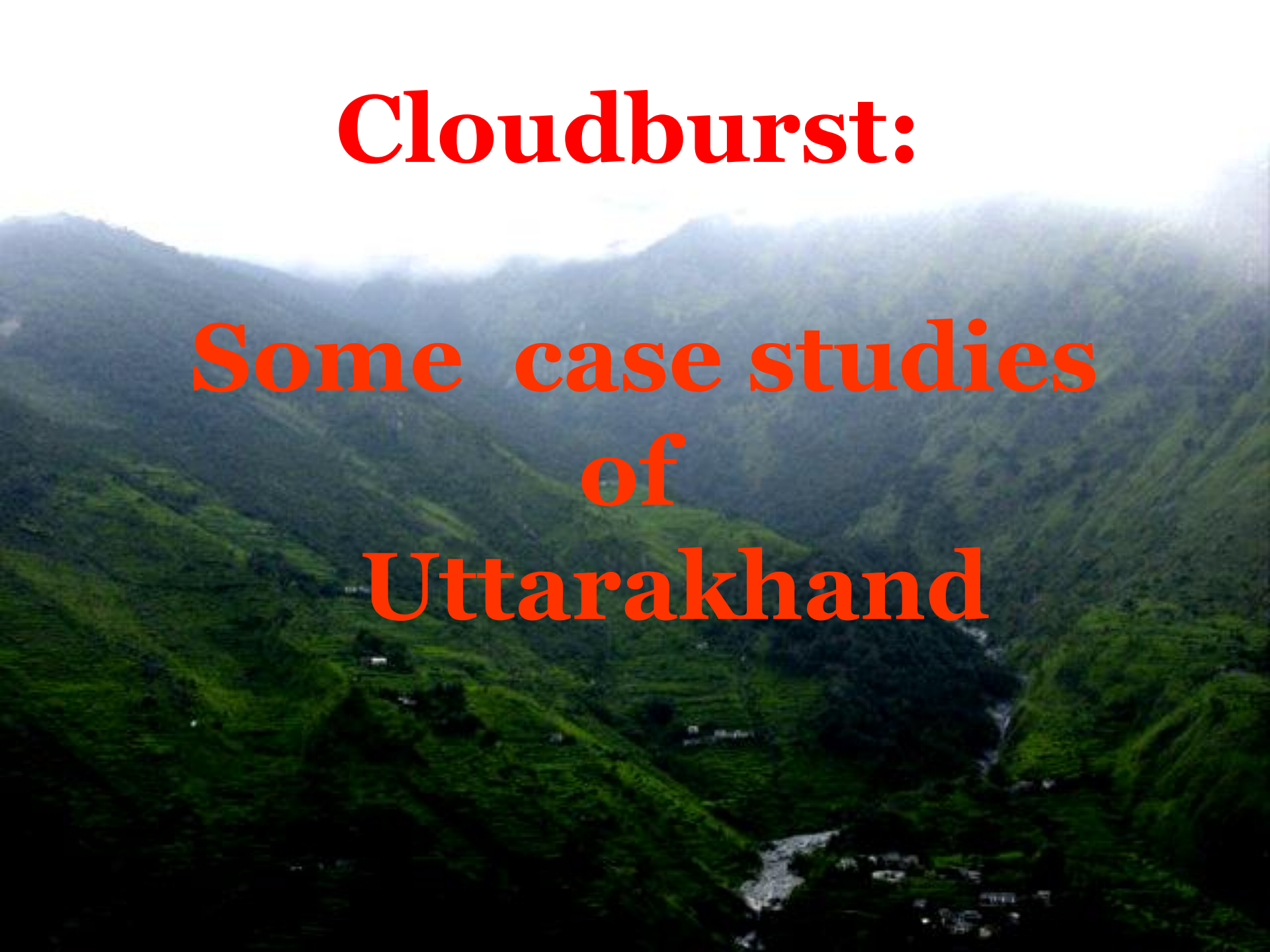


Cloudburst:

**Some case studies
of
Uttarakhand**





What is a cloudburst?



What is cloud burst? A **cloudburst** is sudden copious rainfall. It is a sudden aggressive rainstorm falling for a short period of time limited to a small geographical area. Meteorologists say the rain from a **cloudburst** is usually of the shower type with a fall rate equal to or greater than 100 mm (4.94 inches) per hour.

**KHET GAON, DHARCHULA PITHORAGARH – A
COUDBURST**

Tragedy



12 July 2002

4:15 – 4:45 am



Chief Advisor

Shri Rakesh Sharma, Director DMC, UAoA, Nainital

Chief Coordinator

Dr. R.K. Pande, Executive Director, DMMC

Team Members

Dr. Pradeep Goswami

Dr. K.N. Pande

Dr. Navneet Gupta

Dr. Om Prakash

Acknowledgements

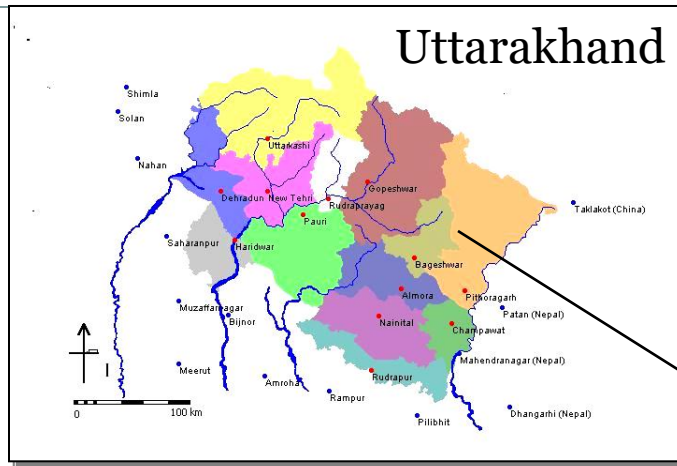
**Shri Rajeev Chand Joshi, District
Magistrate, Pithoragarh**

**Shri S.K. Aggarwal, Chief Engg.,NHPC,
Tapovan**

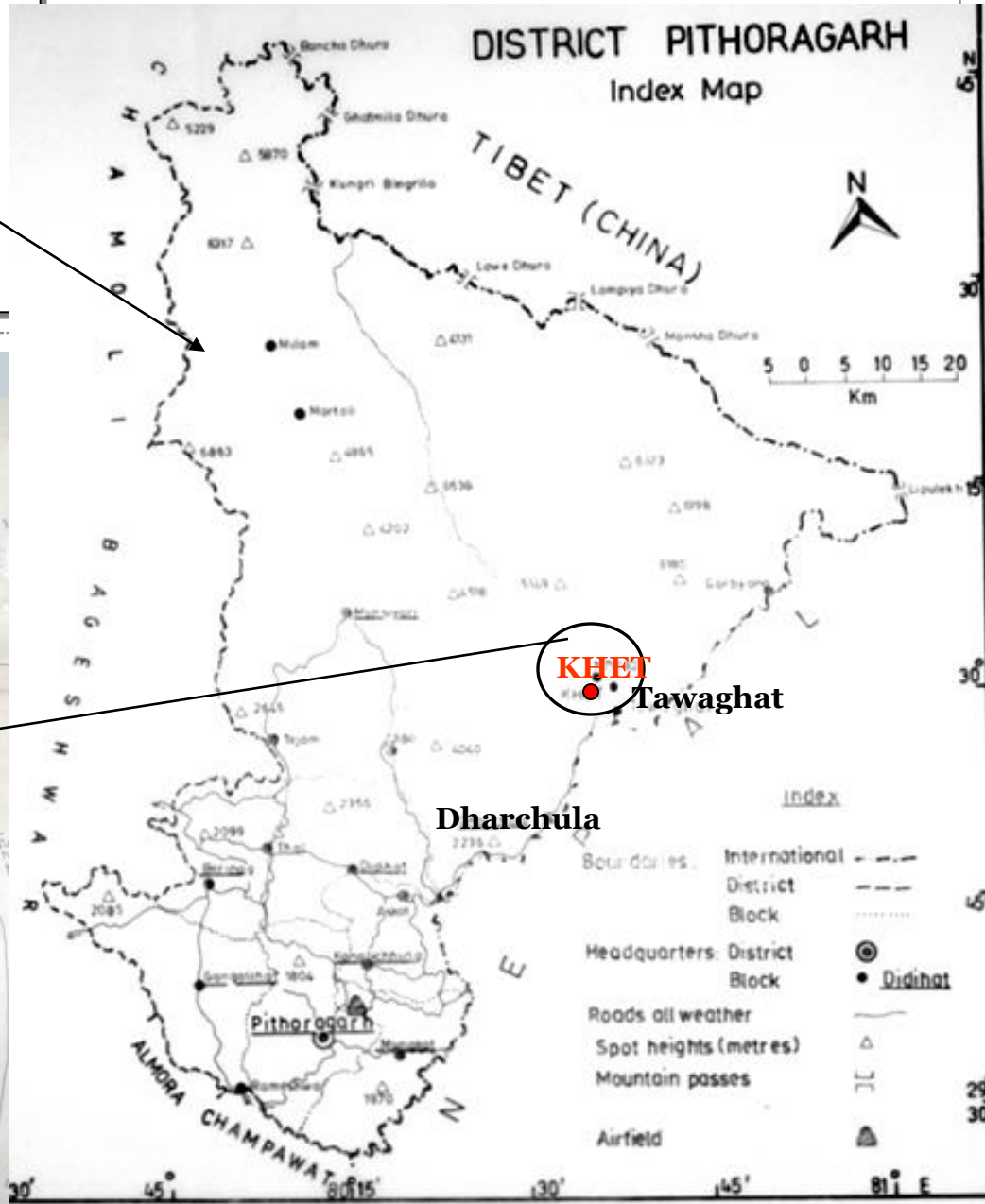
**Shri B.D. Patni, Mgr.(Engg.
Geology),NHPC, Tapovan**

**Shri R.S. Rana- Himalayan Jan Kalyan
Samiti, Bageshwar**

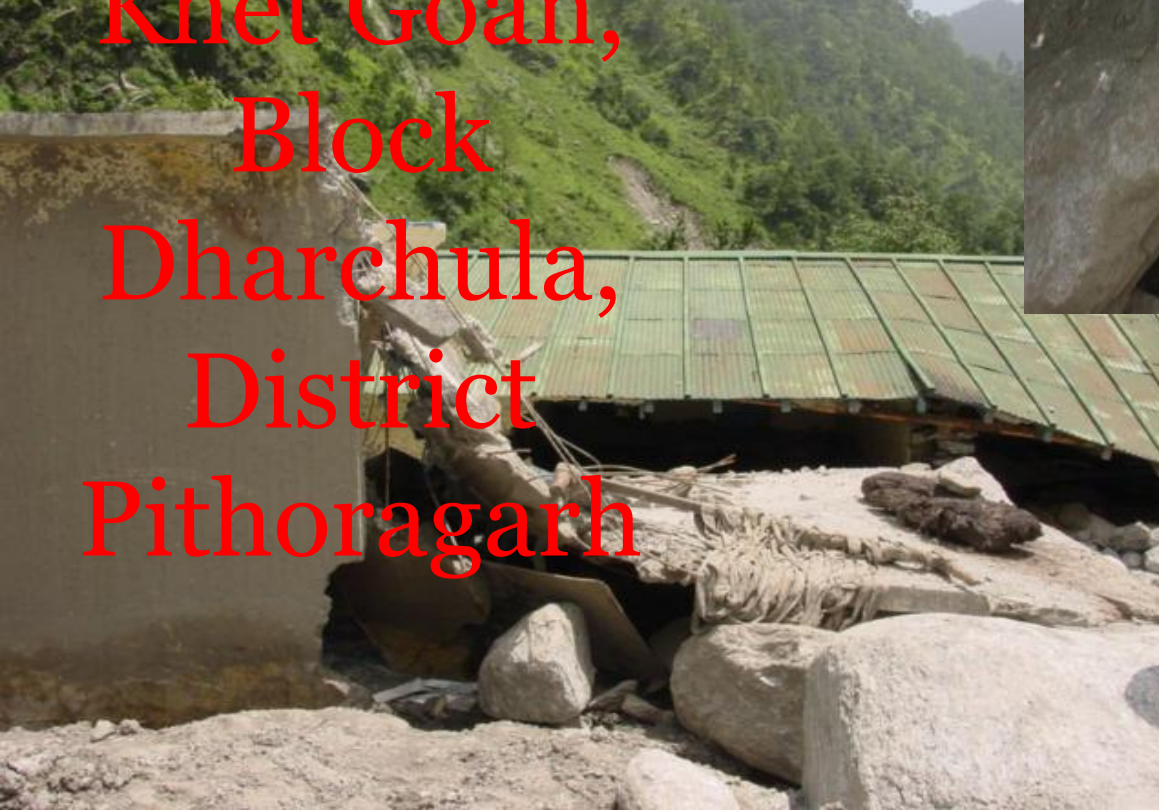
Uttarakhand



LOCATION



Visit to
Khet Goan,
Block
Dharchula,
District
Pithoragarh





PHAGARI TOK











Damaged School Building



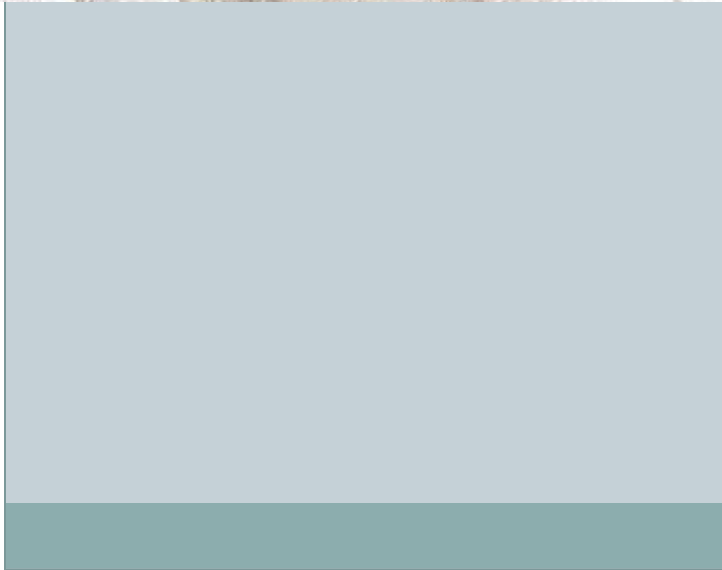
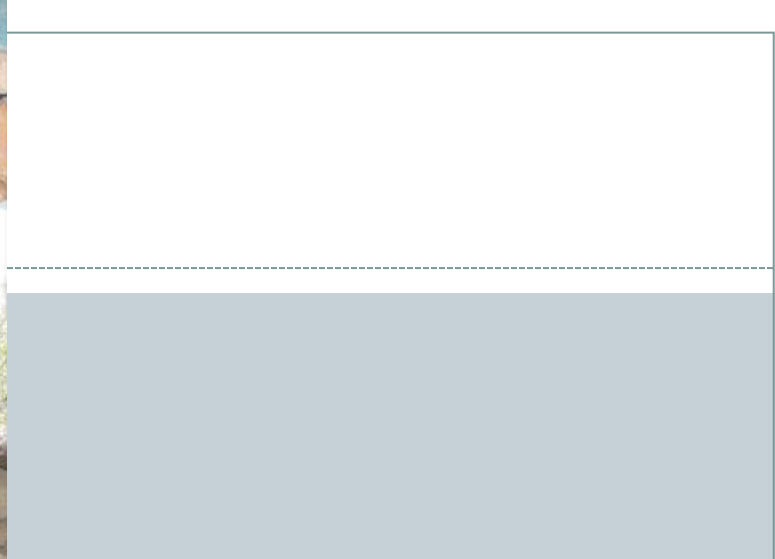


