Energy, Environment, and the Future of Mankind

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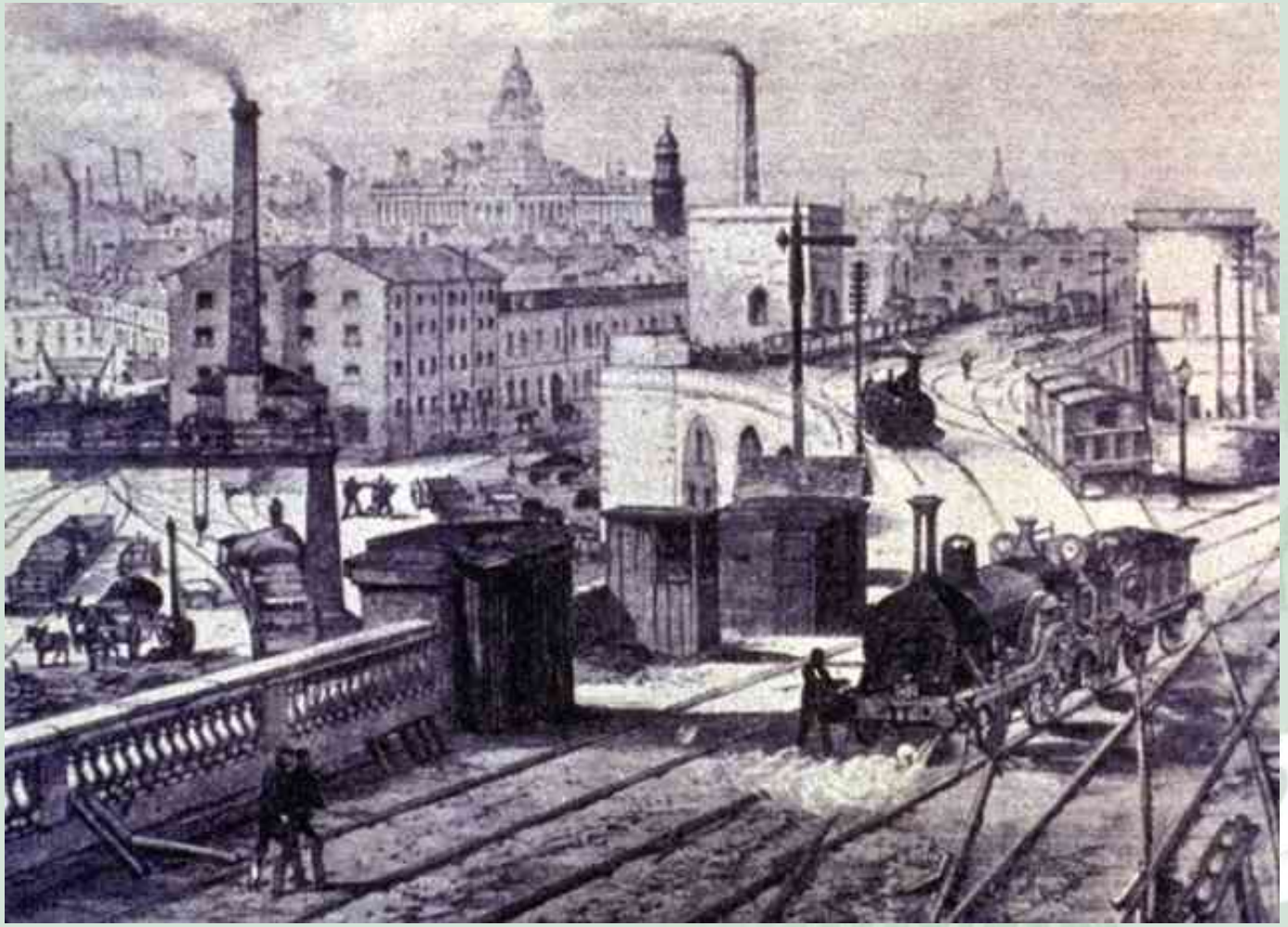
Once Upon A Time …

Mankind used to be a part of nature, reliant on the sun to fuel the creation of most of what was needed to survive. Since the population of mankind was small, their limited activities seemed to have affected neither the biosphere nor the living environment of mankind to any great extent.

