

Custom practical course 3101

Environmental problem and environmentally sustainable business

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Executive Summary

We are facing serious environmental problems today. This report identifies kinds and magnitudes of environmental problems and explains the importance of environmentally sustainable development. “The environmentally sustainable business” is the way to reconcile development of business and the environment. The strategic importance of “The environmentally sustainable business” in the 21st century is explained by referring to history and recent trends of global movement of sustainable development. This research is done as one of the practical custom courses for the Ph.D. program at Rushmore University.

1. The environmental problem

1-1 What is the environmental problem?

To people, the environment includes the natural environment, social environment and cultural environment. When we talk about the environmental problem, the environment means the natural environment, which includes humans and all the biological systems of the earth. Without a proper environment, the human race could become extinct. In this sense, the environmental problem can be defined as the problem of the extinction of the human race¹.

1-2 History of the environmental problem

The human race continued to expand its population and dominated the earth by carrying out continual technical revolutions such as the invention of tools, the agricultural revolution and the industrial revolution. The environmental problems, such as losing forests and advancing deserts, began occurring on a small scale as early as the era of the agricultural revolution. The environmental problem changed dramatically from the time of the 18th century industrial revolution. In the 1970s, air pollution such as photochemical smog

became a serious environmental problem in the major cities of developed countries. The air quality of large cities in developed countries became better by improvement of car exhaust systems, however in large cities in developing countries, such as Shanghai and Mexico City, the problem is still continuing or even worsening. In the 1980s, the surprising fact that carbon-dioxide (CO₂) and chlorofluorocarbon (CFC) gases were found to be at least partially responsible for the global warming caused a ripple of alarm.

Problems related to global warming, acid rain, desertification have been pointed out from the early 1970s. In 1974, Dr. F. Poland and Dr. M. Morena released a paper to Nature arguing the possibility of CFC's destruction of the ozone layer². CFC's life in the atmosphere is estimated to be approximately 50 to 120 years, so unfortunately the destruction of the ozone layer will continue for at least another 50 years.

1-3 Major elements in the environmental problem

1-3-1 Population explosion

The source of the environmental problem is obviously the human population expansion, because it is the multiplication factor to every environmental problem. The world population is now 6.4 billion³ and increasing exponentially. The history of population expansion is shown below⁴

4-5 million years ago-----	Birth of the human race
6-7 thousand years ago-----	Below 10 million
A.D. 0 -----	200 million
A.D. 1500 -----	400 -500 million
A.D. 1800 -----	1 billion
A.D. 1900 -----	1.6 billion
A.D. 1994 -----	5.7 billion
A.D. 2004 ¹⁸ -----	6.4 billion

The human population has quadrupled since A.D. 1900. In 2010, it will become 7 billion and it will become 8 billion before 2030⁵. The population increase in developing countries is very rapid. In China, the population this year (2004) is 1.3 billion⁶ and, despite stringent birth control, the population increases about 15 million per year. In India, the population is 1.1 billion⁶, however the population will soon exceed that of China, because there is no control policy over the country's population.

The industrial revolution started in Europe and greatly enhanced people's lives. The invention of steam machines led to the development of transportation systems and enabled large scale production. The invention of electric generators and motors spawned a new technology which remains the foundation of many of today's industrial processes and domestic appliances. To respond to the rapid increase in the demand for raw materials to produce products and machines for a convenient life, massive quantities of natural resources such as iron and fossil energy such as coal are mined and consumed.

Industrialization accelerated after the second world war; now not only coal but also other fossil fuels such as oil and natural gas are consumed and, without proper control, those will soon be exhausted. Without large scale wars, and with improved hygiene and agricultural production, the world population has expanded rapidly, which exacerbated the environmental problem.

