of Shagar Yogma after an avalanche in the mid 1980s. To this end, the villagers have begun the construction of new fields in the shifting sands of the Zangskar River floodplain which are fed by a new irrigation channel that begins just downstream from the Pipting bridge. Meme Gelag described how villagers built fields on the floodplain in 1999 and continued the planned shift by digging the foundations for new houses and working on a collective irrigation channel in the summer of 2000. After the decision to shift the village cultivation down to the floodplain was made jointly, every household was conscripted to send one able bodied worker to dig the irrigation channel for almost 45 consecutive days. While the irrigation channel was
RESEARCH AND INTERNATIONAL AID: A POSSIBLE MEETING
The case of Nomad RSI in Ladakh

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Development studies and anthropology have shown long ago that development projects do not succeed through economical forces or technology transfers alone. International development projects face obstacles, most often unwanted and badly identified, between development workers and targeted populations. The ‘cultural obstacles’, which predominate in the discourse of international development workers, are coming as much from their own culture as from the ‘receiving culture’. Therefore, development projects should be conducted taking into consideration the particularities of target groups, regarding their perceptions of health and disease, their social organisation and their cultural disposition to receive and integrate the proposed project. Nevertheless, this issue is often left unconsidered in ‘classical’ international aid programmes and treated superficially, despite the promising descriptions included in theories of ‘integrated development’, ‘grass roots level’ and ‘bottom-up’ approaches, or in the most famous ‘cultural development’ slogan promoted on the international scene by UNESCO during the Seventies. It is clear that answers to these problems fall within the purview of social science specialists and that the expatriate and local staff is generally not educated address these issues; nor can grass roots level research strategies, such as Participatory Action Research, provide a complete understanding of the complexity of social logic. It was a logical move, therefore, to launch an associative initiative at the margin of international organisations approaches, trying to involve research fellows and development workers within a similar structure.

This article discusses the case of Nomad RSI, a French non-governmental organisation dedicated to research and international aid applied to traditional medicines. The organisation mainly operates in developing countries, focusing on ethnic minorities and remote areas. Nomad RSI is also conducting consultancies for international organisations and research centres. It is important to clarify that Nomad RSI does not pretend to have found the solution for international aid, but it certainly contributes to development through a different kind of response building on local particularities. This approach is unique in the field of international solidarity. Nomad’s approach also raises additional questions stimulating further reflection, for example the problem of distanciation from one’s object of research, the dialectics between social activist ideology and the demands for objectivity of research, the implementation of research results, etc. This article hopes to open a discussion while introducing the organisation, its theoretical foundations and its practical engagements.

From application to involvement: a research paradigm

Development is a major factor of social change. It is therefore necessary to clearly understand the nature of the actual social change in order to match the activities with the developmental dynamics of local populations. Changes appearing as a consequence of developmental activities should be understood according to traditional values (i.e.