**GIC Principal's Residence
totally washed away**



Damaged School Building









In front of damaged house
two more houses totally washed away



Five family members died in this house





JAMKU

JAMKU NALA

**MALLA
KHET**



MALLA KHET







CLOUD BURST INDUCED DISASTER

**In parts of Bal Ganga, Dharam Ganga
and Merh Nala Catchments, Patti
Thati Kathur (Budhakedar), Tehri
Garhwal**

10th August 2002

9:00 – 9:30 pm

Presentation By

**Disaster Management Cell
Uttarakhand Academy of Administration
Nainital 05942-235011,239114**

Chief Advisor

Shri Rakesh Sharma, Director UAoA

Chief Coordinator

Dr. R.K. Pande, Executive Director, DMMC

Team Members

Dr. Pradeep Goswami

Dr. K.N. Pande

Dr. Navneet Gupta

Dr. Om Prakash

Acknowledgements

Shri Uma Kant Pawar, District Magistrate, Tehri

**Shri Biharilal – Lok Jeevan Vikas Bharti,
Budhakedar, Tehri**

Visit to Severely affected Villages

*(Block Bhilangana, Tehsil Ghanshali,
Distt. Tehri Garhwal)*



- Agunda
- Marwari (Jaral, Manjira and Kanna Tal)
- Merh
- Kot

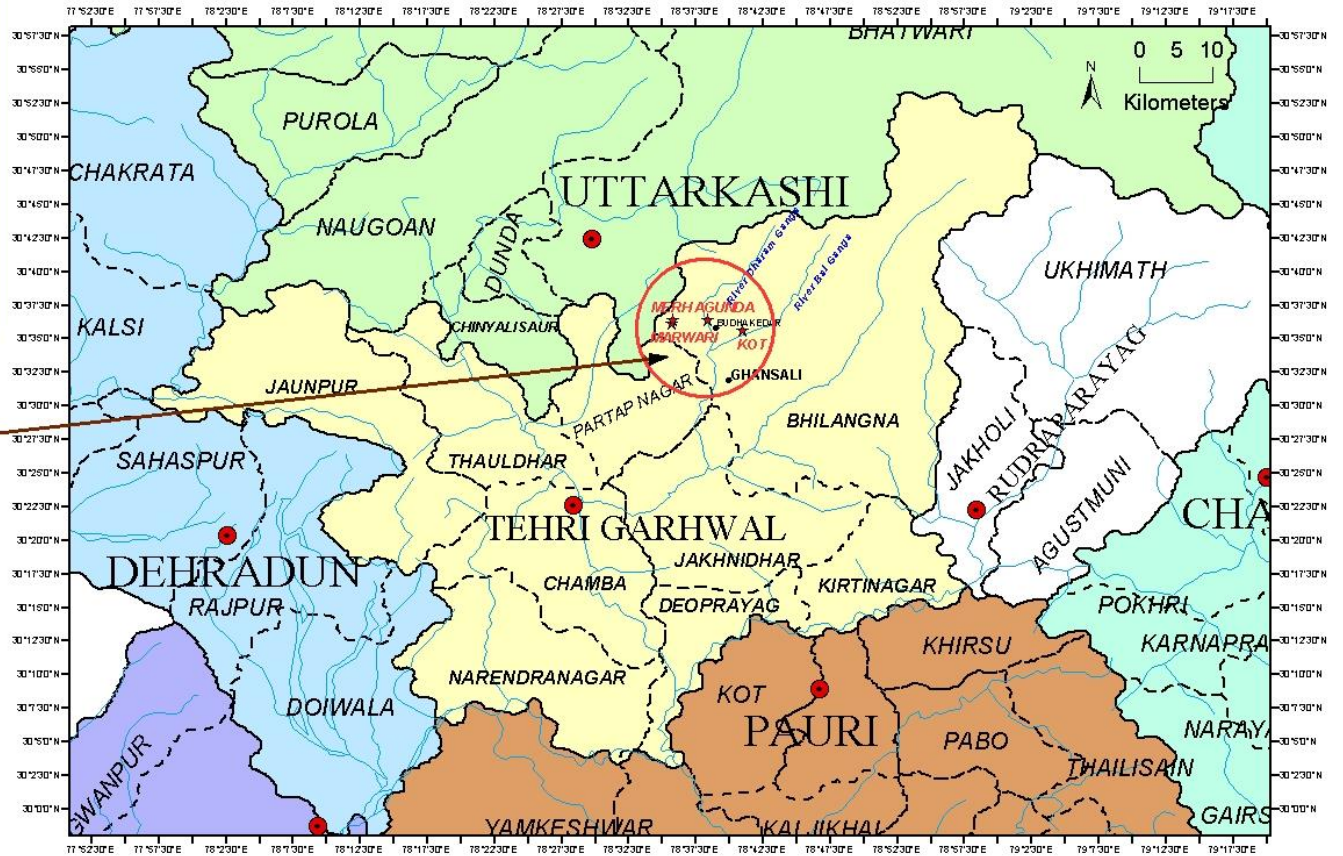
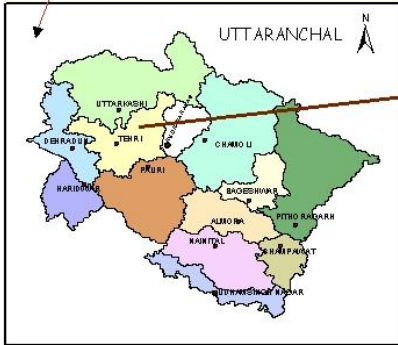
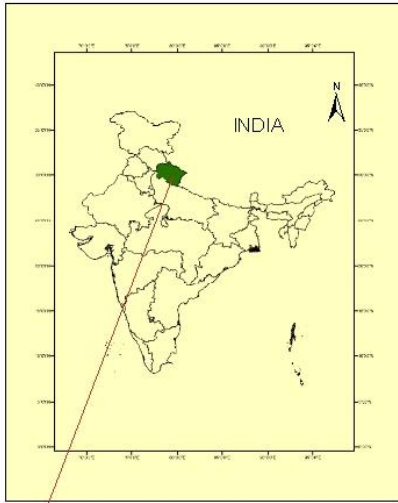


LOCATION OF AFFECTED AREA

District	Tehri Garhwal	
Tehsil Development Block Patti	Ghansali Bhilangana Thati Kathur	
Base Camp of the DMMC team & Control Room for Site Operation	Village Budhakedar	About 90 km from District Hq. at New Tehri • Situated at the confluence of river Bal Ganga and Dharam Ganga • About 800 m down stream , there is confluence of Merh Nala with Bal Ganga
Catchment and Valley	Parts of Bal Ganga, Dharam Ganga and Merh Nala Catchments	
Severely affected villages in Dharam Ganga Valley	Agunda	Foot path - 04 km from Budhakedar at 1560 m elevation
Severely affected village in Bal Ganga Valley	Kot	Foot path - 6.5 km from Budhakedar at 1680 m elevation
Severely affected villages in Merh Nala Cachment	Marwari Merh	Foot path - 5.5 km from Budhakedar at 2000 m elevation Foot path – 7.0 km from Budhakedar at 1960 m elevation

Location of landslide affected villages - Agunda, Marwari, Merh, Kot of Budhakedar (Thati Kathur), Block - Bhilangana, Tehsil - Ghansali, District Tehri Garhwal

Agunda	78° 38' 25" E	30° 36' 29" N	Medh	78° 35' 50" E	30° 36' 30" N
Marwari	78° 35' 46" E	30° 36' 10" N	Kot	78° 41' 00" E	30° 35' 39" N



	Area (in hectare)	Population (no. of persons families)
Agunda	75.27	305/61
Marwari	160.25	817/130
Merh	161.06	740/107
Kot	208.43	935/121

LANDSLIDE AFFECTED VILLAGE (Night of 10.08.02)

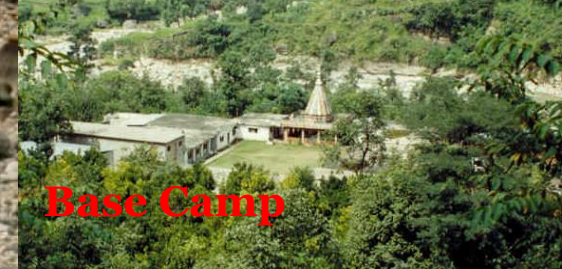
DRAINAGE

DISTRICT BOUNDARY

BLOCK BOUNDARY

ALMORA	CHAMPAWAT	NAINITAL	RUDRAPARAYAG
BAGESHWAR	DEHRADUN	PAURI	TEHRI
CHAMOLI	HARIDWAR	PITHORAGARH	UTTARKASHI
			UDHAMSINGH NAGAR

UA Govt. Machinery at Site Operation Centre Budhakedar



Base Camp



Control Room



PRD Jawans



Relief Material

Summary of Losses

S.No	Nature of Loss	Magnitude			
1.	Life Loss Injured	28 in 4 Villages 28 in 6 Villages			
2.	Loss of Cattle	99 in 7 Villages			
3.	Houses - Full Partial	38 in 7 Villages 151 in 11 Villages			
4.	Agriculture Land - Irrigated Non-irrigated	(61.28 hectares in 17 Villages) 43.384 hectares in 14 Villages 17.893 hectares in 17 Villages			
5.	Common Property Resources	Roads	Bridges	Drinking water	Irrigation Schemes
	PWD	04	-	-	-
	Forest	21	03	-	-
	Zila Panchayat	11	05	-	-
	Jal Sansthan	-	-	22	-
	Jal Nigam	-	-	06	-
	Minor Irrigation	-	-	-	17
	Irrigation	-	-	-	67

Village wise Human and Cattle loss

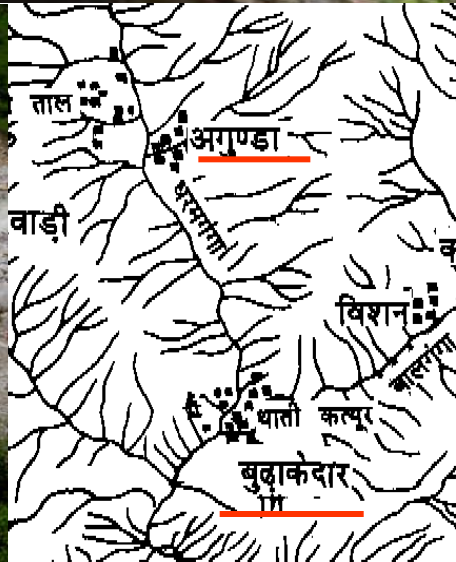
S.No.	Village	Magnitude of the loss		
		Human casualties	Human injuries	Cattle loss
1.	Agunda	11	07	48
2.	Marwari	10	10	02
3.	Merh	04	01	-
4.	Kot	03	08	09
5.	Titrona	-	01	12
6.	Ragasia	-	-	18
7.	Badhwari	-	-	-
8.	Newal	-	-	08
9.	Toli	-	01	02
	Total	28	28	99

Village wise loss of houses

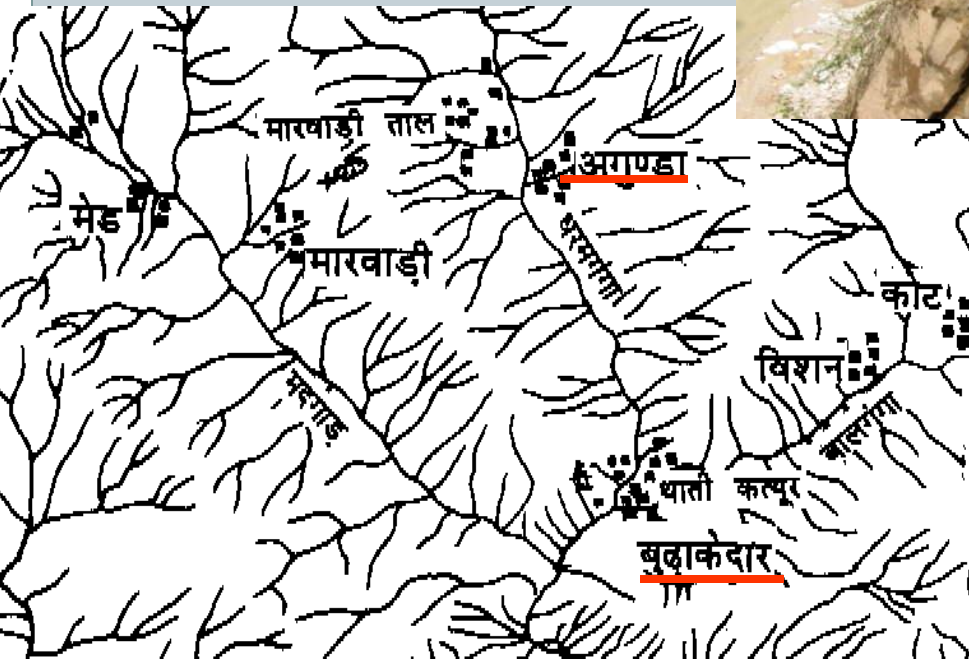
S.No.	Village	Total collapse	Partial damage
1.	Agunda	11	27
2.	Marwari	13	20
3.	Merh	09	43
4.	Kot	01	05
5.	Koti	02	05
6.	Pinswara	-	11
7.	Ragasia	01	07
8.	Titrona	-	09
9.	Newal Goan	-	13
10.	Urari	-	09
11.	Gaiwali	01	02
	Total	38	151

*On way
to
Agunda*

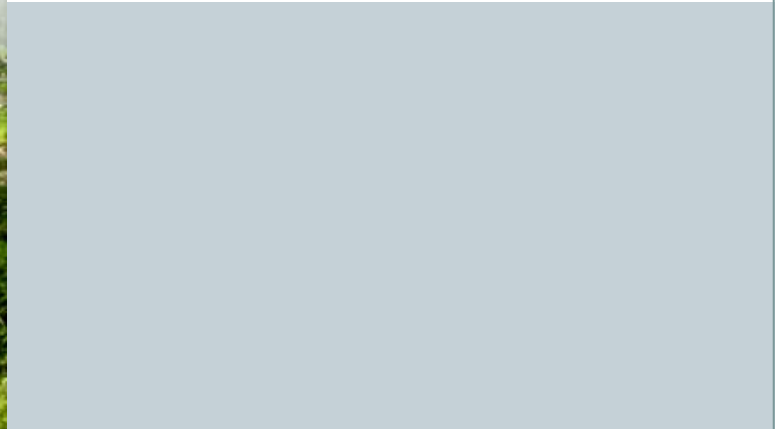
**Landslides up rooted trees
carried by River Dharam Ganga**