The Industrial Revolution …



Industrial Revolution and Its Results:

1. The invention of the steam engine and other machines allows the replacement of human and animal labor by various machine tools. The source of energy has been gradually changed from wood produced by photosynthesis to the fossil fuels buried underground which took millions of years to accumulate.
2. Immense improvement of productivity and the improvement of material comfort which caused rapid increase of human population. In the 20th century alone, the population increased from 1.5 to 6.0 billions.
3. The waste produced by human activities started to exceed the ability of the earth to digest and caused serious damage to our living environment. For example, CO2 produced can not be completely absorbed by the growth of forest and coral reef.

However…

Unfortunately, after the industrial revolution, harmonious relations between man and the biosphere（天人合一—Man and Nature are but one）was disrupted, and the important role played by the sun in the development of mankind somehow seemed to have been forgotten.

An “Overdeveloped” World:

The world is “overdeveloped” in terms of the excessive consumption of natural resources and the damage done to our ecosystem and living environment.

The patterns of growth in many “developed” countries which require excessive or wasteful consumption of natural resources cannot be the ideal models of development.

CO_2 Emissions (2005)

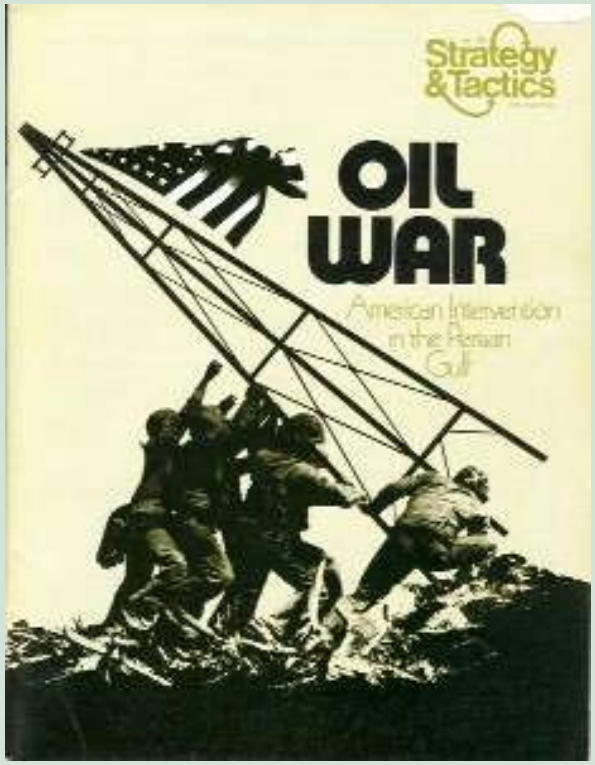
Country	Total Emission (Million Metric Tons)	Population (Million)	Ton/Capita
U.S.A	5956.98	299.8	20.14
Australia	406.64	20.3	20.24
Taiwan	284.40	22.8	12.53
Korea	499.63	47.9	10.27
U.K.	577.17	60.2	9.55
Japan	1230.36	127.9	9.65
China	5322.69	1312.9	4.07
Brazil	360.57	186.8	1.94
Indonesia	359.47	226.1	1.57
India	1165.72	1134.4	1.07
World Total			4.37

The Coming of the Energy Crisis:

1. Global reserves of various types of fossil energy remain limited. Crude oil will be fully depleted in 40-60 years, and natural gas in 80-100 years.
2. Before we are halfway through this century, the gap between energy demand and supply will probably have greatly widened.
3. The arrival of the energy crisis will also signal the arrival of a food shortage, as modern agriculture depends greatly on chemical fertilizers, which require a fair amount of energy to synthesize.