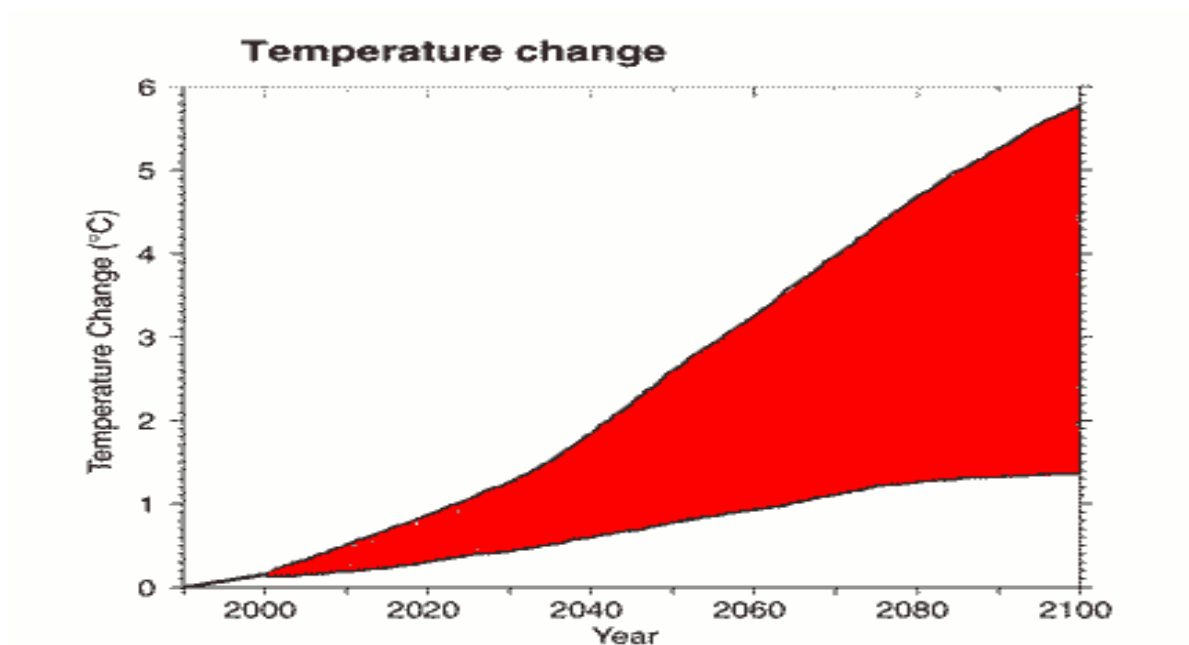
1-3-2 Global warming

In the past, the earth has experienced natural cyclic climate changes, including several ice ages. After the industrial revolution, the earth started experiencing climate changes caused by human activities. The emission of green house gas increased significantly, which raised the temperature of the earth. According to recent data, the speed of the temperature increase is about 0.2 °C (0.36 °F) per 10 years. By the end of the 21st century, the average temperature will be three degrees Centigrade [higher than today's average temperature](#). The northern hemisphere's average temperature will go up as high as six degree Centigrade because of the concentrated population. For example, Tokyo's temperature is becoming hotter by 0.07 °C (0.13°F) per year and the summer temperature

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will exceed forty degree Centigrade in 2030. The IPCC (Intergovernmental Panel on Climate Change) estimates that the concentration of CO₂ will double from pre-industrial levels by the mid- to late 21st century. Currently, the panel has projected average global warming of 0.6-2.5°C (1.0-4.5°F) in the next fifty years and 1.4 to 5.8°C (2.5 to 10.4°F) by the year 2100, compared with the global average temperature in 1990. The wide range in projected temperatures is due to varying assumptions about future trends in greenhouse gas emissions and sulfate aerosols⁷.