Landslides between Budhakedar and Agunda



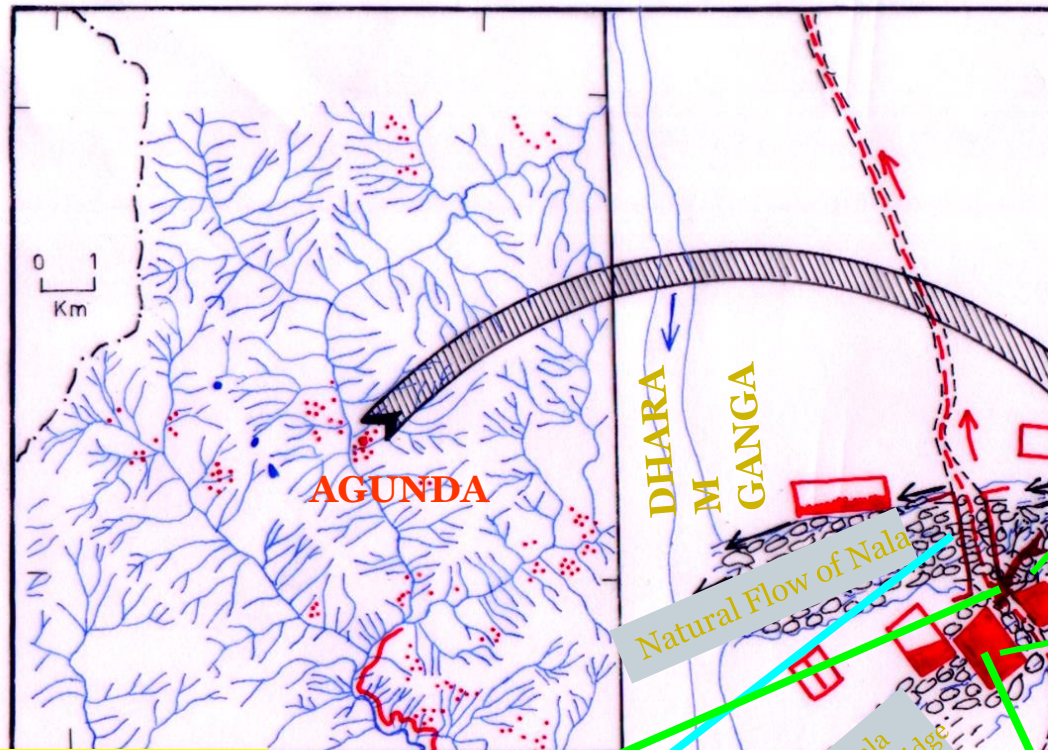
Loss of Agriculture land



AGUNDA



Property & Life Loss in Agunda



Changed flow of Nala
Due to damming at bridge



Natural Flow of Nala

Changed flow of Nala
Due to damming at bridge

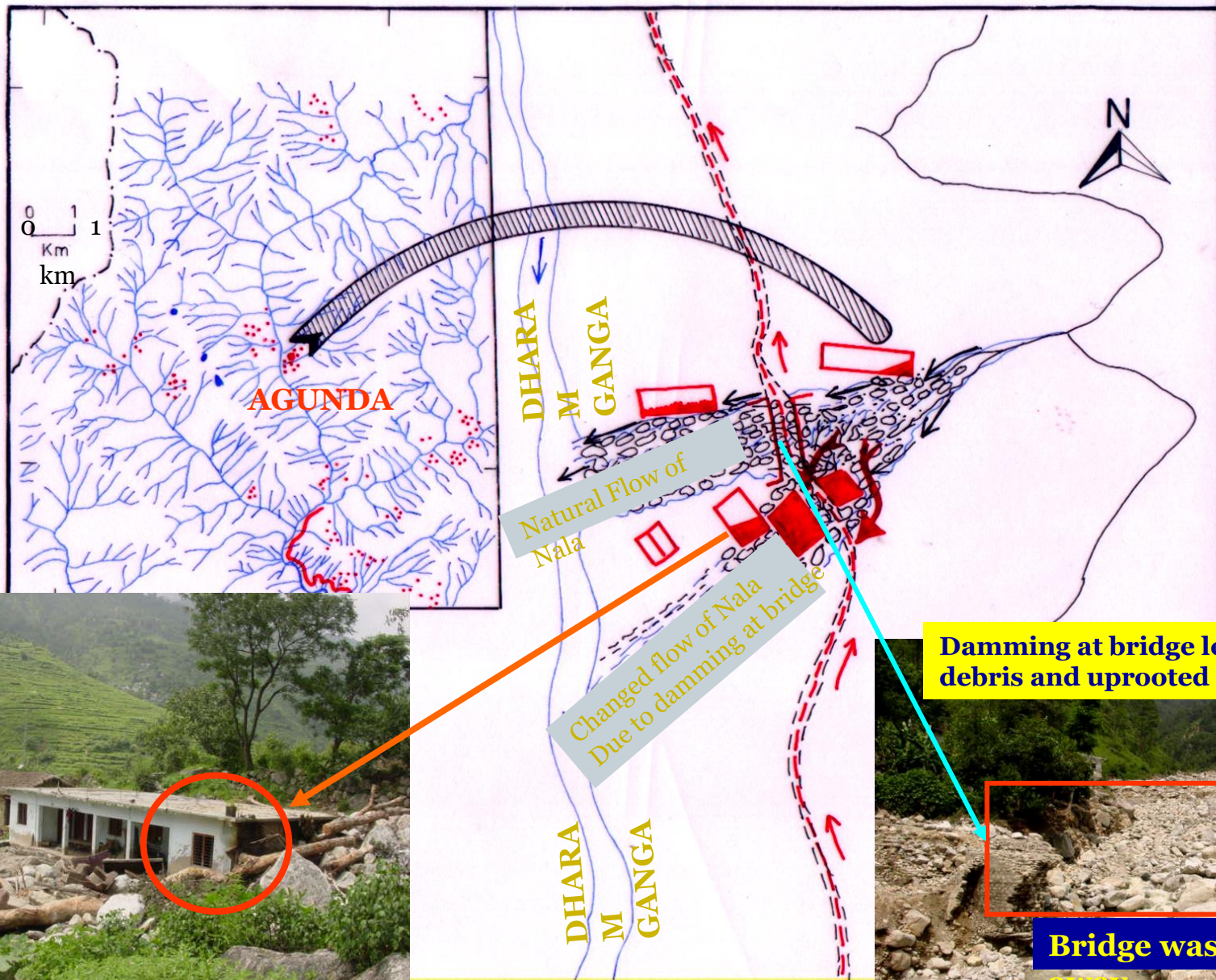
Damming at bridge level due to
debris and uprooted trees



Bridge washed
away

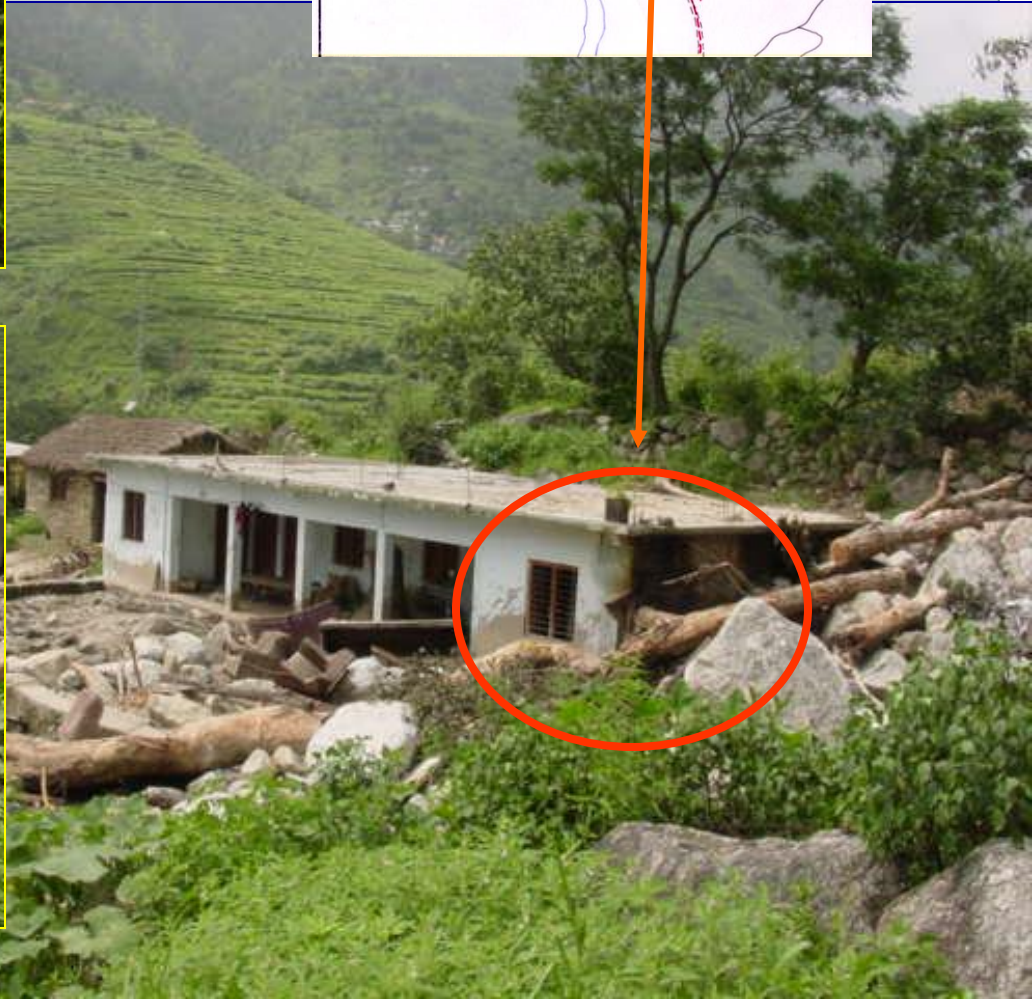
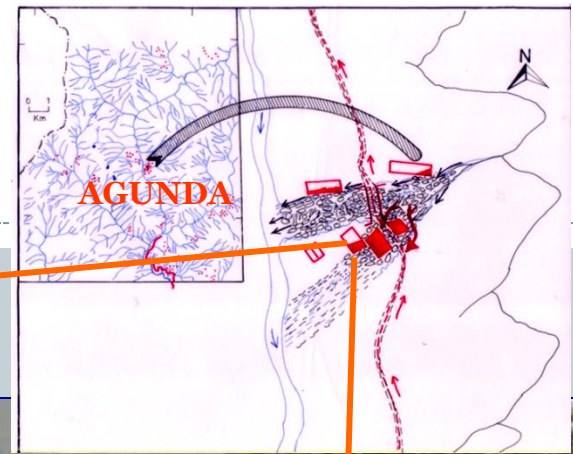


Property & Life Loss in Agunda

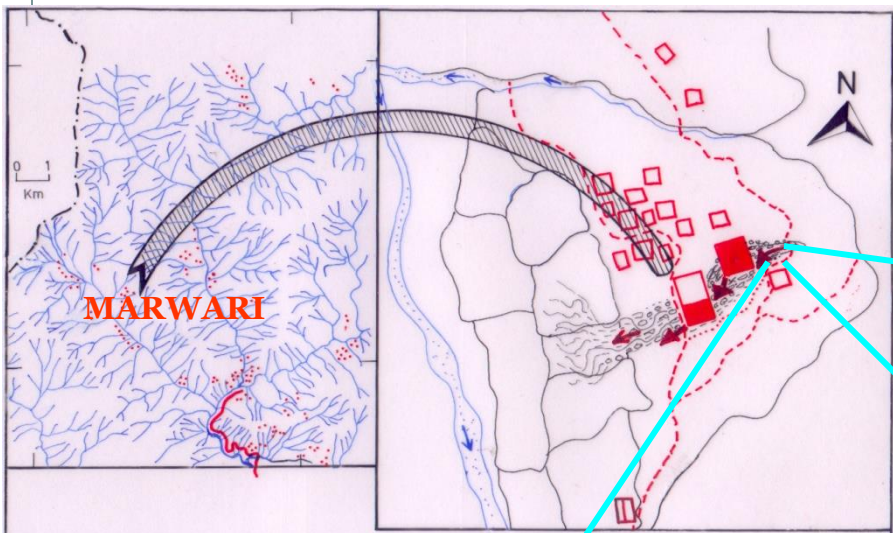


Damming at bridge level due to debris and uprooted trees

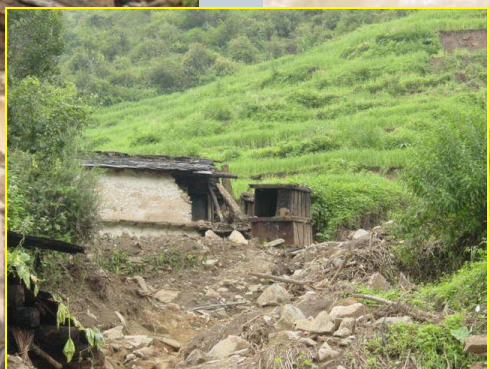
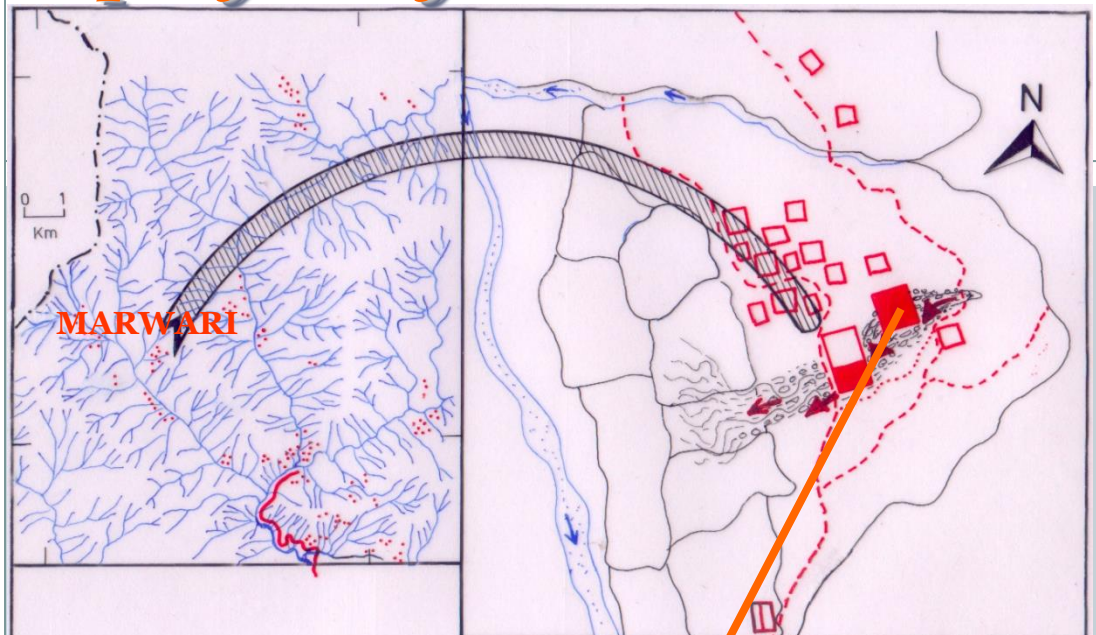
Bridge washed away



