

## **THE STATE OF THE WORLD EXECUTIVE SUMMARY- UNITED NATIONS MILLENIUM PROJECT**

The world is getting richer, healthier, better educated, more peaceful, and better connected and people are living longer, yet half the world is potentially unstable. Food prices are rising, water tables are falling, corruption and organized crime are increasing, environmental viability for our life support is diminishing, debt and economic insecurity are increasing, climate change continues, and the gap between the rich and poor continues to widen dangerously.

There is no question that the world can be far better than it is—IF we make the right decisions. When you consider the many wrong decisions and good decisions not taken—day after day and year after year around the world—it is amazing that we are still making as much progress as we are. Hence, if we can improve our decision making as individuals, groups, nations, and institutions, then the world could be surprisingly better than it is today.

Now that the Cold War seems truly cold, it is time to create a multifaceted compellingly positive view of the future toward which humanity can work. Regardless of the social divisions accentuated by the media, the awareness that we are one species, on one planet, and that it is wise to learn to live with each other is growing, as evidenced by the compassion and aid for Haiti, Pakistan, and Japan; the solidarity with democracy movements across the Arab world; the constant global communications that connect 30% of humanity via the Internet; and the growing awareness that global climate change is everyone's problem to solve.

Fifty years ago, people argued that poverty elimination was an idealistic fantasy and a waste of money; today people argue about the best ways to achieve that goal within 50 years. Twenty-five years ago, people thought that civilization would end in a nuclear World War III; today people think everyone should have access to the world's knowledge via the Internet, regardless of income or ideology.

The *2011 State of the Future* offers no guarantee of a rosy future. It documents potentials for many serious nightmares, but it also points to a range of solutions for each. If current trends in population growth, resource depletion, climate change, terrorism, organized crime, and disease continue and converge over the next 50–100 years, it is easy to imagine an unstable world with catastrophic results. If current trends in self-organization via future Internets, transnational cooperation, materials science, alternative energy, cognitive science, interreligious dialogues, synthetic biology, and nanotechnology continue and converge over the next 50–100 years, it is easy to imagine a world that works for all.

The coming biological revolution may change civilization more profoundly than did the industrial or information revolutions. The world has not come to grips with the implications of writing genetic code to create new life forms. Thirteen years ago, the concept of being dependent on Google searches was unknown to the world; today we consider it quite normal. Thirteen years from today, the concept of being dependent on synthetic life forms for medicine, food, water, and energy could also be quite normal.

### **2011 State of the Future**

#### **Where we are winning**

1. Improved water source (percent of population with access)
2. Literacy rate, adult total (percent of people age 15 and above)
3. School enrollment, secondary (percent gross)
4. Poverty headcount ratio at \$1.25 a day (PPP) (percent of population) (low- and mid-income countries)
5. Population growth (annual percent) (A drop is seen as good for some countries, bad for others)
6. GDP per capita (constant 2000 US\$)
7. Physicians (per 1,000 people) (surrogate for health care workers)
8. Internet users (per 1,000 people)
9. Infant mortality (deaths per 1,000 live births)
10. Life expectancy at birth (years)
11. Women in parliaments (percent of all members)

12. GDP per unit of energy use (constant 2000 PPP \$ per kg of oil equivalent)
13. Number of major armed conflicts (number of deaths >1,000)
14. Undernourishment (percent of population)
15. Prevalence of HIV (percent of population 15–49)
16. Countries having or thought to have plans for nuclear weapons (number)
17. Total debt service (percent of GNI) (low- and mid-income countries)
18. R&D expenditures (percent of national budget)

### **Where we are losing**

19. Carbon dioxide emissions
20. Global surface temperature anomalies
21. People voting in elections (percent of population)
22. Levels of corruption (15 largest countries)
23. People killed or injured in terrorist attacks (number)
24. Number of refugees (per 100,000 total population)

### **Where there is uncertainty**

25. Unemployment, total (percent of total labor force)
26. Non-fossil-fuel consumption (percent of total)
27. Population in countries that are free (percent of total global population)
28. Forestland (percent of all land area)

### **The world score card**

Computational biophysics can simulate the physical forces among atoms, making medical diagnostics and treatment more individually accurate. Computational biology can create computer matching programs to quickly reduce the number of possible cures for specific diseases, with millions of people donating their unused computer capacity to run the matching programs (grid computing). Computational media allows extraordinary pixel and voxel detail when zooming in and out of 3D images. Computational engineering brings together the world's available information and computer models to rapidly accelerate efficiencies in design. All these are changing the nature of science, medicine, and engineering, and their acceleration is attached to Moore's law; hence, computational everything will continue to accelerate the knowledge explosion. Tele-medicine, tele-education, and tele-everything will connect humanity, the built environment, and computational everything to address our global challenges.