The War for Energy Resources Has Already Begun

As the earth's energy resources become ever scarcer and as the price of energy increases dramatically, the contention for energy resources which are so necessary for the development of the economy and the maintenance of modern standards of life has already become one of the primary sources of international conflict.



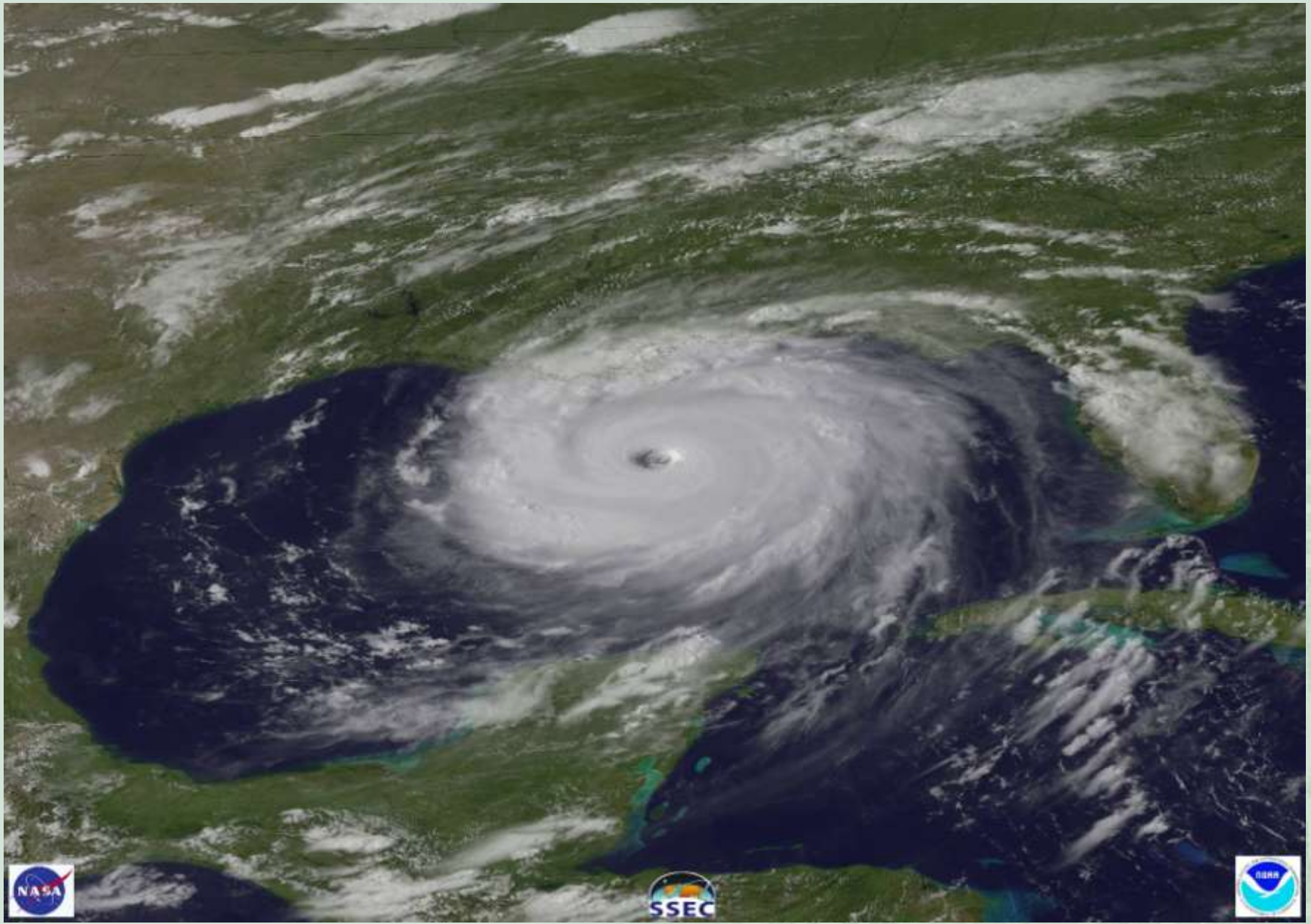
The United Nations 「Intergovernmental Panel on Climate Change (IPPC) Second Scientific Report (April 6, 2007)」

1. The effects of global warming will be much more severe than previously predicted. By approximately the year 2050, it is very likely that the earth's temperature will rise by 2-3 degrees Celsius, and 70% of the Alps will no longer be snow-covered.