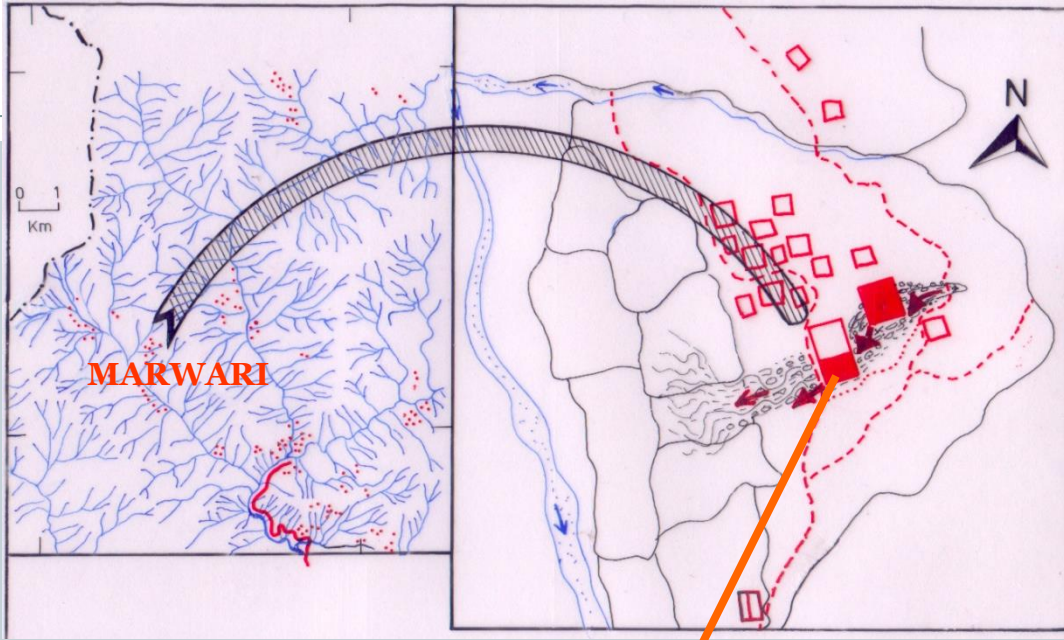
Property & Life Loss in Marwari



Property & Life Loss in Marwari



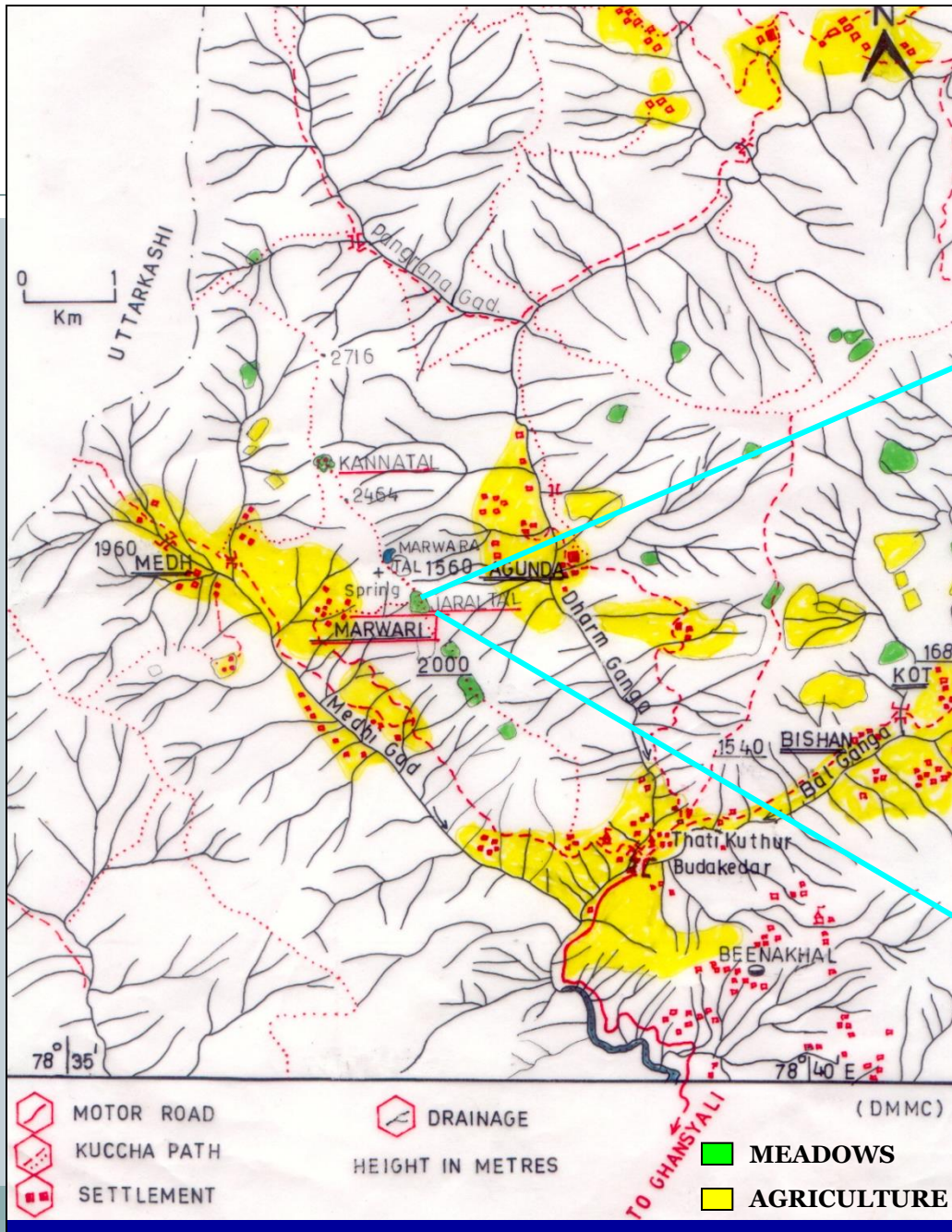
Property & Life Loss in Marwari



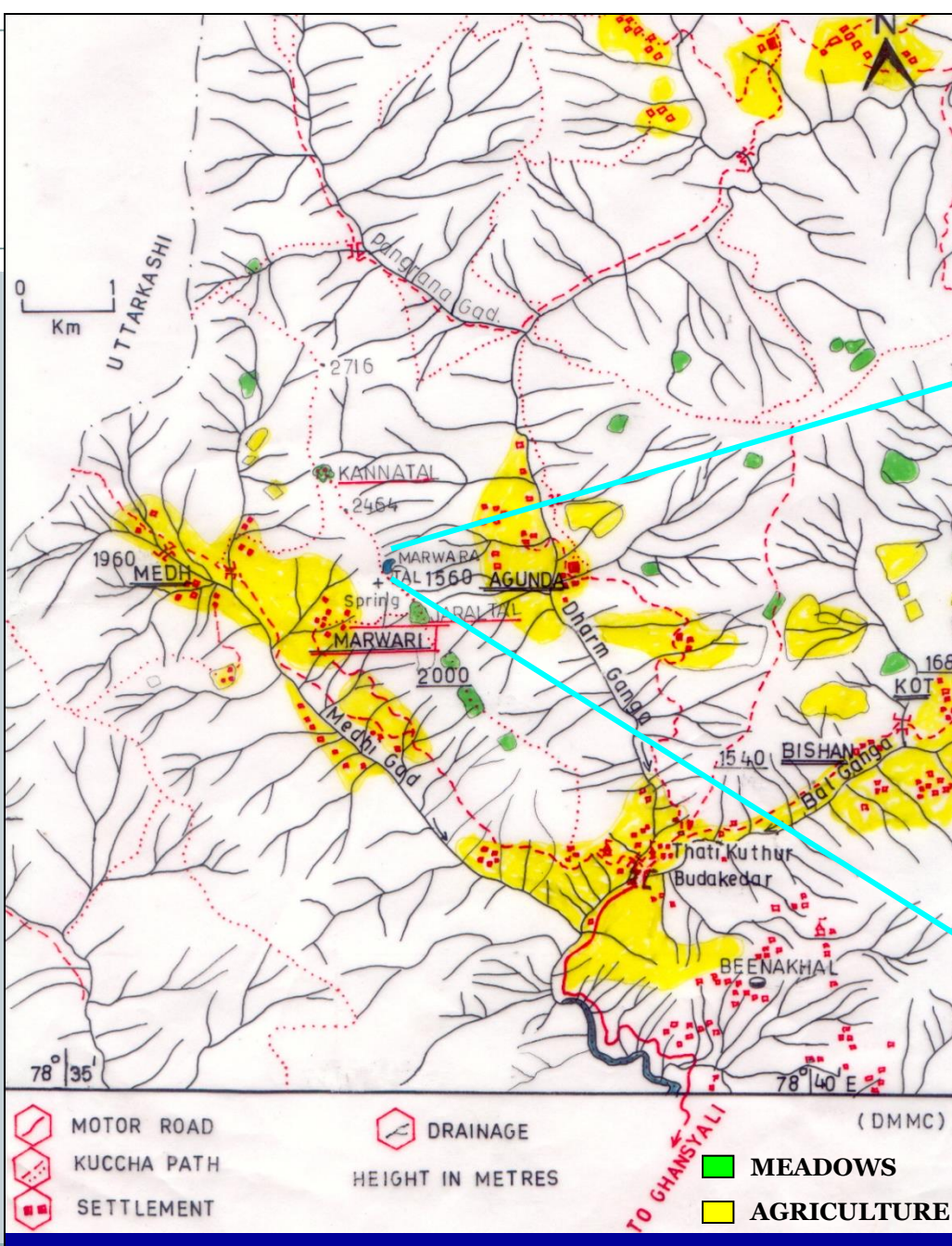
Relief distribution and on site medical attendance



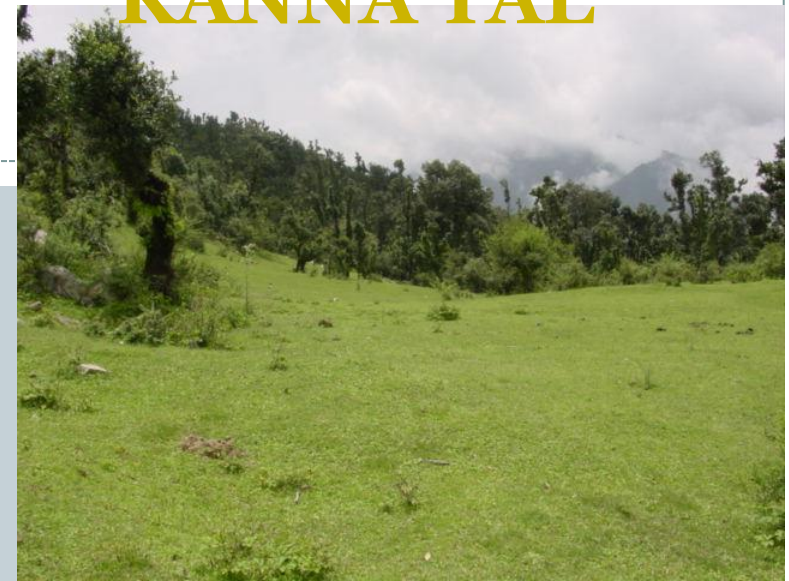
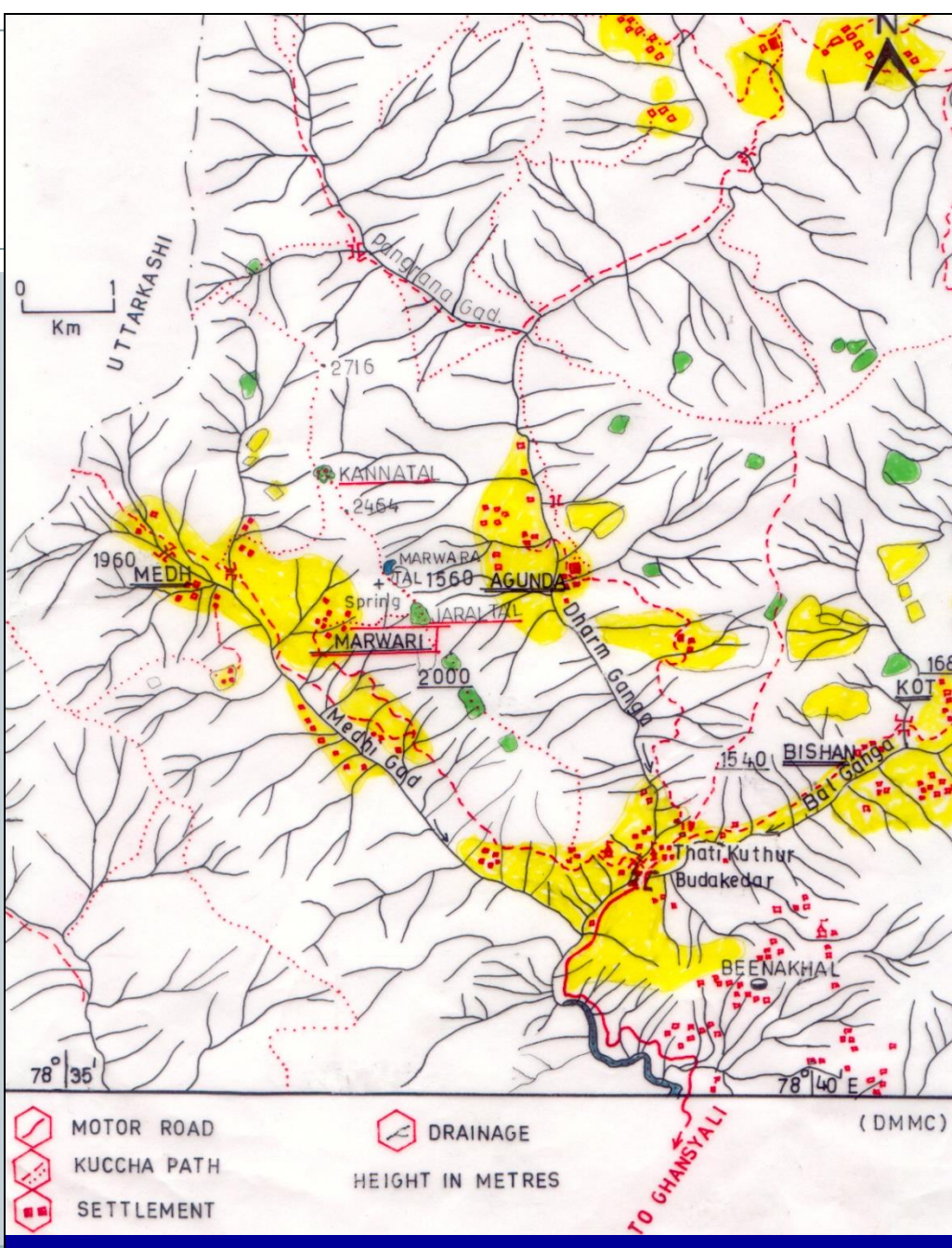
JARAL TAL



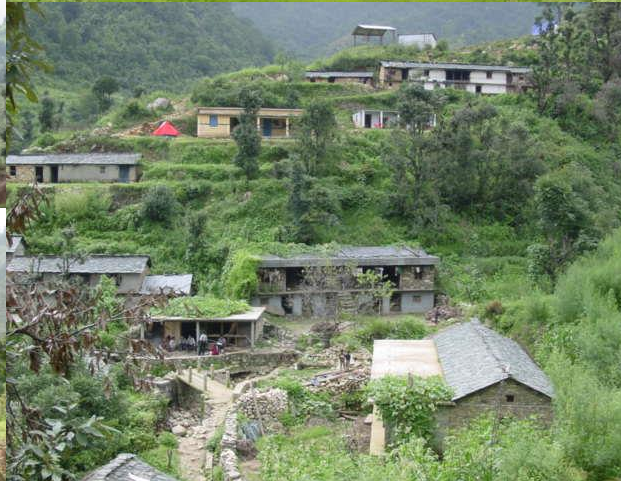
MANJIRA TAL



KANNA TAL



MERH



DOGARHI AND KHEMKHET TOKS OF MERH VILLAGE



KOT







Team Member:

Dr.SuryaPrakash
Associate Professor,
NIDM,New Delhi

Dr.OmPrakash,
DMC, UAoA,
Nainital

07 August 2009
Nachni Munsyari,
Pithoragarh

Human loss

Sl.No	Village	Casualties
1	Jhekla	12
2	Laa	26
3	Rumidola (Berumahar)	05
	Total	43