The earthquakes, tsunamis, and nuclear disasters in Japan exposed the need for global, national, and local systems for resilience—the capacity to anticipate, respond to, and recover from disasters while identifying future technological and social innovations and opportunities. Related to resilience is the concept of collective intelligence—maybe the “next big thing” to help us make better decisions.

After 15 years of The Millennium Project's global futures research, it is increasingly clear that the world has the resources to address its challenges. What is not clear is whether the world will make good decisions fast enough and on the scale necessary to really address the global challenges. Hence, the world is in a race between implementing ever-increasing ways to improve the human condition and the seemingly ever-increasing complexity and scale of global problems.

So, how is the world doing in this race? What's the score so far? A review of the trends of the 28 variables used in The Millennium Project's global State of the Future Index provides a score card on humanity's performance in addressing the most important Challenges.

Some of the areas where we are losing could have quite serious impacts, such as corruption, climate change, and terrorism. Nevertheless, this selection of data indicated that 10 years from now, on balance, will be better than today.

### **Some Factors to Consider**

Atmospheric CO<sub>2</sub> is at 394.35 ppm as of May 2011, the highest in at least 2 million years. Each decade since 1970 has been warmer than the preceding one; 2010 tied 2005 as the warmest year on record. The world is warming faster than the latest IPCC projections. Even the most recent estimates may understate reality, since they do not take into account permafrost melting. According to FAO's *Livestock's Long Shadow* report, the meat industry adds 18% of human-related greenhouse gases, measured in CO<sub>2</sub> equivalent, which is higher than the transportation industry. A large reinsurance company found that 90% of 950 natural disasters in 2010 were weather-related and fit climate change models; these disasters killed 295,000 people and cost approximately \$130 billion.

## 2011 State of the Future

Population could double by 2050, with a growing number of unemployed youth and over 13 million. Just 39 years, humanity may add an additional 2.3 billion people to world population. There were 1 billion humans in 1804; 2 billion in 1927; 6 billion in 1999; and 7 billion today. China is trying to become the green-growth giant of the world; it is too big to achieve reasonable standards of living for all its people first and then clean up later. Its next Five Year Plan (2011–15) allocated \$600 billion for green growth initiatives.

Some believe the global ecosystem is crashing due to climate change, drying rivers and lakes, biodiversity loss, soil erosion, coastal dead zones, and collapsing bee populations unable to fertilize the food chain. Lester Brown in *Plan B 4.0* argues that nothing less than cutting CO<sub>2</sub> by 80% by 2020, keeping population to no more than 8 billion by 2050, restoring natural ecosystems, and eradicating poverty will save the ecosystem, and he proposes lowering income taxes as carbon taxes go up.

Since half of the largest 100 economies in the world are corporations, the former executive secretary of the UNFCCC argues that political leaders must give the business community a more central role in the transition to the green economy. 884 million people still lack access to clean water today (down from 900 million in 2009), and 2.6 billion people still lack access to safe sanitation. Half of all hospital patients in the developing world are there for water-related diseases.

As fertility rates fall and longevity increases, the ability to meet financial requirements for the elderly will diminish; the concept of retirement and social structures will have to change to avoid intergenerational conflicts. There were 12 persons working for every person 65 or older in 1950; by 2010, there were 9; and by 2050, the elderly support ratio is projected to drop to 4. There could be 150 million people with age-related dementia by 2050. Advances in brain research and applications to improve brain functioning and maintenance could lead to healthy long life, instead of an infirmed long life.

Food prices are the highest in history and are likely to continue a long-term trend of increases if there are no major innovations in production and changes in consumption, due to the combination of population growth, rising affluence (especially in India and China), the diversion of corn and other grains for biofuels, soil erosion, aquifer depletion, loss of cropland, falling water tables and water pollution, increasing fertilizer costs (high oil prices), market speculation, the diversion of water from rural to urban areas, increasing meat consumption, global food reserves at 25-year lows, and climate change's increasing droughts and flooding, melting mountain glaciers that reduce water flows, and eventually saltwater invading croplands. New approaches like saltwater agriculture, growing pure meat without growing animals, various forms of agro-ecology to reduce cost of inputs, and increasing vegetarianism would help.

