



Nature of Crises

Tashi Morup



- Over the centuries the Indus has been the life line for several civilizations. In Ladakh most of the villages have come up on the north bank along the tributaries that are fed by the glacial melt into the Indus. It is now these very villages along the north bank of the Indus belt in Ladakh that have been affected.



Settlements around Indus Threatened

With rise in temperatures, glaciers receding, increase in rainfall and tributaries changing course settlements are now being threatened. In the past, changing course of the Indus has destroyed civilizations – flattening of Tashi Ghatsal is perhaps reminiscent of destruction of Harappa and Mohenjodharo. The entire township lies buried under mud.

History of Flood in Ladakh

Around 1907 it is believed that present Leh bazaar was filled with mud that rose to its current level. 1930 Chong Khumdan Glacial lake burst.

1971 witnessed massive destruction due to flood in Nyemo village, following which Save the Children UK was first set up in Leh.

After nearly 30 years in 1999 Leh valley caught unaware of a flood that destroyed fields and houses and killed many animals.



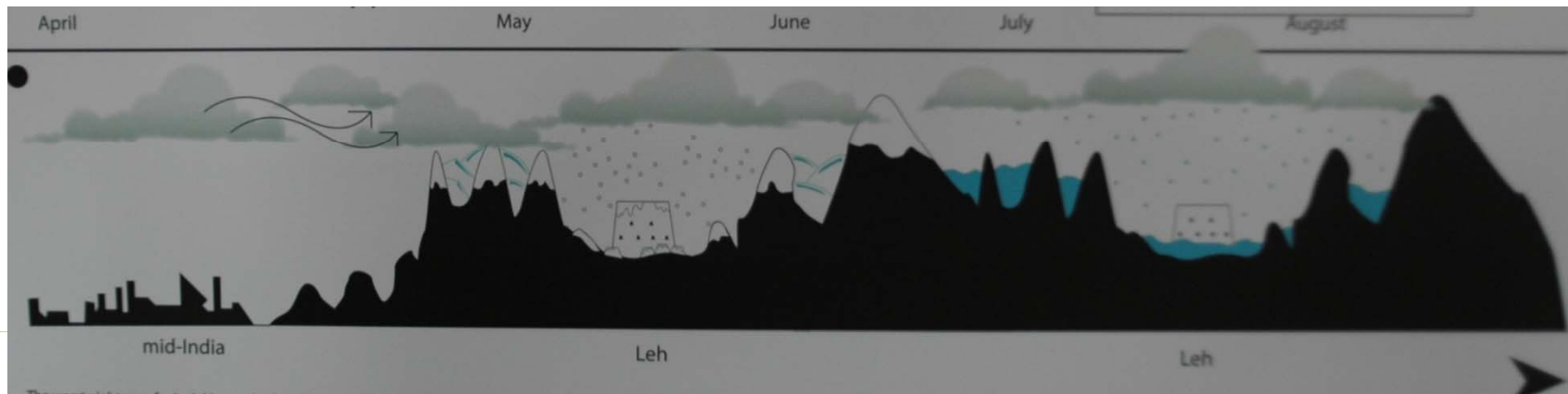
2006 floods in Phyang and Leh valleys

Floods in Leh and Phyang were due to the bursting of recessional glacial lakes.

An important factor that has not been given its due importance is the melting of the mountain permafrost with the increase in global temperature. This is not only destabilizing the mountain slopes but also contributing to increase of melt water flow into glacial lakes: Dr. Joseph Gergan Geologist



Flash floods and cloudburst in 2010



- Increased temperature and hot summers in the plains led to increased evaporation and subsequent cloud formation in the hills. This led to increased duration of snowfall (May) in Ladakh. Winter prolonged.
- Bright sunshine in June and July led to melting of snow and high relative humidity (72%) against 50% of previous years. Since snow absorbed latent heat also, monthly max and min temp remained low leading to dense low clouds in the valley. Clouds further condensed trying to cross the glaciers and could not retain the water droplets and burst. DIHAR

More Frequent and Vulnerable areas developed leading to greater damage

- Ladakh has witnessed floods in the past, what has changed is the frequency and significantly vulnerable areas are now developed and populated leading to greater damage
- A remnant of an old stream bed lie on the mountain ridge above Shagsha-liung, clearly seen on google map, going west towards Leh and east towards Sabu and Choglamsar provides evidence of water flow in the past.