200 m. Road totally washed
away



A Restaurant totally washed away



Debris flow

There was
Huge amount
of water





Jhekla Village

14 houses washed away



Temple
washed
away

Search
&
Rescue
by
Police
Depart
ment







Dead Bodies recovered by
Local People







D























Only 01 house
existing in Laa village

12/08/2009



12/08/2009



Animal loss





Shri Bahguna
S.O Munsyari

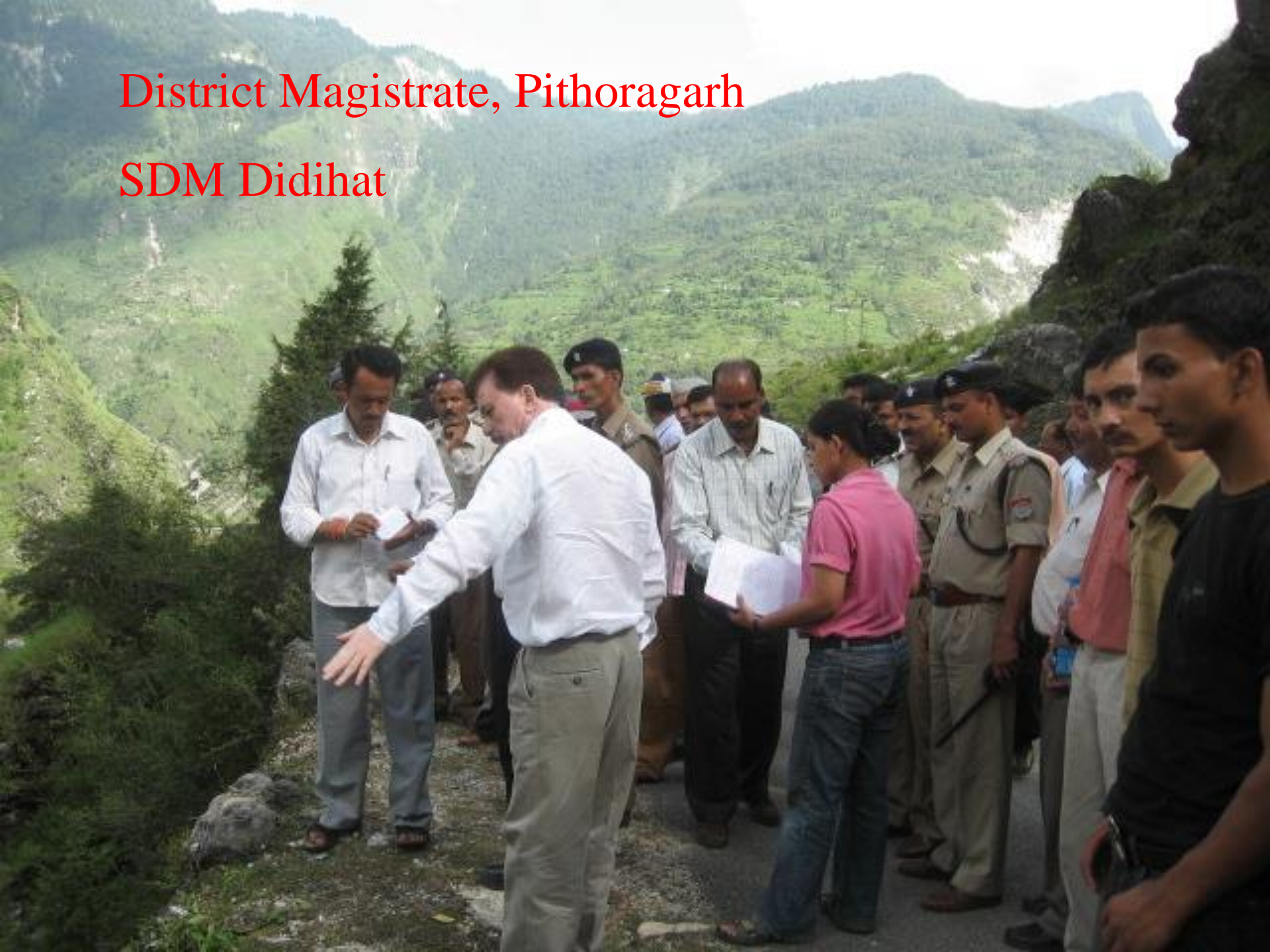
Visit of Hon ,ble Chief Minister





District Magistrate, Pithoragarh

SDM Didihat





Commissioner Kumaon





Visit of Commissioner & District Magistrate







SDM Didihat crossing debris



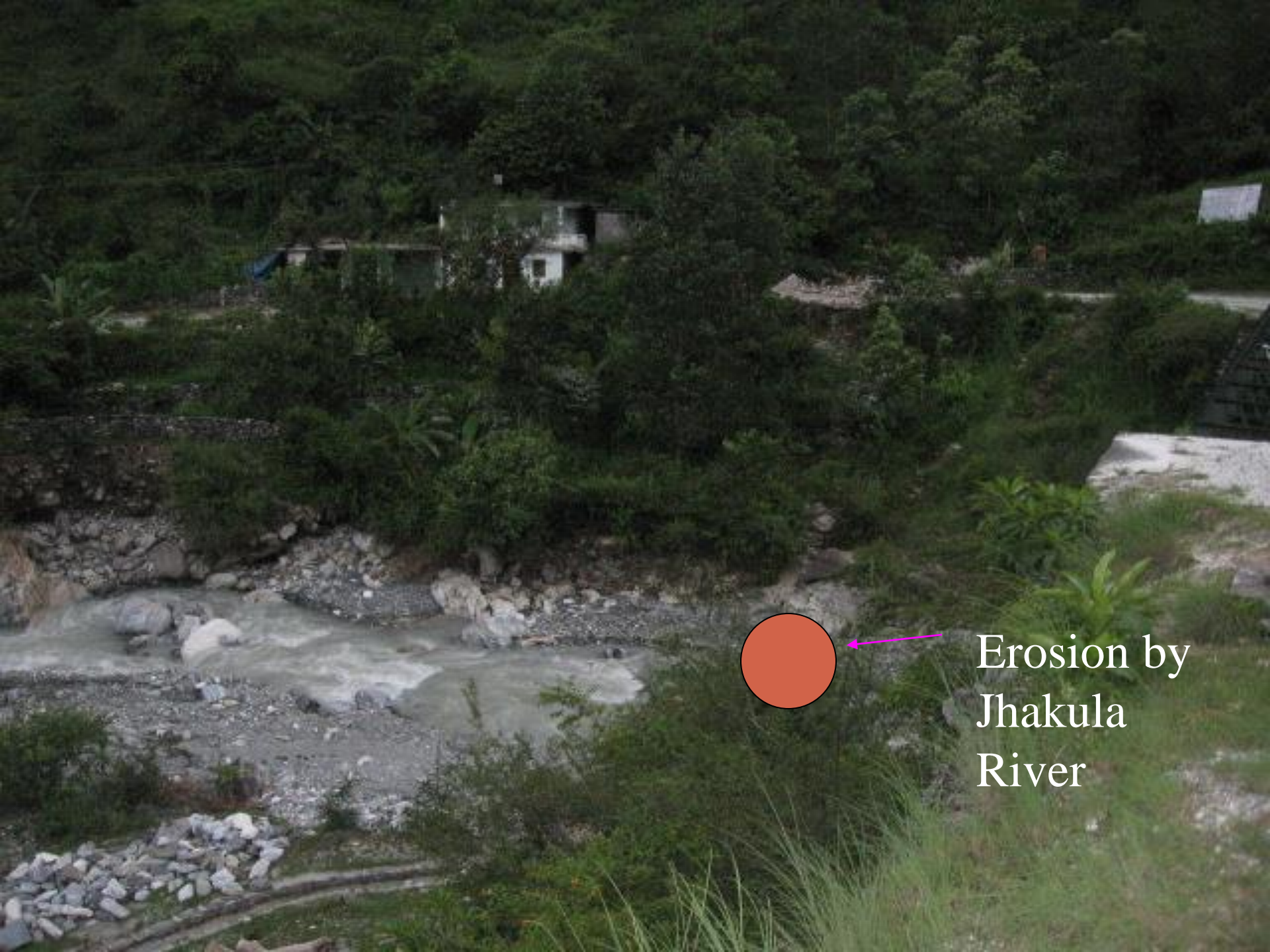
Meeting of District Officials at Dor Inter College, Nachani



ITBP with equipments



01 Dead
body
recovered



Erosion by
Jhakula
River

Temporary Rehabilitation





Distribution of Relief

Sl.No.	Name	Amount of Relief
1.	Sri Lal Singh S/o Sri Pan Singh	1,35,000.00 1 lakh for death,25Thousand for Houses,10 Thousand for Animal
2.	Smt.Gaura Devi W/o Harcharan Singh	1,35,000.00
3.	Sri BAhadur Sing S/o Sri Pokhar Singh{07} Dead bodies recovered out of 09 casualties	7,19,000.00
4.	Sri Balwant Singh,Dev Singh S/o Sri Kunwar Singh {12 person deied,only 01 body of mother recovered,Now 02 members in the family are alive. }	1,74,000.00
5.	Sri Ram Singh S/o Sri Gopal Singh {03 bodies of children recovered}	3,35,000.00
6.	Sri Jasmal Singh S/o Sri Hayat Singh{02 child}	2,35,000.00
7.	Sri Durga Singh S/o Sri Hayat Singh	35,000.00
	Total	17,68,000.00

CLOUDBURST

Sumgarh, Kapkot
District- Bageswar
18th August, 2010

Shumgarh village is situated at a distance of 37 Kms towards north direction from Kapkot, Block head quarter. There is a Sarswati Shishu Mandir located towards eastern side of the river Sarau, which was connected with a bridle road and a steel girder bridge. Out of 140 students only 35 upper primary students were present. On 18th August, 10 at 0925 hrs. under heavy rain, a major landslide occurred just behind the school building hillock. The debris hit the back side wall of the school building, smashing it, entered inside the rooms and filled up to varandah. Those who were studying in the rooms were buried alive. 18 child students under the age of 04 to 10 years buried under the debris. Those who were in the varandah could escape some how. One teacher and seven students got injuries while escaping from this disaster.