Nearly 30% of the population in Muslim majority countries is between 15 and 29 years old. Many who are without work and tired of older hierarchies, feeling left behind, and wanting to join the modern world brought change across North Africa and the Middle East this year. This demographic pattern is expected to continue for another generation, leading to both innovation and the potential for continued social unrest and migration.

The number and percent in extreme poverty is falling. The world economy grew 4.9% in 2010 while the population grew 1.2%; hence, the world GDP per capita grew 3.7%. Nearly half a billion people rose out of extreme poverty (\$1.25 a day) between 2005 and 2010. Currently this figure is about 900 million or 13% of the world.

The world financial crisis and European sovereign debt emergencies continue to shift power to Asia, yet its leadership has not yet begun to help create that multifaceted general view of the future that humanity can work toward together. China became the second largest economy, passing Japan in 2010, and has more Internet users than the entire population of the United States. By 2030 India is expected to pass China as most populous country in the world.

Increasing health problems and the shortage of health workers is growing, making tele-medicine and self-diagnosis via biochip sensors and online expert systems increasingly necessary. Advances in synthetic biology, mail-order DNA, and future desktop molecular and pharmaceutical manufacturing could one day give single individuals the ability to make and deploy biological weapons of mass destruction.

Another troubling area is the emerging problem of information and cyber warfare. Governments and military contractors are engaged in an intellectual arms race to defend themselves from cyber-attacks from other governments and their surrogates. Because society's vital systems now depend on the Internet, cyber weapons to bring it down can be thought of as weapons of mass destruction. Information warfare's manipulation of media can lead to the increasing mistrust of all information.

Meanwhile, old style wars have decreased over the past two decades, cross-cultural dialogues are flourishing, and intra-state conflicts are increasingly being settled by international interventions. Today, there are 10 conflicts with at least 1,000 deaths per year (down from 14 last year): Afghanistan, Iraq, Somalia, Yemen, NW Pakistan, Naxalites in India, Mexican cartels, Sudan, Libya, and one classified as international extremism. The U.S. and Russia continue to reduce nuclear weapons while China, India, and Pakistan are increasing them.

Empowerment of women has been one of the strongest drivers of social evolution over the past century, and many argue that it is the most efficient strategy for addressing the global challenges. Only two countries allowed women to vote at the beginning of the twentieth century; today there is virtually universal suffrage, the average ratio of women legislators worldwide has reached 19.2%, and over 20 countries have a woman head of state or government. Patriarchal structures are increasingly challenged, and the movement toward gender equality is irreversible.

Although the world is waking up to the enormity of the threat of transnational organized crime, the problem continues to grow, while a global strategy to address this global threat has not been adopted. World illicit trade is estimated at \$1.6 trillion per year (up \$500 billion from last year), with counterfeiting and intellectual property piracy accounting for \$300 billion to \$1 trillion, the global drug trade at \$404 billion, trade in environmental goods at \$63 billion, human trafficking and prostitution at \$220 billion, smuggling at \$94 billion, weapons trade at \$12 billion, and cybercrime costing billions annually in lost revenue. These figures do not include extortion or organized crime's part of the \$1 trillion in bribes that the World Bank estimates are paid annually or its part of the estimated \$1.5–6.5 trillion in laundered money.

## **Future Education and Communications**

The explosive, accelerating growth of knowledge in a rapidly changing and increasingly interdependent world gives us so much to know about so many things that it seems impossible to keep up. At the same time, we are flooded with so much trivial news that serious attention to serious issues gets little interest, and too much time is wasted going through useless information.

How can we learn what is important to know in order to make sure that there is a good future for civilization? Traditionally, the world has learned through education systems, art, media, and entertainment—and now with advances of communication and entertainment technologies, we have even more information and media at our fingertips on any number of ever-growing delivery systems.

At the same time, new technologies also make it easier for more people to do more good at a faster pace than ever before. Single individuals initiate groups on the Internet, organizing actions worldwide around specific ethical issues. News media, blogs, mobile phone cameras, ethics commissions, and NGOs are increasingly exposing unethical

decisions and corrupt practices, creating an embryonic global conscience. Our failure to inculcate ethics into more of the business community contributed to the global financial crisis and resulting recession, employment stagnation, and widening rich-poor gap.

*The 2011 State of the Future Report can be viewed in its entirety on [www.millennium-project.org](http://www.millennium-project.org)*