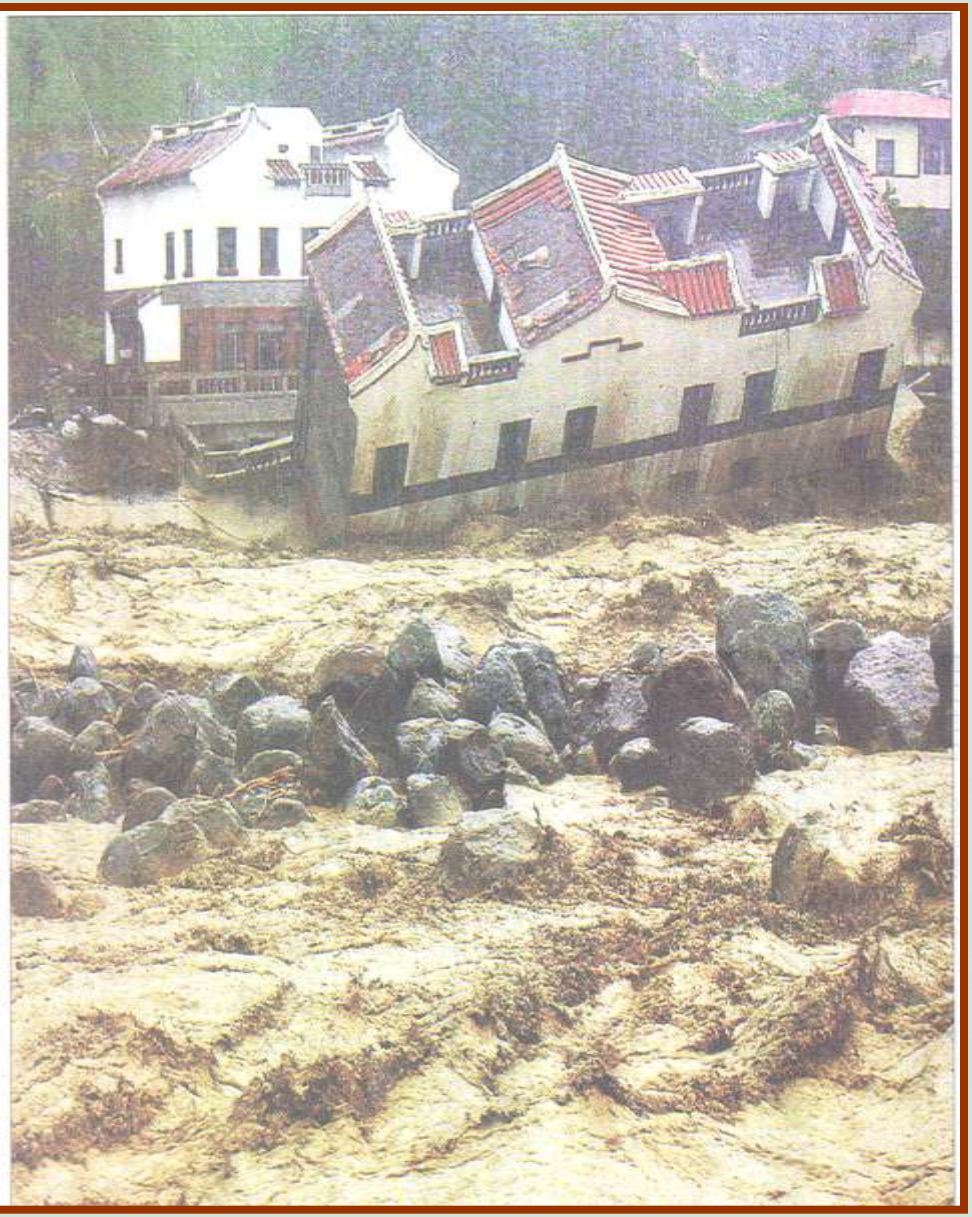
2. When the earth's temperature rises by 2℃, around 2 billion people will face grave water shortages, 20–30% of the earth's species will be on the verge of extinction, and even more people will die due to malnutrition, disease, heat waves, drought and flood.