Nidder Flood also GLOF

- Nidder flood on October 8, 2010 was again a GLOF
- Last time it was around 60 years back Nidder witnessed flood because of lake burst. There are two lakes by names Longdol and Chorog in different sub-valleys. Chorog is the name for three lakes, formed one after another at different levels. Longdol is in Longma valley (caragana valley), which is one big glacial lake that got breached by breaking of ice block. Jigmet Stobdan 26, village representative, said, it was unusually hot that day when flood hit. Stobdan had heard from his elders that their ancestors often used to manually breach the glacial lake to release the water rising in the lake in controlled manner, which is no more practiced.









Loss of life and property

- 257 declared dead and 27 still missing (from different states).
- 1447 houses damaged either fully or partially.
- 15000 acres of land both cultivable and non cultivable land (plantations) covered under debris/washed away Gyurja - TISS. Govt. figure tells 660 hectares.
- 15 crore loss to hospital including CT Scan
- Water lifting pump for the town washed away
- govt. offices, schools, electricity, BSNL

71 villages affected of 112, 14 worst

- Stanzin Dorjey, 48, of Taru village, could not reap any yield from 1.4 hectares land following cloudburst and flashfloods on August 6. He used to earn 1 lakh by growing wheat, barley, pulses and peas; now he is forced to work as labourer. Similar is the story of 74 households in Taru and 14 worst affected villages. Sonam Wangchuk Tia scared to live in the area and want alternative home.

Land Reclamation Efforts by LAHDC

- 16.5 crores demanded for land reclamation/clearance of debris from agricultural land .
- 279.4 hectares out of 660 hectares reclaimed and made cultivable by June end.
- 135 hectares inaccessible by machines. MGNREGA scheme to be dovetailed with support from NDRF and SDRF.

Restoration of canals

- Permanent restoration of irrigation channels completed at 179 sites ahead of sowing season to irrigate reclaimed and undamaged lands.
- Meager compensation for land, plantations washed away . Thupstan Chewang, Taru, sells 3000 saplings in a season making some 60000 rupees. Only three trees left now.
- 71 of 112 revenue villages affected. - *District Administration.*

Soil Fertility and Crop Status

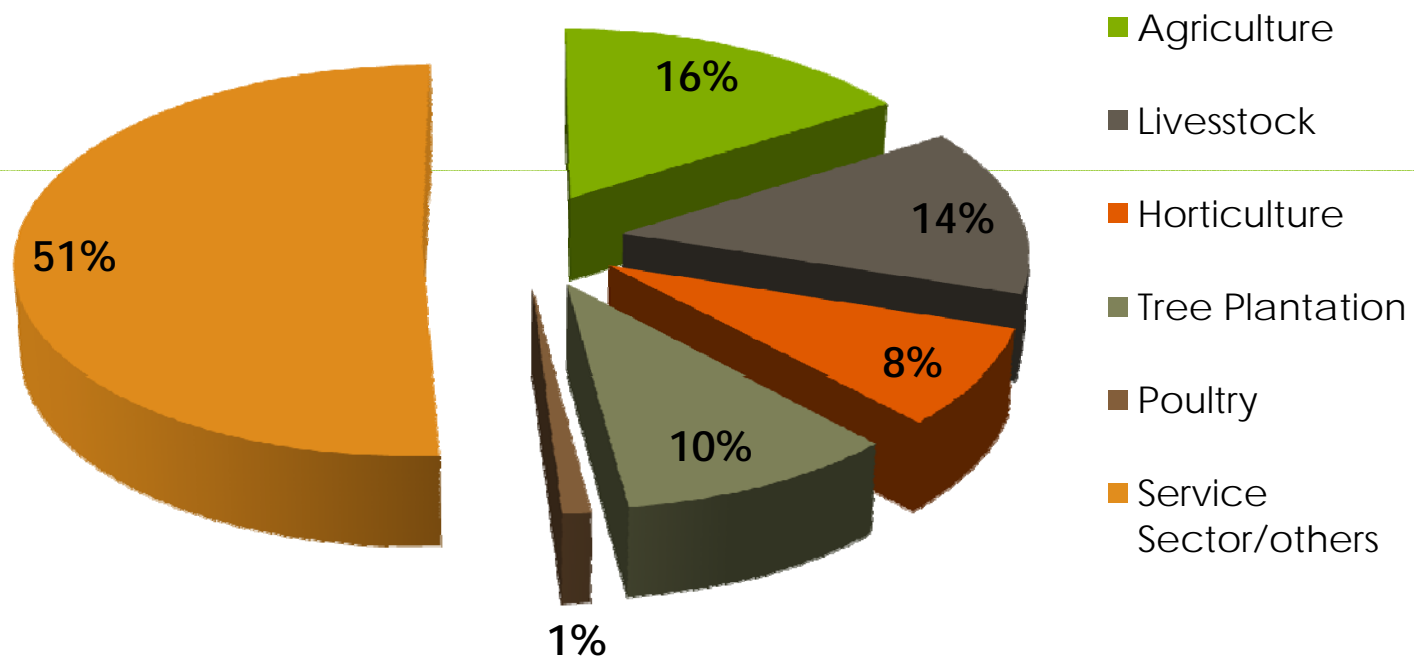
- Tests by DIHAR showed negative results
- Igu is a good example
- Taru remaining fields got better water.
- In Sabu farmers facing problems in channelizing water to fields. They say it would take 30 years to restore how it was before flood.

