

Testing Earth's Tolerance

By Christiana Figueres

Resilience can be found at all levels of human society. At the personal level, our capacity for resilience may determine the degree of success we experience in life. At the human interaction level, the capacity to be disappointed by someone and still be open to build anew may define the depth of human relationships we enjoy. At the organizational level, the degree to which institutions and corporations grow and prosper may depend on whether they learn from setbacks and can reinvent themselves with vigor.

But resilience is not only a human and societal strength. It is also a natural phenomenon. Organisms exposed to certain pressures can, under certain conditions, recover their original state. Natural systems may endure stressful conditions and then recuperate if they have not exceeded their limit of tolerance.

Planetary resilience has to do with the environmental carrying capacity of the Earth. The question of whether the Earth will be able to absorb ever-increasing stress and continue to provide for our well-being remains unanswered. Earth's resilience hinges on human resilience--that is, our ability to learn from our mistakes.

Let us be clear. We cannot live on this Earth without having an impact on it. All social structures of humanity have depended on the use of natural resources of the planet for their survival and comfort. However, the human footprint on Earth has deepened across the centuries. All the major components of our biosphere--the air, the oceans, the soil cover, the range of animal and plant species, and the climate system itself--have been altered by the intensity of 20th-century human exploitation of the Earth's resources.

At the root of this intensity is our explosive growth: Global population doubled between 1950 and 1987, reaching 6.1 billion at the turn of this century and an estimated 9 billion by 2050. The exponential increase is putting ever-increasing pressure on water, food, and other resources, and on the global climate system. While world population during the past 50 years has doubled, our world energy consumption has increased *fivefold* in the same amount of time.

Can we continue to exploit our natural resources at an ever-increasing pace, and still expect the planet to recover and be resilient? We don't know. Scientists are only beginning to study the concept of "environmental threshold," the notion that certain changes in environmental conditions may push an organism, a species, or a system over its limit of tolerance, initiating changes in unknown directions.

At the global level, scientists are beginning to study possible thresholds that may be a potential source of rapid future change. Most importantly, the question is being raised whether the inevitable interaction of several global thresholds (water, forest cover, soils, oceans, surface temperatures) upon each other will not push the planet beyond its current carrying capacity more abruptly than if exposed to developments that are independent of each other.

From the planet's perspective, what would change are the conditions on Earth, not the existence of the planet itself. The planet was here long before the human species evolved. Today, it holds the fragile balance that supports life as humans know it. We are endowed with more intelligence than any other species, and we face a clear choice of whether to exercise global stewardship of Earth's life-giving systems.

We are quick to recognize that resilience at the personal level is a commendable trait. We are convinced that we do better if we learn from our mistakes and adapt our actions to new

circumstances. The same is true at the planetary level. Learning from the consequences of our past behavior, we could enhance the probability of preserving the natural bounty of this planet.

Nonprofit leaders are well positioned to work not only toward improving policies from governments and corporations, but also toward shifting individual behavior. Governments and corporations have a clear role to play, but we cannot shirk all responsibility to them. When it comes to our air, our water, and the Earth itself, each citizen is liable, and hence should be committed to safeguarding the environment. Each one of us can plant a tree. Every home can be fitted with energy-saving devices. Every responsible citizen should be demanding more efficient vehicles from the manufacturers.

"Saving the planet" may seem like a challenge far too immense for each of us individually, but safeguarding the resilience of the planet is not outside our reach. Our own resilience--our ability to change our behavior based on our acknowledgement of past mistakes--can protect the planet's resilience. It is not that difficult: Just do for the planet what you would do for yourself and those you love. Be mindful as you tread.

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