3. In the most severe situation, one-fifth of the world's population will be affected by flooding. 1.1 billion to 3.2 billion people will face water shortages, and the earth's species will undergo extinction on a massive scale.

Katrina (2005)



Toraji（2001）



Nari（2001）

Awakening

It is of utmost importance for mankind to wake up immediately and accede to the fact that the human society is living beyond its means.

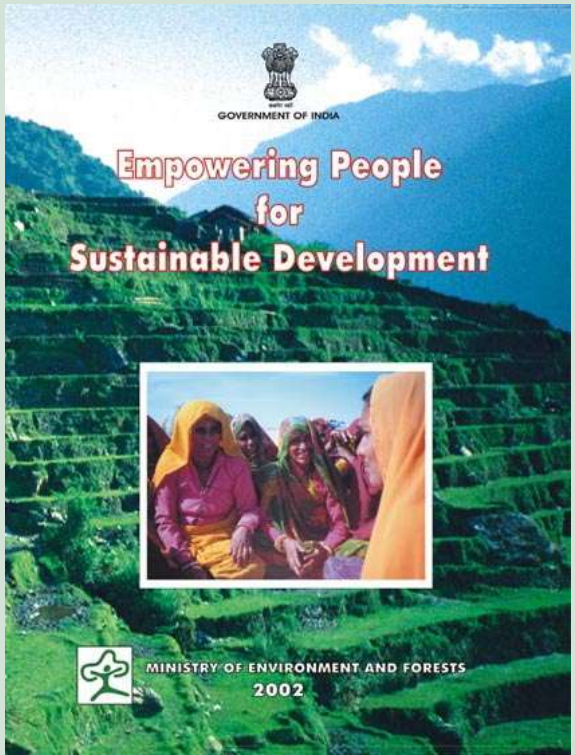
A New, Sustainable Way of Development:

1. The patterns of growth of many “developed” countries are not ideal models of development for us to emulate. We need to find a new, sustainable way of development.

2. The wisdom of Gandhi: “To achieve this standard of living for its population England had to colonize the entire world. If India wants to achieve the same standard for its vast population one has to imagine how many earths it would require to colonize.”

Finding Sustainable Ways of Development:

We must learn to work together to find new, sustainable ways to re-establish our intimate relation with biosphere, live in harmony with nature, and to return to a more direct relationship with the mighty power of the sun.



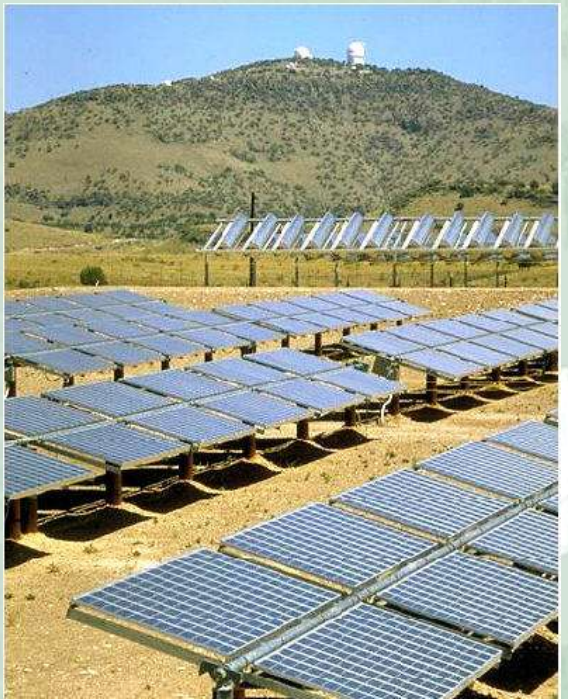
What Are To Be Done?

