

Field: Transformation towards a sustainable society in harmony with nature

Achievement: Contribution towards a sustainable world as founded in the 1972 Report titled "The Limits to Growth"

Dr. Dennis L. Meadows

Born : June 7, 1942 (Age 66)

Professor Emeritus of Systems Policy, University of New Hampshire
President, Laboratory for Interactive Learning

Summary

For humanity, the Earth is both irreplaceable and finite. The continued survival of humanity on Earth depends on its success in creating a "sustainable society." More than 30 years ago, Dr. Dennis Meadows was at the center of a research group that used scientific analysis to make this point. "The Limits to Growth" shocked the world when first published in 1972, and it continues even today to illuminate the way forward.

37 year-old warning increasingly relevant today

In an era of depleting oil reserves and growing concern about global warming, people today realize that, after all, the Earth is not unlimited, and that it is indeed finite. Efforts have also begun around the world to create a sustainable society.

It was a research team led by Dr. Dennis Meadows—at the time an associate professor of the Sloan School of Management at the Massachusetts Institute of Technology—that released this warning 37 years ago about the Earth’s limits, even in the midst of rapid economic growth after World War II.

On request from the Club of Rome, a non-profit organization with an international membership that asked what would happen to the future of the planet if the human beings continued its growth at the current rate, Dr. Meadows and his team conducted an analysis using the latest economic theory and simulation models. In 1972, the Club of Rome released the resulting report, "The Limits to Growth."

The report’s message was an enormous shock to a world in the midst of economic growth. It said that there are certain constraints on the Earth's physical capacity—including resources, environment, soil and so on—and if populations and economies were allowed to continue growing without restraint, humanity would face a crisis. It also said that in order to mitigate these risks, it would be necessary to aim at zero growth for population and the economy. Released during a period that was even more growth-oriented than today, the report had many detractors.

Nevertheless, reality has unfolded as Dr. Meadows and his team predicted, with oil crises in 1973 and 1978, rapid global population growth, the emergence of the problem global warming, and so on. Indeed, the message of "The Limits to Growth" is still valid today for worldwide efforts to deal with global environmental problems.

World model predicted conditions 100 years hence

The Club of Rome is launched in 1970 by Dr. Aurelio Peccei (at the time vice president of the Italian firm Olivetti), in order to address global issues such as resources, population, military expansion and environmental destruction. Over the years it has released many reports, but its first was "The Limits to Growth," by Dr. Meadows and his colleagues.

The Club of Rome created the "Human Risk Project" and asked Dr. Meadows to lead research on this topic, for which he assembled a research team with his late wife Donella and other young researchers. They used systems dynamics theory to create a world-scale computer model of economic activity—a simulation of the world situation 100 years hence.

The report portrayed near-future scenarios based on five variables that grew exponentially: population, food consumption, industrialization, environmental pollution and resource depletion. The analysis showed that physical constraints would make it impossible for growth to continue at the pace being experienced at the time. In particular, economic growth from industrialization and world population had a multiplier effect, resulting in negatives such as pollution, resource depletion, hunger, and so on. The pronouncement that the existing world system would eventually lead to catastrophe shocked people worldwide.

In other words, this was a "global crisis report" based on a world model that used all the scientific data available at the time. Once the report was released, in effect, the world began to test the model. In Japan, a Tokyo office of the Club of Rome and a Japan Research Team were established.

Evidence continues to grow

One could say that the real world began to move faster than the simulated world model. In October 1973, just a year after the report came out, the world was hit by an oil crisis triggered by the Fourth Arab-Israeli War. In Japan, many people were unsettled when the consumer price index rose by 23 percent in 1974.

Then global environmental problems began to surface. Efforts to better understand the desertification of agricultural land and forest destruction caused by acid rain led to advances in the natural sciences, which accelerated progress in analysis of the global environment, then it became known the human economic activity could cause global warming. The Intergovernmental Panel on Climate Change (IPCC) was established in 1988, and it has continued to conduct scientific assessments to this day.

As the world continued to change, Dr. Meadows and his colleagues continued their work of verifying "The Limits to Growth." Twenty years after their groundbreaking report, they released their second work in 1992, titled "Beyond the Limits." Using newly-compiled data, it showed that humanity had already exceeded the Earth’s carrying capacity. With 14 scenarios, Dr. Meadows’ team called for a transformation into a "sustainable society." Next came "Limits to Growth: The 30-Year Update," in 2004. In it, the authors added fresh data from the previous ten years. They showed that since 1990 gross domestic product had declined in 54 countries, and that humanity was exceeding the Earth’s carrying capacity by 20 percent in the year 2000.

With his conceptual foundations based on "The Limits to Growth", for the past 37 years Dr. Meadows has consistently called for the creation of a sustainable society. The reports never fail to offer prescriptions for the transformation into a "sustainable society." The closing commentary of the original report says that "Humanity should not lose hope in the future; the only way forward is through international debate among statesmen, policymakers and scientists about the dangers and hopes of the future governmental and human systems." This message from Dr. Meadows and the Club of Rome may well be their greatest contribution to the world.

"The Limits to Growth": Clues and Options for the Future of Humanity

1965

1968 Meeting to establish the Club of Rome

1970 Club of Rome established

1972 "The Limits to Growth" report released

UN's Environment Programme(UNEP) established

1973 First Oil Crisis

1975

1978 Second Oil Crisis

1979 Convention on Long-range Transboundary Air Pollution signed

1980

Helsinki Protocol on the Reduction of Sulphur

1985 Emissions adopted

1988 Intergovernmental Panel on Climate Change (IPCC) established

1990 IPCC First Assessment Report released

1992 "Beyond the Limits" released

1992 The Earth Summit, United Nations Conference on Environment and Development, Rio de Janeiro

1995

1997 Kyoto Protocol adopted

2000

2002 World Summit on Sustainable Development

2004 "Limits to Growth: The 30-Year Update" released

2005

2007 IPCC Fourth Assessment Report released

2010