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Advancing Geology, Building an Ecological Civilization

I wrote this article in memory of all over the world people who suffered the disaster, meanwhile encourage the people at my age to be brave as our fathers & mothers.

The universe is vast and boundless; element and energy collide and merge into each other. When the light of a star breaks through the darkness like a sword, a "young girl", blue and brilliant, emerges from the warm rays of sunlight. Thereupon we have the land, and the world. We come from ancient oceans, and it is the land that enables us to walk upright; it is the soil that nourishes today's achievements. Through their toil, our forefathers created a new era. The steam engine has enabled the world to run; the net has made the mind fly. We human beings cry out proudly at the top of mountains: "We are the masters of the world."

We used to think that we could rely on the achievements of our ancestors, just as ships rest peacefully in harbors. Reality, however, is not going that way. Alarm whistle was going, horror-struck and helpless cry broke out near the border of a ear like a nightmare, All was quiet, but sudden the terra split a mountainside slide. Only seconds, this grand city of historical value disappeared, leaving only ashes and debris. 242,419 people lay dead or dying, along with another 164,581 people who were severely injured. In 7,218 households, all members of the family were killed by the earthquake; direct economic loss was above 10 billion. It isn't the last day, but an earthquake broke out in the sleeping city of Tangshan in China on July 28, 1976. With a 7.8 magnitude and the intensity of 11 at the epicenter, the power of this earthquake was as strong as 400 atomic bomb broke out in Hiroshima suddenly exploded in the earth's crust 16 kilometers beneath its surface, making it the deadliest earthquake of the twentieth century. Now I 'm still feeling agony deeply and pipe my eye for Ma Xirong, who was the first to forecast that an earthquake would hit Tangshan .Feeling his great pain when vibrating his mum's blood-soaked clothes, sobbing out he had forecasted the earthquake before, I couldn't control myself.

Recently we received yet another shock: while we were dreaming of a promising future, the tsunami roared in from the Indian Ocean, swallowing up homes and making the seaside a watery hell. In this calamity some 300 thousand men and women were drowned; millions of refugees needed urgent aid and innumerable families became homeless.

Nor, we now find, can we trust our food. Aquatic products like fish and shrimp are not as pure and wholesome as before. People who eat them often develop problems as serious as cancer. Moreover, the supply of seafood is shrinking due to overfishing and the warming of the sea. Meanwhile, the soil that yields crops that sustain lives can now also make people ill. The reason is heavy metals such as lead, mercury, cadmium and cobalt: they used to exist in nature at a tolerable density, but have now diffused and penetrated into the air, water and earth as a result of mining, emission of gas and sewerage irrigation. The heavy metals in the ecosystem will accumulate along the food chain that sustains human beings, who will suffer horribly from the buildup. In one small village in Guizhou province, children suddenly fall to the ground and never rise again because of the osteoporosis (one of biogeochemical disease). Fluorine in the coal mine becomes the killer, where these children once worked. Another example:

regional arsenic poisoning threatens at least 50 million people in 22 countries. In China alone, there are up to 15 million people exposed to arsenic poisoning, with tens of thousands of victims already diagnosed.

In the 250 years since the Industrial Revolution began, two World Wars have broken out; carbon dioxide density has increased by 80ppm; the average global temperature has risen 0.74 degree centigrade; glaciers in the Polar Regions and altiplanos are disappearing; animal and plant species are facing another disastrous mass extinction. Acid rain, typhoons, earthquakes and other calamities follow one upon another. I feel like shouting: "What is going on in the world?" We have begun to wonder whether we are trespassing on the prerogatives of nature or whether nature has betrayed us. However, if things kept moving in this direction, we risk the ruin of thousands of years of civilization. One day soon we may be homeless children, lost in the dust.

We used to delude ourselves that the action of any one individual would not affect the fate of the earth. Today, we are forced to count the wrongs we have done against the earth and draw bitter lessons from what we find. As human civilization evolves, our economic

system of unbridled plundering has already degraded the earth. Mining, groundwater exploitation, untreated biological and industrial waste, reckless emission of carbon dioxide from bioenergy sources, all have wracked the globe restlessly; we are paying a great price for today's achievements. Geological hazards and the threat of environmental ruin are sounding the alarm: our civilization must embrace ecological awareness.

Never before has the Chinese government regarded the building of an ecologically sound civilization as a strategy. The new initiative shows our determination to save our world and build our future. It takes the preservation of the environment as its purpose, sustainable development as its basis. This view of civilization emphasizes people's self-consciousness and self-restraint, and the relationship between human beings and nature—interdependent, each promoting the other, coexisting harmoniously.

Geological culture is a crucial part of ecological civilization; indeed, it is the basis of all civilization. No ecological problem can be solved without geological knowledge. Conversely, geological problems are the source of many environment issues. In the Daqing Oilfield, we've done a number of important pioneering

studies in connection with global warming, such as the First Scientific Drill Sampling of Land Facies in the Cretaceous. Survey statistics are also obtained from rock core data.

These data clearly indicate the alternation of glacial and interglacial periods, providing scientific evidence for the prediction of global climate trends. Geologists regard the Cretaceous as a time in which a greenhouse climate prevailed. The volume of carbon dioxide in the air was 4-8 times what it was before the Industrial Revolution, with the sea level at its peak. During the Neogene, there is a margin for carbon dioxide in the air, above which the polar ice caps will disappear and earth is very likely to enter a greenhouse state. The climate system will be radically altered. As a developing country, China is trying hard to establish a new pattern of development that will exploit science to avoid environmental pollution even as the economy booms. At the heart of this is the recognition that global warming is an urgent issue calling for a joint response by all of humanity.

Geologists help us to protect our environment, and the slogan "Work hard, keep modest, unite flexibly, and pursue progress" encourages us to overcome the difficulties. The Geosciences

colleges in China have accomplished a well-organized geoscience system. A lot of engineers were graduated from these schools, participating in the area such as mine searching, resources developing, environment protecting as well as disaster controlling. Just as our dear alumnus Premier Wen Jiabao once said: "As a geologist, I often think deeply over life, the Earth, and celestial bodies, and I care about the vital problems of resources and environment. As a leader, I must adhere to the scientific concept of development, which is human-oriented, comprehensive, coordinated and sustainable. I must always bear in mind that China has a large population but limited land, water, energy and other resources. Today, our ecological environment is under tremendous pressure. It is imperative that we develop and use our resources rationally, work to protect the ecological environment, cherish every forest, every river, every square centimeter of land, and every mining locality. We need to pursue a resource-economizing and ecologically-friendly way of development, so that humanity may live in harmony with nature forever." Those words inspire us, the successor of Geological career, to undertake projects in areas such as new energy resources exploration, environmental improvement, and disaster alarm system in a sustainable developing way. It's our duty to work hard

for the development of our great geological career, and make every contribution to a brighter future of all human beings.

Dear friends, let us take a look at our earth from a remote galaxy.

Our earth is a shining planet, beautiful but tiny, yet we all share her as our common home. It is where we are born, our eternal home. Today we are no longer infants free to take whatever we want while we are awake. To ward off disasters, and for a secure future for our homeland, let us join together to advance the earth sciences, build an ecological civilization, protect our environment, serve society, develop ourselves and create a new chapter of Anthropogenic Era!