Geological Truth about Climate Change and Geo-Meteorology – H.S.M. Prakash, Bengaluru (E: dr.hsmprakash@rediffmail.com)

Just concluded SW monsoon has created havoc all over India and also in neighboring countries like Bangladesh, Nepal, Pakistan, Yemen, Oman, Bahrain etc. But, it has not done any major damage as feared, in Kodagu and Kerala areas. These two areas suffered unprecedented heavy losses in 2018 and 2019 due to deluge and massive landslides leading to severe damage to terrain, drainage, plantations and townships resulting in a colossal loss of nearly 2 lakh crore rupees in both areas. Added to this, Belgaum, Koppal, part of Dharwar and Haveri districts of NW Karnataka also suffered due to heavy floods in 2019. The cause for this major effect was studied intensively and extensively by the author with the help of some scientific apps on a daily basis and the actual cause for these events became very clear by April 2019. Accordingly based on my studies, I gave a forewarning through media in April 2019 that the events of 2018 are going to recur in Kodagu and Kerala. The Govt. machinery and local Kodagu public took it seriously and made necessary preparations with enough care as per my warning. Heavy damage and massive slides occurred in July, August, September and October 2019 in Kodagu and surrounding areas.

Encouraged by this result of my studies I continued my tracking the global seismic and volcanic activities in 2020 also I found in early 2020 that cause which was hyperactive in 2018 and 2019 is very silent in 2020. Based on this observation I told through media in May 2020 that 2018 and 2019 events are not going to happen in the monsoon period of 2020. Accordingly, no major deluge or landslide damage to terrain has happened in 2020. This is a success to my concept of linkage between global geological events and development and meteorological changes which is called climate change. I have studied the reasons for climate change in the last three years in the light of my professional knowledge of Volcanism, Plate Tectonics, Marine Geology, Oceanography, Palaeo-climate, Igneous Petrology and their connection with climate change.

Earth systems science deals with four spheres called lithosphere, hydrosphere, atmosphere and biosphere. There is a very close impact, influence and interaction between these four spheres and especially any major change in the lithosphere such as a super volcanic eruption can have telling impact on atmosphere, hydrosphere and biosphere. As a student and practitioner of Earth Sciences over the last forty years, I have seen that palaeo-climate has a clue to the present climate change. Study of historical geology over the last 4500 millions of years of Earth's existence reveals that the past catastrophes were driven by natural reasons and not anthropogenic reasons. CO₂ and green house effect theory is making rounds only in the last 30 years and they were not thought of in earlier centuries.

Thus, the geological cause which is responsible for the damage in 2018 and 2019 in Kodagu is the massive volcanic eruptions from Piton de la fournaise volcano (Reunion Islands, 35 km. south of Mauritius) and Mt. Kilauea volcano, Hawaii Islands in 2018 and 2019 for several weeks which generated enormous quantities of steam from sea water. The same cause is absent in 2020 and hence there is no such effect in Kodagu and surrounding areas. In fact, Reunion islands and Hawaiian Islands are two of the forty major hotspots in the world

besides regular volcanic eruptions. This success of my concept of the connection between geology and meteorology in 2019 and 2020 has convincingly inspired me to propose a new sub-discipline which may be termed as Geo-meteorology. This is a new line of study and research proposed for the first time. It is a major hypothesis in Geology after Plate tectonics (proposed in 1960 by Hess debated for 20 years and finally accepted by 1980)

Geo-meteorology brings out the connection between aerial volcanism as well as submarine volcanism and meteorology. In fact, there are thousands of active volcanoes under water especially along mid-oceanic rises which are actually obduction zones. We, the earth scientists all over the world are not able to monitor them as they are under sea water. But, I, based on indirect clues made an attempt to assess the kind and extent of sea floor seismicity and volcanicity on a day to day basis to know the possible volume of vapor that can be generated by the interaction of hot lava (1000° c) with sea water. This vapor enters atmosphere to form clouds suddenly and moves in the direction of the prevailing winds and causes precipitation in nearby or far off countries as the case may be. The clouds can move freely especially in IntraTropical Convergence zone (ITCZ).

Besides Kodagu – Kerala example of 2018, 2019 and 2020, two cyclones in north Indian ocean formed in March / April 2019 called Ida and Kenneth which affected Zimbabwe, Malawi and Mozambique are also a resultant of Fournaise volcanic eruption. There are many such examples in the past years in the world. Readers may kindly refer to Tambora (1815), Krakatoa (1883) and Kavachi (submarine volcano). A similar major eruption (VEI4) of Kilauea, Hawaii and massive deluge and landslides had occurred in 1924 AD.

This study is made with a focus on Kodagu – Kerala region for 2018-2020 period. It is possible to have similar focus in other countries and their surrounding areas with volcanic activity. Thus, it requires more and more focused studies in other countries by respective earth scientists. I am sure, a number of research projects will be taken up in all countries by their government departments and universities to understand this utmost important issue of great social concern.

This hypothesis of Geo-meteorology, according to me, supercedes all other earlier hypotheses on climate change. The green house effect theory has been rejected by many scientists all over the world. UN IPCC reports are called to question. One projection by that report given in 2000 and repeated in later years that by 2020, many coastal port cities will be submerged due to sea level rise resulting due to glacier melting due to global warming has not happened.

Thus, there is a need to understand climate science better. I, as an earth scientist have been emphasizing on the geological truth about climate change. It is finally earth science that can give answers to all problems related to the Earth. We have to realize one thing that atmosphere does not have independent existence. It depends on lithosphere (eruption) and hydrosphere (evaporation). This hypothesis will be helpful in forecasting extreme weather events. The author would be happy to enter into a discussion/conversation with interested colleagues in view of the new concept proposed.

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