Ladakh Vision – 2025 & LAHDC-TATA Micro Level Planning Process: 'Gyurja' – TISS

A vision document for the first time was produced in 2005 involving local intelligentsia and experts and presented.

TATA came forward to support through their TISS proposing to do Micro Level Planning. Some of the findings are interesting to take note of especially people's dependence on Agriculture in view of other livelihood options.

Sectors of Economical Dependence



Dependence on Agriculture

(5 Year Perspective Plan (2010- 15) under NREGA and Micro Level Plan (MLP) for Leh district),

- Some 77% as per census 2001 lives in villages and depend primarily on agriculture and livestock rearing for livelihoods.
- Barley and wheat are the traditional crops, however, in recent past tree plantation, vegetables, alfa-alfa and dairy (jersey breed) are on rise.
- Contribution of agriculture to the household economy has gradually declined as alternative livelihood means like government service (including army), labour work and tourism related businesses are growing.

Livelihood Options for people of Leh

- Livelihood option for people of Leh district, in order of importance, are: (a) agriculture (b) livestock (c) government service and labour, tree plantation (e) horticulture, business (f) tourism, handicraft (g) skilled labour and (h) private job, 'other' includes vegetable cultivation, seabuckthorn, alfa-alfa, poultry and army – most of which form part of Agriculture, Business and Labour, but some Halqa Panchayats have preferred to mention them separately (this seems to indicate their growing importance). 4. Although the village economy in Leh District is predominantly 'Land Based', it seems to have fairly diversified into other areas (together, sectors like Govt. Job, Labour, Tourism, Handicraft, Skilled Labour and private Jobs account for a little above 50% of Household income). This means that, on an average, 'land based activities' contribute only around 50% to the household.

CSSs playing crucial role

- Some CSSs playing a important role in helping villages get basic facilities. PMGSY (roads), IAY (rural housing), ARWSP (drinking water), SSA (education), NRHM (rural health care), TSP (sanitation), PMRY (employment), WDP/Haryali, NAP (afforestation), Swajaldhara, RGGVY (rural electrification).
- In addition, sources like BADP (border villages), AIBP, MSP (minorities) and now MGNREGA provide new opportunities to enhance progress. Whereas institutions like DIHAR and SKUAST are helping with their R&D work, various CSOs are supplementing the efforts of sectoral agencies in various fields and helping to make Ladakhi villages a better place to live (Source: Economic review of Leh District, 2008-09).

Panchayati Raj: Promises and Lies

- J&K promulgated PR Act in 1989 and elections held in 2001.
- VMCs replaced the system in 2006
- 2011 elections held again with Govt. more determined to have three tier system to be at par with 73rd Amendment.

Humidity is Rising

- Another Concern is flash floods could be regular due to increased levels of humidity.
- "Frequency and intensity of torrential rains have been increasing in Leh. Cloudbursts mainly occur in July or August and since the valley has loose soil, a 30 mm rain can cause havoc," Sonam Lotus, a meteorologist with the Indian Meteorological Department said.