

Effective methods against natural shock-wave disasters and their hot evaporated gases

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All natural huge disasters of earthquake, volcano and asteroid-impact which are caused by shock-waves of extreme states more than rapid sound-wave (Miura, 1996), change continuously the Earth system and life substances for 4.6 billion years to be formed present images of different broken sites and multi-kinds of living entity. In active planet Earth with complicated systems, expected strategy for disaster risk reduction and resilience are summarized for as follows:

1) We cannot stop artificially any natural disasters of earthquake and volcano with rapid shock-waves on active Earth, whereas any underground changes after the shock-waves with larger natural disasters can be observed to be developed by in-situ observation and data-accumulation. However, asteroid impacts can be tracked and controlled by the extraterrestrial orbits before the shocked collisions to our Earth. We can avoid Asteroid collisions with higher costs and technological long-term projects surely, which will be equivalent to plan with huge expenses to be protected human extinction in future.

2) Present Earth combined with different blocks and many living substances with different locations have been changed abruptly with one developed direction by strong natural disasters related with shock-wave processes (including asteroids impacts caused to any mass extinction at the previous geological boundaries).

3) We can develop continuously disaster-resilience due to less prevention against larger-scale natural disasters caused by shock-waves. In this sense, any strategy, expenses and emigration are expected to be planned deeply. For example, we should make progressive plans to use effectively less volcanic areas (cf. western main-island etc.).

4) Compared any larger natural disasters on active Earth, any asteroid-collisions can be controlled by extraterrestrial tracking-and attacking- stations in other celestial bodies before the entry to the air or surface.

5) The effective reduction strategy of global climate-warming caused by industry-related high temperature gases of carbon dioxides should be applied globally by continuous changes without any stopped disposal plans, which are considered to be similar significant developments without any stopped disposals (Miura, 2013, 2014, 2015) in active planet and human life effectively.

References: Miura Y.(1996): Shock wave handbook (Springer). p.1073-1209. Miura Y. (2013): Japanese Patent. Miura Y. (2014). Am. Chem. Soc. , 248th, p.19675. 72. Miura Y. (2015):Tokyo Conference on International Study for Disaster Risk Reduction and Resilience (Univ. Tokyo),No.17.

Keywords: Shock wave, Disaster, Effective methods, Volcano, Hot carbon dioxides, Meteoritic collisions