Water flow of Sharyu
River



Bridge on the
Sharyu River

Turturiya Bridge





Lord Shiva Temple

Road Totally Damaged





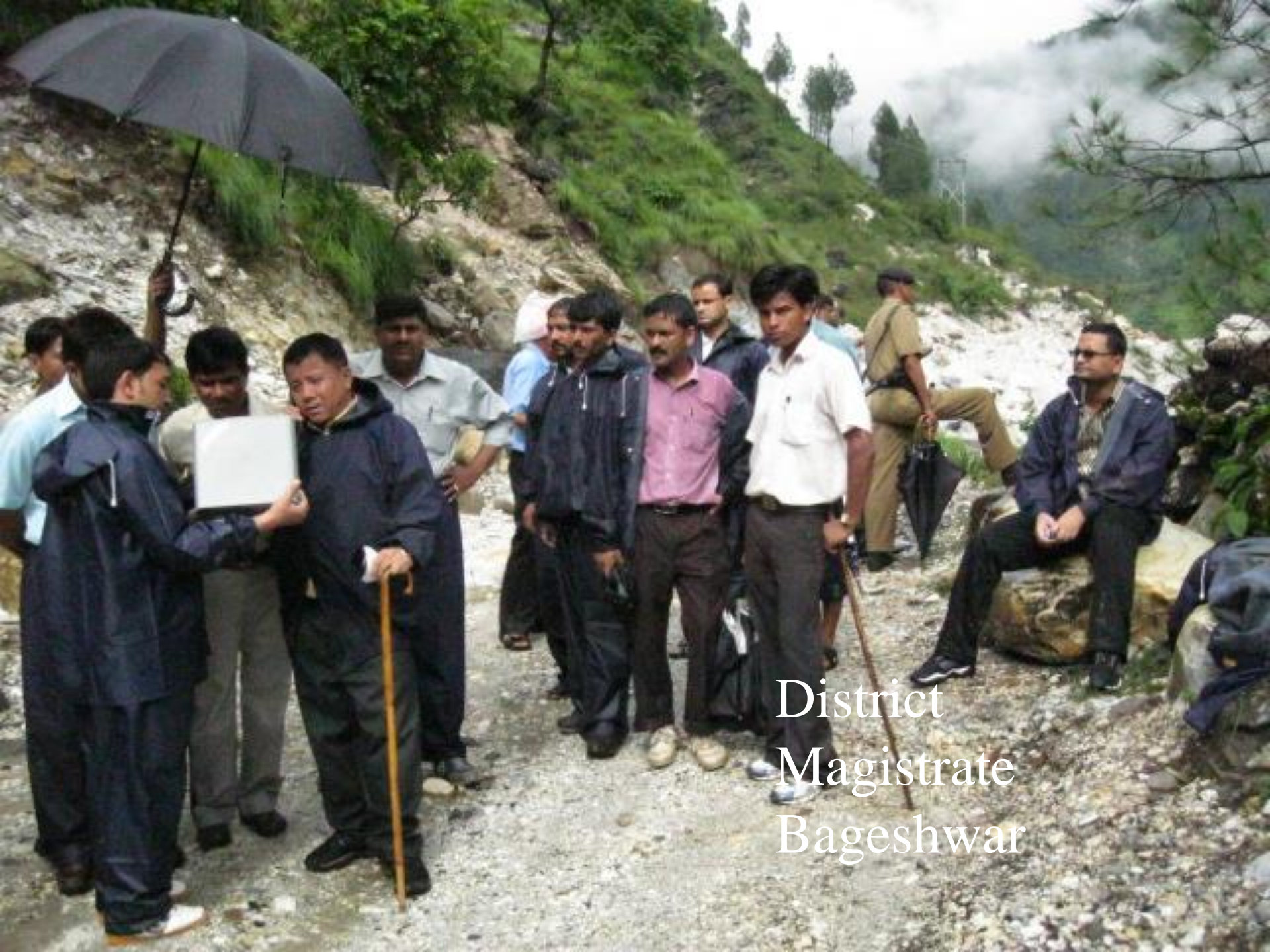
Hydro Project near
Sharyu River



Road Construction work







District
Magistrate
Bageshwar



Totally washed
away







108
Service



Debris came from behind of the
School



Search & Rescue work
done by Local People



Search & Rescue

Search & Rescue





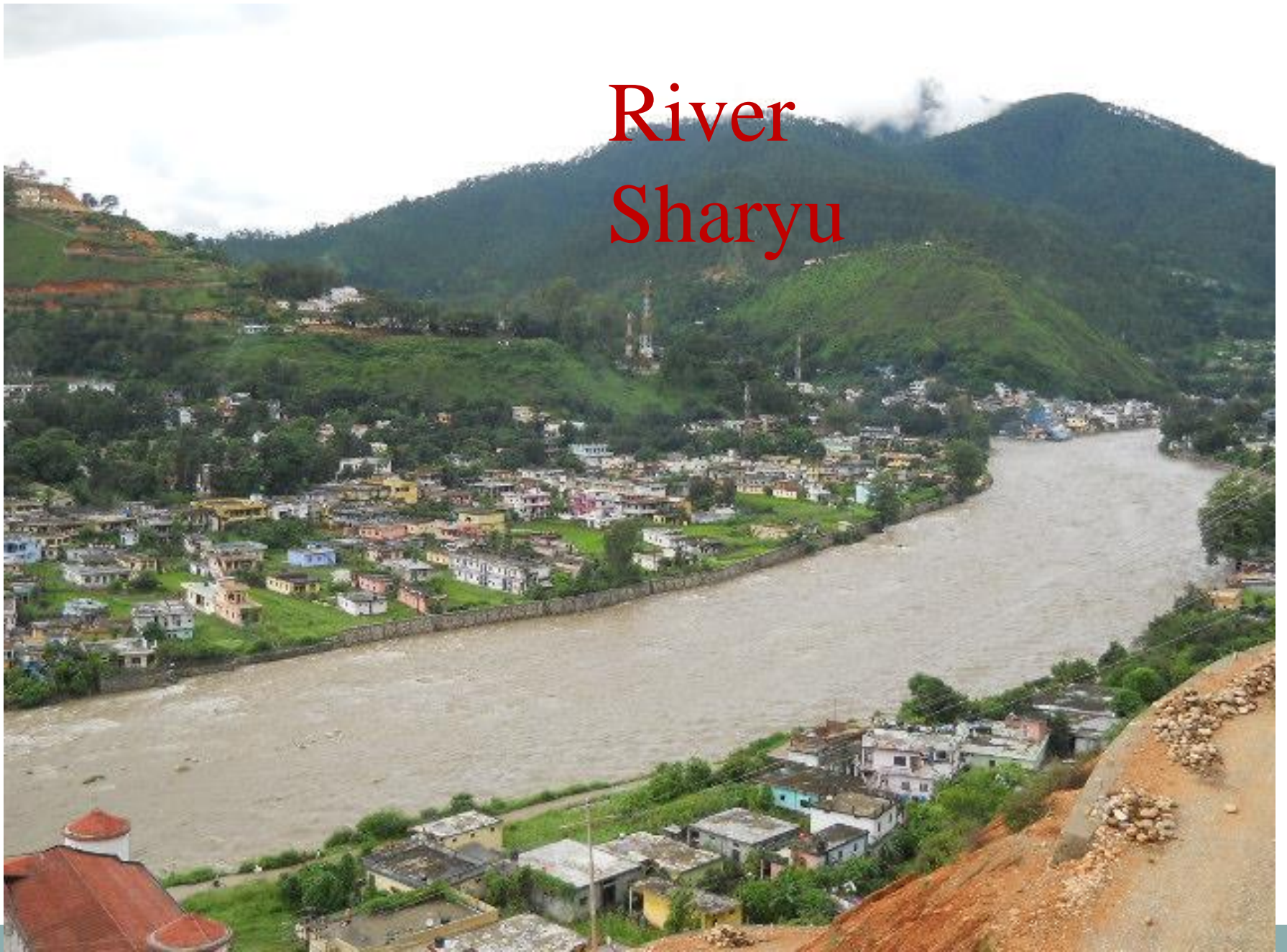


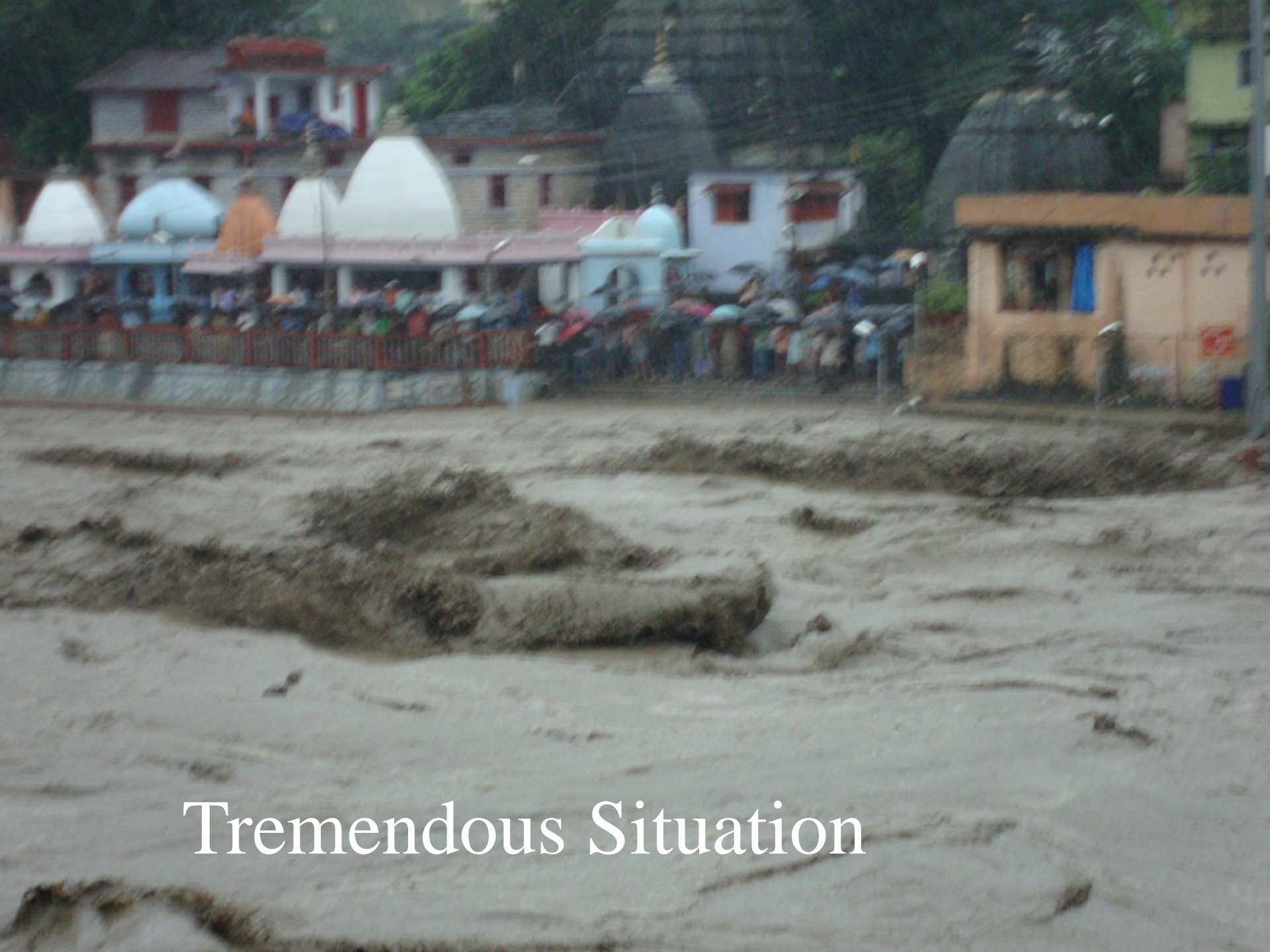
02 Children
in 108
Service





River Sharyu





Tremendous Situation



I.T.B.P rush for Search and
Rescue



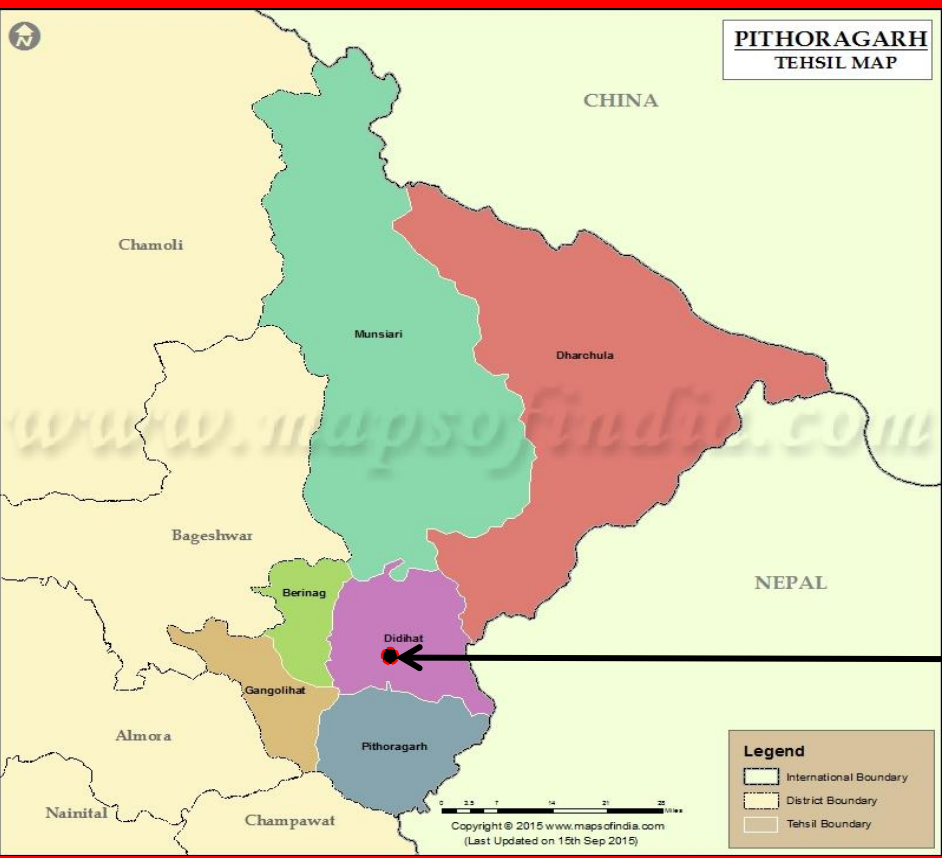
Bastari, Didihat, Pithoragarh

Location of Affected Area:

Bastari is situated 29°44'29" N Latitude and 80°17'975" E Longitude. The Altitude of the area is 1725 meter from mean sea level. Didihat is nearest town to Bastari which is approximately 13 Kms. away from the affected area. The affected area is 45 Kms. away from district Head Quarters at Pithoragarh. The total geographical area of the affected villages is 264.17 Hectares. As per Census 2011 total population is 312 people (Male Population 149 and Female Population 163). There were about 80 houses in Bastari Village.

INDIA





Chronology of Disaster:

The disaster affected Bastari area was basically debris fall from the near by hill top triggered by prolonged and heavy rain fall over the area from June 30th, 2016 which resulted in detachment of already disturbed land area due to construction of road at the upper hill side and standing rock masses, debris fell down up to a distance of 100 m. towards west and the branched into two different directions north west and south west. The portion diverted to the north west blocked foot path to Bastari area which greatly hampered the rescue work, the other portion which was diverted to the south west direction travel the downward distance of about 100m. along the hill slope. Which caused complete destruction and loss of property in the village and affected the connecting villages Urma and Patharkote. Even though most of the human and property losses occurred in Bastari area, but Urma and Patharkote villages are at a potential risk of upcoming disaster. As per the information/statements of the locals, villagers the chronology has been prepared. The Bastari in Didihat Tehsil village is located at a distance of 45 Kms. from District Head Quarter at Pithoragarh. On Friday 01st July 2016, 4:30 am the Landslide occurred because continuous heavy rains/cloudburst in Bastari Village. Urma and Pattharkote are also affected and are at potential risk. where 14 people buried alive.

Another cloud burst took place at Naulaura village next to Nachani area in Tehsil Munsyari District Pithoragarh the casualties were 03 persons. Villagers from Naulaura area narrated that it was raining heavily and at 12:00 hrs. in the mid night houses collapsed under a debris slide. Bastari villagers narrated that it was raining heavily since last evening continuously. Early in the morning at 4:30 am a bigbang noise was heard with thunder storm and lightening. one house half covered with mud and debris, 05 people stranded in house, on the cry neighbors came for rescue and pulled them out from debris. By the mean time many villagers gathered and victims were taken to save them and a nearby house for shelter. Within 40 minutes again with a bigbang a huge amount of debris and mud flushed more houses and many villagers/ rescuers were stranded in side the house. At the time of bigbang, all the house were affected by tremor, thunder lightening was observed. On lady who survived reported that the huge papal tree was completely covered and was invisible with some thick dark smoke like material.

The communication was disrupted in the morning because entire area was covered by heavy rains. Bastari Village was cut off, all road to Tehsil/district headquarters were blocked. A motorcyclist informed ITBP battalion located at Mirthi 20kms. away from Bastari. Assam Regiment located at Charma, 10 Kms. away from Bastari, reached Bastari by 11:00 am, and started search and rescue operation at Bastari. The commandant Col. J. Chaudhary claimed. By 14:00 hrs. to 15:00 hrs. ITBP. SDRF, District administration and other rescue team started pouring in at the local operation centre. District Magistrate Shri H.C. Semwal and S.SP Pithoragarh Shri Roshan Lal Sharma reached at Bastari village on foot and cover 15 Kms. distance and took the command of operation in the affected area. All agencies involved in this operation and recovered many dead bodies and animals.

The affected site was visited by Hon,ble Chief Minister of Uttarakhand State, Shri Harish Rawat, Rajya Mantari, Government of India Shri Ajay Tamtavisited the Bastari village on consecutive dates.

Causes of Disaster: Scientific Approach:

After survey of this area and taking into consideration all the factors it can be said that this disaster took place due to landslide and flash flood “A Cloud burst is a high intensity rain fall, in shortest period of time at a particular place. Sometimes rain comes with thunderstorm, it’s time is generally from July to August”. Heavy rain takes place with heavy thunder lighting. Because generating a low pressure area of heat the air spreads speedily. With the same speed the water charged clouds enter that low pressure area and its rains heavily like a waterfall. The earth can not absorb such an amount of water and it is converted into a Flash Flood. If the area is already saturated with earlier rains. The entire debris up hill make a landslide formation.

Entire Uttraakhand is very sensitive towards natural disasters. It becomes more sensitive to landslides and flash floods incidences. Both these disasters are directly related to heavy rains and its drainage, damaging and devastating many areas. The steep slope and valleys of hilly areas are responsible for such disaster happenings.

Nalas in the hilly slopes make the shape of vertical cone, where lot of debris, mud and stones are deposited in the Nala valley areas. The ancient time Glaciers had also deposited lot of deposition and have formed U-shaped ghaties. Most of the agricultural activities take place in these ghati areas and surrounding slopes. Even villages settlements are there along such areas/slopes. It can be seen that all these villages are established on earlier Landslide zones and on a debris.

All these villages/ houses are constructed by stones and mud. The roofing is RCC slabs. The building structures are generally old fashioned and without any provision for modern techniques

Human Loss: Casualties

Large scale landslides often have disastrous impacts on the natural environment as well as on manmade structures, villages and towns, agricultural and forest lands, communication routes, water bodies and human and animal population are threatened by such slope movements. Underlining the social and economic significance of landslides may be disastrous in the long run. In the case of Bastari landslide, besides loss of human life and cattle, a large number of houses were also destroyed by the landslide.

Dead Persons:

- Smt. Deepa Devi wife of Chandra Ballabh Village Bastari
- Ms. Riya daughter of Chandra Ballabh Village Bastari
- Shri Madhavanand son of Moti Ram Village Bastari
- Shri Ravindra Bhatt son of Chandra Ballabh Bhatt Village Bastari
- Shri Girish Chandra son of Gopal Datt Village Bastari
- Shri Raghuwar Datt son of Krishnanand Village Bastari
- Shri Jagdish Chandra son of Narayan Datt Village Bastari
- Shri Indu Bhatt Son of Jagdish Chandra Village Bastari
- Shri Shekhar Bhatt son of Damodar Bhatt Village Bastari
- Shri Chandrakala son of Shekhar Bhatt Village Bastari
- Shri Jahad Singh son of Madan Singh Village Bastari
- Shri Baba Shyam Bharti Village Jamjyali Gaun (Charma)
- Shri Chandraballabh son of Jaydev Village Bastari
- Shri Ram Datt son of Fakir Datt Village Bastari

Injured Persons:

- Shri Mohan Chandra son of Hari Datt village Bastari
- Smt. Manju Devi wife of Mohan Chandra village Bastari
- Ms. Sunita daughter of Mohan Chandra village Bastari
- Shri Vinod Bhatt son of Mohan Chandra village Bastari
- Ms. Neelam Bhatt wife of Krishnanand village Bastari
- Smt. Leela Devi wife of Jahad Singh village Bastari

Missing Persons:

- Smt. Rama Devi/ Ramuli Devi wife of Hari Datt village Bastari.
- Smt. Sarswati Devi daughter of Hari Datt village Bastari.
- Shri Krishnanand son of Digar Dev village Bastari.
- Ms. Khusi daughter of Krishnanand village.
- Master Aryan son of Krishnanand village.
- Shri Jeevan son of Chandra Ballabh village.
- Shri Gaurav son of Mohan Chandra village.
- Shri Maya Datt son of Murali Dhar village.

Alternative Rehabilitation:

Families of Bastari village have been accommodated at **Singali** base camp. Their houses have been affected by debris. They go to Bastari village during day time to feed their cattles but come back to Singali for night stay. The rehabilitation and recovery road maps are still in ambience.



