

## Past Is the Key to the Present

**Rahul Verma\***

*Mining & geological engineering, Botswana international university of science and technology, Botswana*

**\*Corresponding Author:** Rahul Verma, Mining & geological engineering, Botswana international university of science and technology, Botswana.

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The title of my write up may surprise you a bit. But the fact is that the present day geo-environmental scenario is totally a repercussion of the events that took place in the past. I will cite two examples only, considering the limit of the write up.

The first example is the flooding in the river Brahmaputra during monsoon and post monsoon times. The mighty Brahmaputra creates havoc in Arunachal and Assam. The present-day floods are due to the plate collision phenomena that took place since Miocene times. The Indian plate is still subducting under the Eurasian plate and we all know that Himalaya is still rising. This event gave rise to the Geosynclinal set up in the region. The prominent lithology on either side of Brahmaputra is consisting of sedimentary rocks of Tertiary Era. The mighty Brahmaputra passes through these sedimentary terrains. These sedimentary rocks viz. Sandstone, Shale and Siltstones are very prone to erosion. A huge amount of eroded sediments is carried through the tributaries of Brahmaputra and ultimately, they are deposited in the riverbeds. The situation is analogous to the story of the thirsty crow” who was putting pebbles in the pot to raise the level of water. The same situation is practically found in the Brahmaputra riverbed, that gets over flooded due to the excess sediment load in the basin. Needless to say, that if we have to control the floods in Assam valley, we must take measures to check erosion in the upper reaches of the Brahmaputra and its tributaries by vigorous plantation, check dams etc.

Another example is the frequency of landslides in Mizoram. Mizoram (Lushai Hills) are a part of geosyncline which was later filled with the sedimentary rocks ranging from Middle Miocene to Late Pliocene. These rocks are subject to stress built by the collision of Indian plate (West) and Burmese Plate (East). The whole region is a part of “Indo-Burmese Mobile Belt”. The stress generated through the plate collision is released as high dipping folded rocks (the limbs dipping east and westward). By virtue of the plate collision, the Mizoram Hills trend north south.

The whole region experiences, frequent earthquakes ranging in magnitude from 1 to 5 on Richter scale. The geology of the whole region is typically characterized by moderate to high dipping strata with large number of joint sets and system. These secondary discontinuities are result of the strain built up due to plate collision of Indian and Burmese (Myanmar plate).

As a result, the whole region falls in highest seismic zone and under the conjugate effect of lithology, structure (especially the joint sets), relief, seismicity, rainfall and land use cover and land use pattern, the region is adversely affected by frequent slope failures and resultant landslides.

So, we can say that what is happening today is the reflection of past events, no matter how old.

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