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MASS GEOSCIENCE AWARENESS AND COMMUNICATION COULD HAVE SAVED THOUSANDS KILLED IN HIMALAYAN FLASH FLOODS AND ASIAN TSUNAMI

From 2000 summer to 2013 Himalayan Indian States Himachal Pradesh and Uttarakhand have witnessed devastating flash floods.

On a fateful summer mid night in the year 2000, residents of a remote Upper Satluj Valley in Himachal used the fast developing telephone landlines to advise their friends living downstream to move away to higher and safer places as the river was in a devastating unheard and unseen spree. Public effort like this at disaster mitigation was unheard of but commendable. Thousands were saved but some who returned in disbelief after about 90 minutes of waiting at higher places were washed off. About 200 died but scores of bridges and powerhouses were smashed leaving a fast developing Himachal Pradesh in utter shock and chaos. In this age of satellite monitoring there was no clue about the source of the flash floods from upper reaches of the Satluj River in Tibet.

Five years later a landslide dammed lake in Parechu River in Tibet under media watch for nearly full one year burst in day time. Devastation was big but lives lost were almost negligible. A colleague in Geological Survey of India camping in Spiti River at Leo captured live the pictures of massive flash flood with all the muck in it smashing the Leo bridge though he was left high and dry on the wrong side of his field camp. Government circles wanting to build a barrier dam to stem the force of similar future flash floods blindly assumed the previous flash flood also to have been from Parechu lake in Tibet though Geologists had no evidence if it had come from Parechu. In all probably it was from the main river Satluj. The case is typical of an official confusion and misdirected action in spite of having geologists and remote sensing know how but public being aware and acting within the limited reaction time available.

June 2013 flash floods in the Himalayan State of Uttarakhand - the land of most revered and famous pilgrim sites - killed many thousands of locals and devotees as well as tourists. To retrieve the dead bodies out of the debris became impossible. Millions were left homeless. The deaths could have been much lesser had our remote sensing data been available at the grass roots to the end user the tax payer. Advice given in geological reports obtained from the Geological Survey of India in early nineties almost remained unused. Scores of rest houses and shops near the ancient Kedarnath temple had come up in the course of the water. Had geologists been listened to these could have been higher up and totally safe.

The only solution is that technical knowledge be communicated in an intelligible language to the masses, media, officials and elected representatives to avert the colossal loss of lives, homes and habitation. This way unheard of human suffering and trauma could have been averted. It’s a pity that formal geological education is imparted in less than ten percent colleges and universities in India. Only way to fight natural disasters is

through mass geosciences communication and awareness as a basic geoethical obligation to the tax payer. The print and visual media and mini museums of geosciences at every village level are the only alternative to give socially useful geological knowledge as a healthy geoethical practice.

Lessons learnt from the Asian Tsunami of December 26, 2004 seem to have been lost. A school girl from Europe saved 200 because she knew from her lessons it was a tsunami and was quick enough to raise an alarm. A village chief had seen a National Geographical program in Thailand and he reacted in time to save over 2000 persons. In contrast the scientific community and establishments across the world who knew already in the 8th minute after about the 9.3 scale quake in Indian Ocean did not care to communicate in this age of split second communication. It is a poetic justice that not merely the one dozen countries of Indian Ocean but 52 countries from across world lost nearly 0.3 million lives. Those who did not act fast enough within the reaction time of 15 minutes to several hours the south Asian tsunami took to travel, were guilty of a gross geoethical failure. Unwittingly they let lose huge human suffering without intending to do so.

Governments across the world have ignored their geoethical obligations to educate through applied geosciences and scientifically manage the flash floods and tsunamis. Scientific and social communities need to focus on using geoscientific knowledge, experience and understanding locally and internationally to plan, re-plan and relocate their urbanizations to safer areas and also warn in time and effectively. South Asian experience shows that public and even young children can act with a geoethical awareness and conscience but the high tech officialdom always fails to preempt or minimize disasters.

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