Panoramic View of Bastari Village after Disaster

Village Bastari, Didihat, Pithoragarh 01July 2016

























ARMY RELIEF MEDICAL CAMP
SINGALI



















कार्यालय तहसीलदार डीडीहाट।

दिनांक जुलाई 07, 2016।

संख्या ज्ञाप / दैवी आपदा-सूचना / 2016-17

सेवा में,

जिलाधिकारी
पिथौरागढ़।

विषय-

दिनांक 01.07.2016 की प्रातः हुयी दैवीय आपदा से प्रभावित परिवारों के विवरण।

महोदय,

उपरोक्त विषयक तहसील डीडीहाट अन्तर्गत आपदाग्रस्त क्षेत्र बस्तडी, उडमा, पत्थरकोट व आस-पास के अन्य ग्रामों में कुल प्रभावित 09 ग्रामों के 123 परिवार जिनकी सदस्य संख्या 517 है की आपदा से प्रभावित परिवारों का विवरण निम्नानुसार तैयार कर सादर प्रेषित की जा रही है।

दिनांक 01.07.2016 की अतिवृष्टि से हुई मृत व्यक्तियों का विवरण

क्र०सं०	मृतक का नाम / पिता / पति का नाम	ग्राम	मृतक के आश्रितों का नाम	मृतक के आश्रितों को वितरण की गयी धनराशि
1	दीपादेवी पत्नी चन्द्रबल्लभ	बस्तडी	श्री चन्द्र बल्लभ पुत्र हरीदत्त	800000.00
2	कु०रिया पुत्री चन्द्रबल्लभ	बस्तडी	श्रीमती हरुली देवी पत्नी माधवानन्द	400000.00
3	माधवानन्द पुत्र मोतीराम	बस्तडी	श्रीमती एकता मट्ट पत्नी रविन्द्र	400000.00
4	रवीन्द्र मट्ट पुत्र चन्द्रबल्लभ	बस्तडी	श्रीमती कविता पत्नी गिरीश चन्द्र	400000.00
5	गिरीश चन्द्र पुत्र गोपालदत्त	बस्तडी	श्रीमती पुष्पा पत्नी रघुवर दत्त	800000.00
6	रघुवर दत्त पुत्र कृष्णानन्द	बस्तडी	श्री मनोज, राकेश, कु० गुडिया पुत्र / पुत्री	800000.00
7	जगदीश चन्द्र पुत्र नारायणदत्त	बस्तडी	जगदीश चन्द्र	800000.00
8	इन्दु मट्ट पुत्र जगदीश चन्द्र	बस्तडी	श्री दामोदर पुत्र बालादत्त	800000.00
9	शेखर मट्ट पुत्र दामोदर मट्ट	बस्तडी		
10	चन्द्रकला पुत्र शेखर मट्ट	बस्तडी	श्रीमती लीला देवी पत्नी जहद सिंह	400000.00
11	जहद सिंह पुत्र मदनसिंह	बस्तडी		
12	बाबा श्याम भारती	जमज्यालीगांव (चर्मा)		
13	चन्द्रबल्लभ पुत्र जयदेव	बस्तडी	श्रीमती बरान्ती देवी पत्नी चन्द्र बल्लभ	400000.00
14	रामदत्त पुत्र फकीरदत्त	बस्तडी	श्रीमती पार्वती देवी पत्नी राम दत्त	4800000.00
	योग			

दिनांक 01.07.2016 की अतिवृष्टि से हुई घायल व्यक्तियों का विवरण

क्र०सं०	नाम प्रभावित / पिता / पति का नाम	ग्राम	वर्तमान स्थिति
1	मोहनचन्द्र पुत्र हरीदत्त	बस्तडी	सुशीला तिवारी चिकित्सालय हल्द्वानी में उपचार चल रहा है।
2	मंजूदेवी पत्नी मोहनचन्द्र	बस्तडी	जिला चिकित्सालय पिथौरागढ़ में उपचार चल रहा है।
3	कु०सुनीता पुत्री मोहनचन्द्र	बस्तडी	जिला चिकित्सालय पिथौरागढ़ में उपचार चल रहा है।
4	विनोदमट्ट पुत्र मोहनचन्द्र	बस्तडी	जिला चिकित्सालय पिथौरागढ़ में उपचार चल रहा है।
5	नीलम मट्ट पत्नी कृष्णानन्द	बस्तडी	सुशीला तिवारी चिकित्सालय हल्द्वानी में उपचार चल रहा है।
6	लीलादेवी पत्नी जहदसिंह	बस्तडी	प्राथमिक उपचार उपरान्त स्वस्थ होकर घर में ही है।
12	कु०शिवानी 02 वर्ष पुत्री देवेन्द्रप्रसाद	ननपापू	प्राथमिक स्वास्थ्य केन्द्र डीडीहाट

दिनांक 01.07.2016 की अतिवृष्टि से हुई अहैतुक सहायता वितरण सूची तहसील डीडीहाट

क्र० सं०	प्रभावित का नाम / पिता पति का नाम	क्र० सं०	प्रभावित का नाम / पिता पति का नाम
1	चन्द्रबल्लभ पुत्र हरीदत्त ग्राम बस्तडी	2	रेवतीदेवी पत्नी डिगरदेव ग्राम बस्तडी
3	हरुलीदेवी पत्नी माधवानन्द ग्राम बस्तडी	4	मोहनचन्द्र पुत्र हरीदत्त ग्राम बस्तडी
5	केशवदत्त पुत्र विशानदत्त ग्राम बस्तडी	6	चन्द्रबल्लभ पुत्र ईश्वरीदत्त ग्राम बस्तडी
7	विशानदत्त पुत्र उमापति ग्राम बस्तडी	8	लीलादेवी पत्नी जहदसिंह ग्राम पत्थरकोटमल्ला

10	कृष्णानन्द पुत्र मुरलीधर ग्राम बस्तडी	10	कृष्णानन्द पुत्र नन्दकिशोर ग्राम बस्तडी
11	मणेशदत्त पुत्र त्रिलोचन ग्राम बस्तडी	12	हेमा भट्ट पत्नी जगदीश चन्द्र ग्राम बस्तडी
13	विजयप्रसाद पुत्र शेरराम ग्राम बस्तडी	14	प्रतापराज पुत्र बुन्धीराम ग्राम बस्तडी
15	जगतसिंह पुत्र किशनसिंह ग्राम उडमा	16	लक्ष्मणसिंह पुत्र गम्भीरसिंह ग्राम उडमा
17	चन्द्रराम पुत्र मदनराम ग्राम उडमा	18	रमेशराम पुत्र पदीराम ग्राम उडमा
19	हरीशराम पुत्र पदीराम ग्राम उडमा	19	हरीशराम पुत्र पदीराम ग्राम उडमा
21	पुष्करराम पुत्र पदीराम ग्राम उडमा	22	गोविन्द बल्लभ पुत्र जयदेव ग्राम पत्थरकोटमल्ला
23	त्रिलोकसिंह पुत्र प्रतापसिंह ग्राम उडमा	24	जीतसिंह पुत्र घनसिंह ग्राम सिरौली
25	आनसिंह पुत्र नरसिंह ग्राम सिरौली	26	मोहनचन्द्र पुत्र विशानदत्त ग्राम बस्तडी
27	सरोजकुमार पुत्र माधवानन्द ग्राम बस्तडी	28	पुष्पादेवी पत्नी रघुवरदत्त ग्राम बस्तडी
29	दामोदर भट्ट पुत्र बालादत्त ग्राम बस्तडी	30	कविताभट्ट पुत्र गिरीशचन्द्र ग्राम बस्तडी
31	मनोज भट्ट पुत्र जगदीशचन्द्र ग्राम बस्तडी	32	बसन्तीदेवी पत्नी चन्द्रबल्लभ ग्राम बस्तडी
33	आनीदेवी पत्नी चूडामणी ग्राम बस्तडी	34	मुवनचन्द्र पुत्र देवीदत्त ग्राम बस्तडी
35	पुष्करराज पुत्र मुरलीधर ग्राम बस्तडी	36	बालादत्त पुत्र हरीदत्त ग्राम बस्तडी
37	दानीराम पुत्र बुन्धीदेवराम ग्राम बस्तडी	38	मागीरथी देवी पत्नी शेरराम ग्राम बस्तडी
39	खडकसिंह पुत्र मोतीसिंह ग्राम मझेडा	40	केशवदत्त पुत्र बालादत्त ग्राम ताल
41	प्रकाश चन्द्र भट्ट पुत्र केशवदत्त ग्राम ताल	42	प्रयागदत्त पुत्र केशवदत्त ग्राम ताल
43	किशोर चन्द्र पुत्र केशवदत्त ग्राम ताल	44	पार्वतीदेवी पत्नी रामदत्त ग्राम बस्तडी
45	गोविन्द्रबल्लभ पुत्र नारायणदत्त ग्राम बस्तडी	46	दयानन्द पुत्र मायादत्त ग्राम बस्तडी
47	सैमादेवी पत्नी मायादत्त ग्राम बस्तडी		

नोट- समस्त उपरोक्त प्रमावित व्यक्तियों को अहतुक सहायता प्रति परिवार 3800.00 ₹ कुल 178600.00 ₹ की धनराशि वितरित की जा चुकी है।

दिनांक 01.07.2016 की अतिवृष्टि से हुई मकानक्षति/पशुहानि का वितरण सूची तहसील डीडीहाट

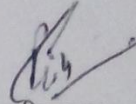
क्र० सं०	प्रमावित का नाम/पिता पति का नाम	मकान क्षति	मकान क्षतिग्रस्त की वितरित धनराशि	पशुहानि		चैक संख्या	वितरित की गयी धनराशि
				छोटे	बड़े		
1	चन्द्रबल्लभ पुत्र हरीदत्त ग्राम बस्तडी	मकान पूर्णक्षति	101900.00	10 बकरियां	08 गाय	781512	90000.00
2	रेवतीदेवी पत्नी डिगरदेव ग्राम बस्तडी	मकान पूर्णक्षति	101900.00	-	03 गाय	781517	90000.00
3	हरुलीदेवी पत्नी माधवानन्द ग्राम बस्तडी	मकान पूर्णक्षति	101900.00	-	02 भैस	781513	60000.00
4	मोहनचन्द्र पुत्र हरीदत्त ग्राम बस्तडी	मकान पूर्णक्षति	101900.00	08 बकरियां	02 भैस 04 गाय 02 बैल	781518	90000.00
5	केशवदत्त पुत्र विशानदत्त ग्राम बस्तडी	मकान पूर्णक्षति	101900.00	07 बकरियां	02 भैस 04 गाय	781516	90000.00
6	चन्द्रबल्लभ पुत्र ईश्वरीदत्त ग्राम बस्तडी	मकान पूर्णक्षति	101900.00	-	03 गाय	781515	90000.00
7	लीलादेवी पत्नी जहदसिंह ग्राम पत्थरकोट मल्ला	मकान पूर्णक्षति	101900.00	-	02 भैस 01 गाय	781514	90000.00
8	विक्रम सिंह पुत्र जहद सिंह ग्राम पत्थरकोट मल्ला	मकान पूर्ण क्षति	101900.00	10 बकरिया	-	781519	30000.00
9	बसन्ती देवी पत्नी चन्द्र बल्लभ ग्राम बस्तडी	मकान आंशिक क्षति	5200.00	-	-	-	-
10	दामोदर पुत्र बाला दत्त ग्राम बस्तडी	मकान आंशिक क्षति	5200.00	-	-	-	-
11	कविता पत्नी गिरीश चन्द्र ग्राम बस्तडी	मकान आंशिक क्षति	5200.00	-	-	-	-
12	मनोज, राकेश, गुडिया पुत्र/पुत्री जगदीश चन्द्र ग्राम बस्तडी	मकान आंशिक क्षति	5200.00	-	-	-	-
13	विशानदत्त पुत्र उमापति ग्राम बस्तडी	मकान पूर्णक्षति	101900.00	-	-	-	-
14	पुष्पा पत्नी रघुवर दत्त ग्राम बस्तडी	मकान आंशिक क्षति	5200.00	-	-	-	-
15	पार्वती देवी पत्नी रामदत्त ग्राम बस्तडी	मकान आंशिक क्षति	5200.00	-	-	-	-
	योग -		948300.00	-	68	-	630000.00

1. प्रभावित ग्रामों की संख्या -09
2. प्रभावित परिवार - 123।
3. कुल मृतक -14।
4. कुल घायल - 06।
5. कुल ज्ञापता - 09।
6. कुल पूर्ण क्षतिग्रस्त भवन - 09
7. कुल आंशिक क्षतिग्रस्त भवन- 06
8. कुल वितरित की गयी धनराशि - 6556900.00 ₹

नोट - इसके अतिरिक्त राजस्व विभाग की 04 टीमे जांच कार्य में लगी हुयी है। जांच एवं राहत कार्य गतिमान है। शिविरों एवं टैन्टो में रह रहे लोगो को भोजन व अन्य राहत सामग्री प्रदान की जा रही है।

प्रतिलिपि :- आयुक्त महोदय, कुमाँयु मण्डल नैनीताल को सूचनार्थ सादर प्रेषित।

भवदीय,
तहसीलदार,
डीडीहाट।


तहसीलदार,
डीडीहाट।

संख्या

कार्यालय तहसीलदार डीडीहाट।
/ दैवी आपदा-सूचना / 2016-17

दिनांक जुलाई 07, 2016

सेवा में,

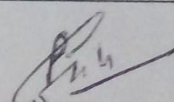
जिलाधिकारी
पिथौरागढ़।

विषय:- दिनांक 01.07.2016 की आपदा प्रभावित परिवारों के विवरण उपलब्ध कराने के सम्बन्ध में।

महोदय,

उपरोक्त विषयक तहसील डीडीहाट अन्तर्गत आज दिनांक तक राजस्व उप निरीक्षको से प्राप्त सूचना के अनुसार दिनांक 01.07.2016 को आपदा से प्रभावित परिवारों को आज दिनांक 07-07-2016 तक निम्नानुसार धनराशि के बैंक वितरित किये गये हैं।

क्र०सं०	वितरित गयी सहायता	संख्या	वितरित की गयी धनराशि
1	मृतक	12	48,00,000.00
2	अहैतुक	97	36,8,600.00
3	आंशिक	16	83,200.00
4	पूर्ण	15	15,28,500.00
5	तीक्ष्ण	12	12,22,800.00
6	पशुहानि	85	7,4,7,000.00
	योग:-	237	87,50,100.00


तहसीलदार,
डीडीहाट।

2,73,500 / 30-6-15 को पहले वितरण के चयन के

Nalas in the hilly slopes make the shape of vertical cone, where lot of debris, mud and stones are deposited in the Nala valley areas. The ancient time Glaciers had also deposited lot of deposition and have formed U-shaped ghaties. Most of the agricultural activities take place in these ghati areas and surrounding slopes. Even villages settlements are there along such areas/slopes. It can be seen that all these villages are established on earlier Landslide zones and on a debris.

All these villages/ houses are constructed by stones and mud. The roofing is rcc slabs. The building structures are generally old fashioned and without any provision for modern techniques

The reasons of the disaster can be explained as:

In the night cloud burst took place with thunder storm and the debris made a landslide formation. The height of the deposition was even upto 25-30 meter.

Other Secondary Threats in the Affected Area:

- This type of disasters can again be repeated affecting surrounding village located along the slopes and valley especially Urma and Pattharkote villages.
- The debris dumped of slope cutting for road construction on the top of villages makes the entire slope more vulnerable to landslides.
- Buildings are Kuchcha, made of stones and mud mortar, covered with (Patthar slates) are weak to bear the earthquake shocks.
- A repetition of a heavy spell of rains the deposited debris along hill side can repeat a similar disasters along the slope, particularly the villages Urma and Pattharkote are at risk.