(A) Increase our energy efficiency and use natural resources.

(B) Develop efficient renewable energy sources; reduce dependence on fossil fuels.

(C) Examine our population policies.

(D) Protect our living environment and ecosystems and maintain biodiversity.

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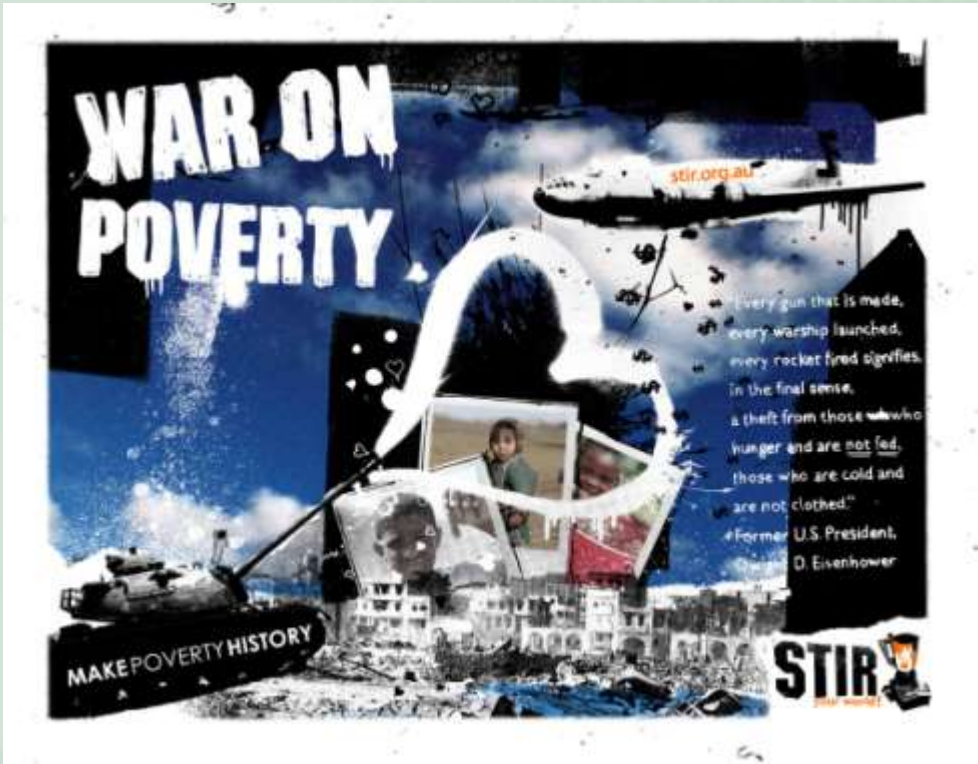
An Interdependent World

In addition to the shortage of energy resources and grave environmental problems which become worse every year, humanity faces a series of other problems. If in the increasingly interdependent world of today, the majority of humanity still lives in grinding poverty, is disease-stricken, illiterate, deprived of education, unemployed, and faces other problems of basic survival, this world will not be a safe world.



Thinking and Acting Globally

"Today's problems are global and can not be solved by any single country or by scientists alone."

"Boundaries between nations are merely lines on a map; nature makes no such distinctions. We should think of ourselves as members of humankind whose very existence will be at risk if we do not live in accordance with the principles of Mother Nature."