Suggestions/Recommendations:

- The affected villages should immediately be rehabilitated at a much safer sites near Singali village.
- The landslide area near villages needs a stabilization treatment.
- These villagers locations area located near Main Central Thrust, Berinag Thrust, hence, is more vulnerable to earthquakes and landslides.
- Disaster mitigation programmes should be taken up immediately.
- Awareness programmes for landslides/ earthquakes/ heavy rains/ cloud bursts should be taken up immediately.
- Decision makers workshops for Disaster Managers should be organized frequently throughout at district levels or at the Uttarakhand Academy of Administratioon at Nainital.
- Unfailing communication network between villagers and district authorities have to be established.
- Community Radio/Radio sets be provided.
- Social media groups should be activated among village clusters.
- Government officials have been generally provided a BSNL Network mobiles. Some private channels Idea, Airtel, Vodafone etc are sometimes crucial when BSNL fails in the region.

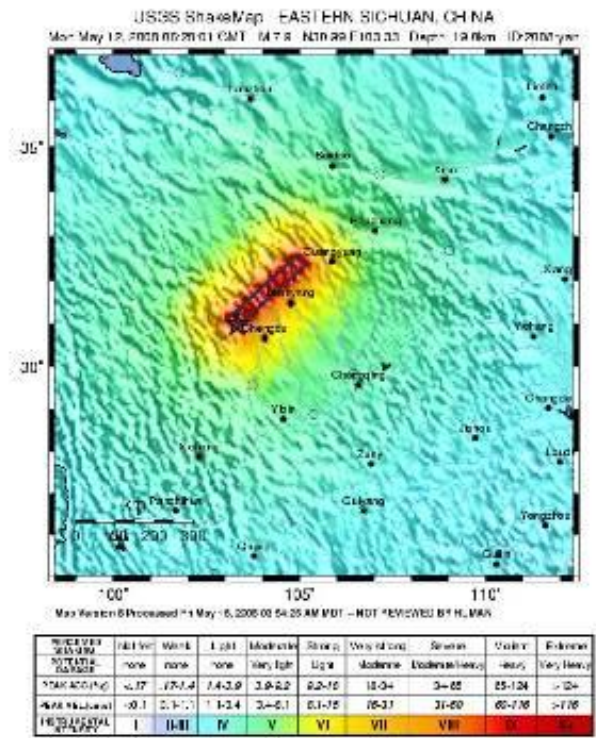
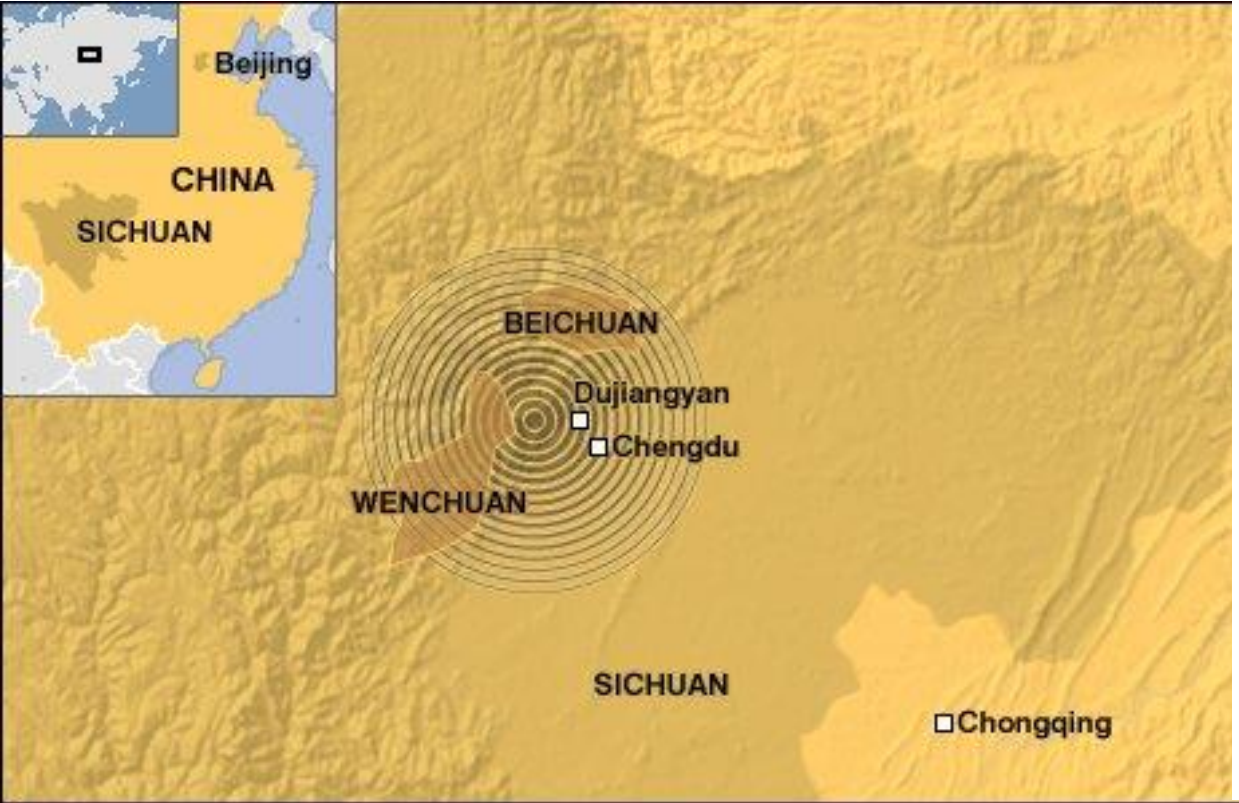
- Coordination and cooperation among civil authorities, Army, Paramilitary, NDRF, SDRF and other actors in Disaster Management and the community based organizations have to be established as a preparedness measure.
- Regular workshops in cooperation and coordinators in Disaster management should be conducted for civil authorities, NDRF, SDRF, Paramilitary and Defence Forces at Uttarakhand Academy of Administration at Nainital.
- SDRF have to be strengthened in number, tools and technology.
- SDRF/NDRF units have to be established cluster wise throughout the disaster prone areas of the State.
- The response time have to be brought down to less than 30 minutes, this is possible only when the CBOs and Village level Groups are trained as a First Responder.
- Heli Pads all along the State be identified and marked with co-ordinates

A case study of EQ



China's Approach to Sichuan Earthquake... ?

Just think of.....!!!!



2:28 PM, May 12th, 2008.

Sichuan province of China was jolted by an earthquake of magnitude 7.9. The epicenter of the earthquake, Wenchuan, is about 90 miles from Chengdu, the provincial capital.

More than 4.7 million houses collapsed or heavily damaged.



Cities close to the epicenter were flattened.



Landslides worsened the situation creating 34 lakes.



Large number of people were rendered homeless.





Millions of people lost their beloved ones, their homes, their belongings.

**Yet there was
no looting.
No complaints.**



**Just people
helping each
other.**



Within hours, people rushed to rescue. There were long queues for blood donation; people waited for hours to donate blood and within 24 hours all major blood banks ran out storage space.



**Medical workers
provided care under
extreme conditions.**





They even delivered many new born babies on the parking lot.



Wen Jiabao, 66, the Chinese Prime Minister, boarded on a plane 30 minutes after the earthquake, and arrived in disaster area in 2 hours. He was the Chief of the Rescue Operation since then, working almost around clock at the frontline with rescue workers.



1,1000 paratroopers started boarding airplanes 2 hours after earthquake.





Despite heavy rain, high wind and thick cloud, they jumped from over 20,000 feet height in remote mountain areas where they did not even know if there would be a place for them to land.

The first to jump off the plane was Senior Colonel Li Zhenbo, 51.





Soldiers and rescue workers worked around the clock to rescue people still buried.





Unable to transport heavy machineries to the remote areas since roads were buried by landslides, they had to use hands to move tons of concrete.





People rushed to donate money. Many rich people donated millions.



**He saw the news and went to donate 5 Yuan in the morning.
He said people in the disaster area were worse off than him because their lives were threatened.
He came back in the afternoon, donated another 100 Yuan (\$14).**



A 5 year old boy was rescued after being buried under rubble for 24 hours.



**His left hand was broken,
but he smiled and saluted
to his rescuers.**



His smile made everybody cry.



Yuan Wentin, 26, first grade teacher.

When the earthquake struck, she rushed to save her stunned students from classroom on the 3rd floor.

She managed to pull out most of them, the building however collapsed when she was trying to pull out the last few.



**At the last moment of her life, she used her body to shield the students from falling concrete.
Many teachers did the same thing.
They are heroes of Sichuan.**

**This high school student was rescued from the collapsed building. She lost both her legs, and her both hands are broken. The rescue workers were all in tears when they saw this. She smiled to them.....
“Be Brave!”**





**PERFECT CASE OF
COORDINATION
&
CO-OPERATION
TO DEAL WITH DISASTER**



JAPAN

Tsunami & Earthquake

March, 2011











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成瀬田舞臺 入館 (1962.4.23)













**BUT UNDER ALL THESE
CONDITIONS**

WORLD CAN LEARN FROM JAPAN

Learning from Japan earthquake

10 things to learn from Japan

1. THE CALM

A photograph showing two women in profile, facing each other. They are standing in the rain, with water droplets visible on their hair and clothing. The woman on the left is wearing a dark jacket and glasses, and is holding a mobile phone to her ear. The woman on the right is wearing a light-colored jacket and glasses. The background is a blurred, wet surface, possibly a wall or a window. The overall mood is somber and reflective.

**Not a single visual of chest-beating or wild grief.
Sorrow itself has been elevated.**

Learning from Japan earthquake

お知らせ
で運転を見合わせでい

2. THE DIGNITY



Disciplined queues for water

Learning from Japan earthquake

3. THE ABILITY

reevallpapermania.blogspot.com



The incredible architects, for instance. Buildings swayed but didn't fall.

Learning from Japan earthquake

4. THE GRACE



People bought only what they needed for the present, so everybody could get something.

Learning from Japan earthquake

5. THE ORDER



No looting in shops. No honking and no overtaking on the roads. Just Understanding.

Learning from Japan earthquake

6. THE SACRIFICE



Learning from Japan earthquake

7. THE TRAINING



The old and the children, everyone knew exactly what to do. And they did just that.

Learning from Japan earthquake

An aerial photograph showing a coastal city with several tall buildings. A massive tsunami wave is crashing onto the shore, with white foam and dark water. The city is built on a hillside, and the ocean is visible in the foreground.

8. THE TENDERNESS

Restaurants cut prices.

9. THE MEDIA

No silly reporters.
Only calm reportage.

Learning from Japan earthquake

10

THE CONSCIENCE

When the power went off in a store, people put things back on the shelves and left quietly

Futuristic Approach for DM

- **Supply Chain Management advance technology using**
- **Programmes for Community participation and Public awareness**
- **Emphasis on forecasting and warning using advance technology**
- **Updating of State/DDMAP/Contingency Plans**

- **Role players in Disaster Management:**
 - People: Individuals, House- holds, Volunteers.**
 - Grampanchayat: Panchayat secretary, Panchayati members**
- **Village elders: leaders, Doctors, Engineers, Teachers, Retired army and police personal.**

- **Unit of National Disaster Response Force must be at Uttarakhand**

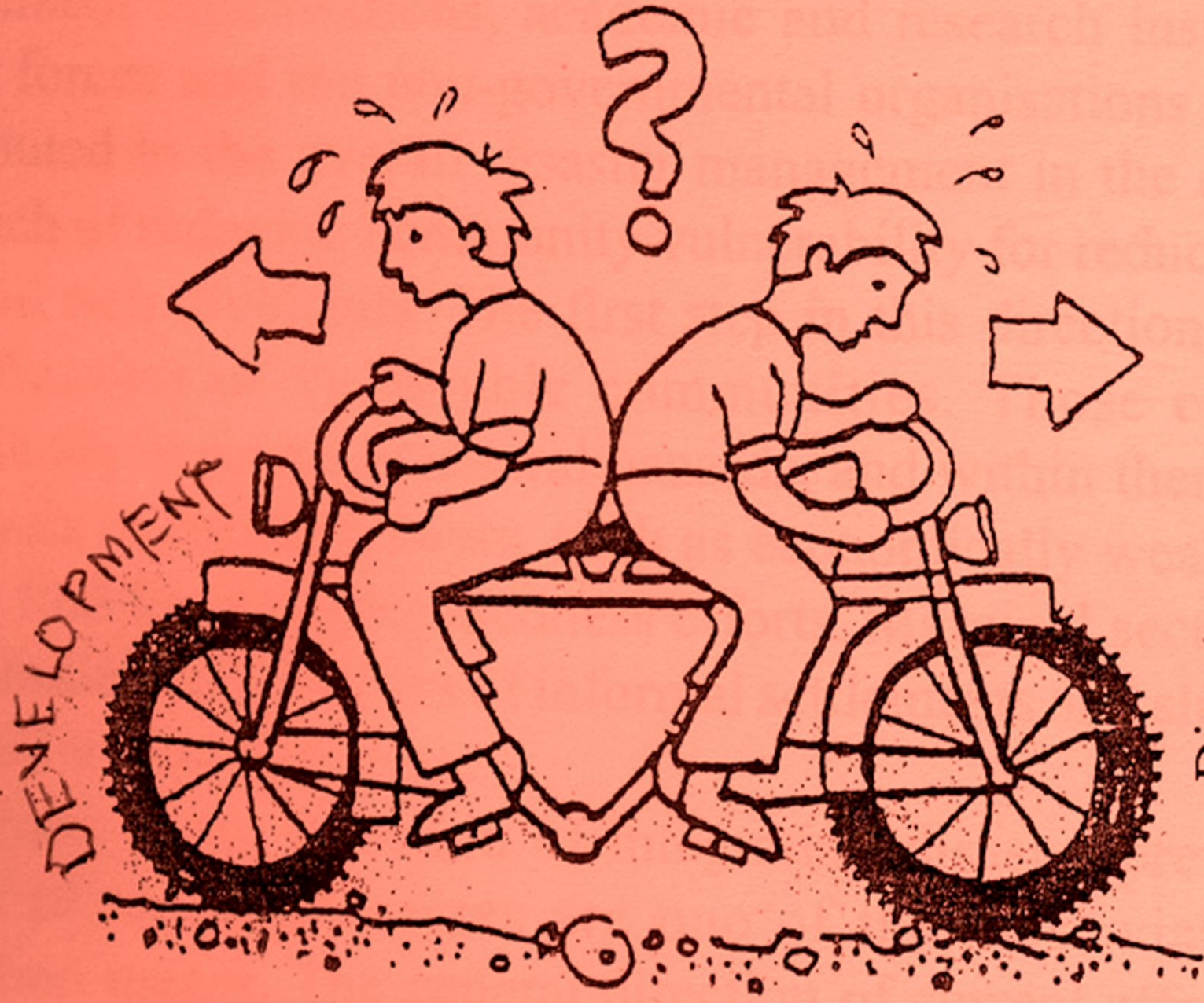


- **Strengthening to SDRF of Uttarakhand state.**
- **Implementation of DM Act,2005 and some changes should be done in DM Act 2005 by Higher Authority of Uttarakhand.**
- **Change of focus from Relief centric to holistic approach**
- **Key role of educational and professional institutions for mass education and awareness.**
- **Coordinated, timely and effective Response.**

- Formation groups of Social media
- Formation of VITs in villages



LESSONS LEARNT FROM THE RECENT DISASTERS



Disaster
Management



KedarNath Rescue by ITBP.mp4

Thank you