— Mr. Koji Omi

Problems of Living In a Half-Globalized World:

Although we have witnessed the process of the globalization of human society during the last few decades, the process is only half complete; nation-state based competition is as fierce as ever, we are still far away from forming “one global community”, and because of this, we are suffering the consequences.

1. With thousands of airplanes daily crossing oceans and continents, loaded with people and goods, disease causing bacteria, viruses, and other microbes will not be confined to specific locations.

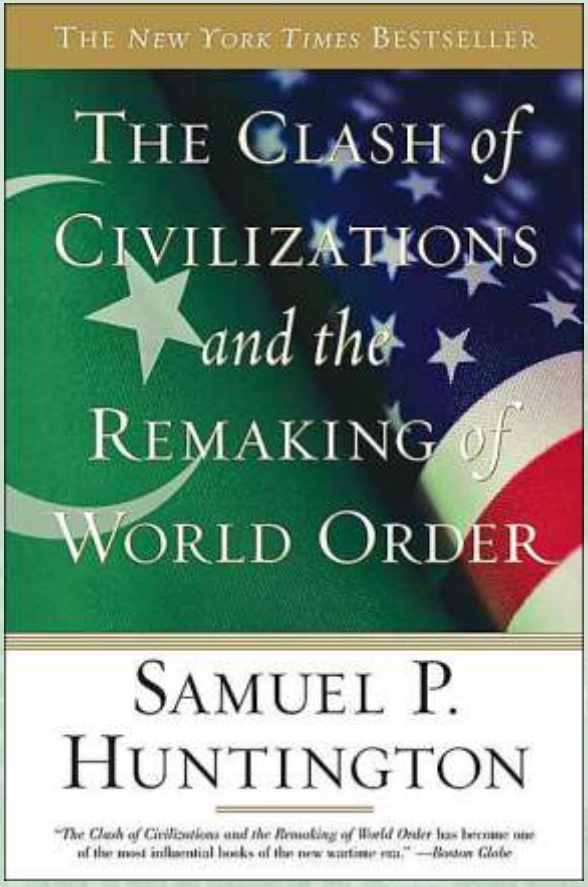
2. Environmental problems such as the depletion of the ozone layer by chlorofluorocarbons and global warming trends caused by greenhouse gases are problems that must be addressed on a global scale.

3. As high-tech economic competition is still largely carried out on a national basis, only those people able to stage their activities on a global scale are benefiting enormously, and the disparity between the rich and the poor becomes larger.

A Globalized World:

1. Cultural differences that make this world so rich and colorful will not, and should not, be made to disappear.

2. Whether there will be a clash of civilizations depends on how well peoples around the world learn to understand, appreciate and respect different cultures.



The Integration of Humanity with Nature

Throughout the course of humanity's development and survival on earth, man has always been a part of nature: It was the "mighty" sun which brought us here. We have taken the wrong path in the past 100 years. Only by returning to nature, only by re-embracing the sun, can humanity once again be in harmony with nature. Only such a renewed harmony with nature will make the sustainable development of humanity on earth possible.

Concluding Remarks:

In order for science and technology to solve the problems man faces in the 21st century, it is not enough to advance science and technology at a faster pace. The advancement of science and technology certainly will shape the development of human society of the future, however, unless we pay special attention to the roles play by science and technology in this “finite” and “half-globalized” world,

and learn to work together beyond the national boundaries and pay more attention to our “global competitiveness” for solving problems related to the sustainable development of the entire world, rather than continue to worry about “national competitiveness” for their own countries,

the problems will not be solved.

The best way to work together beyond national boundaries is to make national boundaries to disappear all together. Although it might take a long time, our future certainly will depend on How soon all of us in different countries learn to operate as “one community” for the entire world, and we do not have much time to waste.

Perhaps, half way through the 21st Century, the formation of the “United States of the Planet of Earth” or “Global Union of the Planet of Earth” might start to shape up, then the sustainable development of the entire world might become possible. Otherwise, the solar system might send the farewell message to mankind on earth in not too distant future.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Thank you very much for your audience.