Figure 1-3-2a Temperature change estimation by IPCC

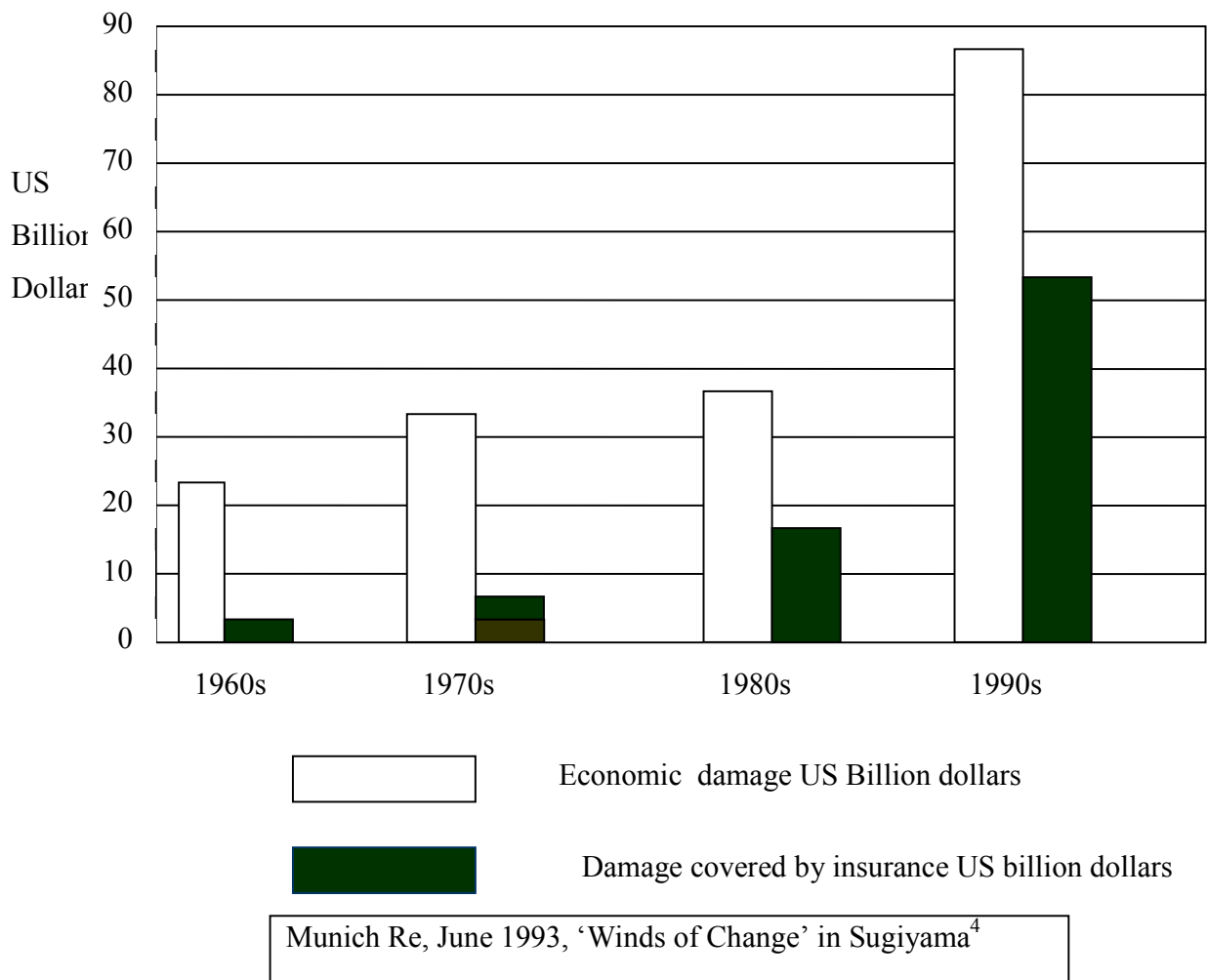


Source: IPCC Third Assessment Report (2001)

The damage to the climate is not only temperature: storm damage is also significant. In the summer of 2004, Japan has experienced very strong typhoons, with recorded wind velocity of 50 m/sec (historical high). Scientists forecast it could exceed 100 m/sec if the temperature of the sea water is raised three degree Centigrade more by the green effect⁸. Hurricanes and cyclones will also be larger as the temperature of the earth rises. We can

tell that the tendency of damages of the storms (Typhoon, hurricane and cyclone) is getting worse year by year by statistics (Figure 1-3-2b).

Figure 1-3-2b Damage of storms⁴



Updated information is available at

<http://www.ncdc.noaa.gov/oa/reports/weather-events.html#billion>.

Other damages of global warming are^{7,9,10}:

- Spreading disease;

Warmer temperatures allow mosquitoes that transmit diseases, such as malaria and dengue fever, to extend their ranges and increase both their biting rate and their ability to infect humans.

- Earlier spring arrival;

Spring now arrives earlier in many parts of the world. An earlier spring may disrupt animal migrations, alter competitive balances among species, and cause other unforeseen problems.

- Plant and animal ranges shift and population changes;

Plants and animals generally react to consistently warmer temperatures by moving to higher latitudes and elevations. Many populations and species may become more vulnerable to declining numbers or extinction if warming occurs faster than they can respond or if human development presents barriers to their migration.

- Coral reef bleaching;

Reefs in 32 countries experienced dramatic bleaching in 1997-98. Bleaching results from the loss of microscopic algae that both color and nourish living corals. Water that is warmer than normal by only 1.1-1.6°C (2 to 3 °F) has been linked to bleaching.

- **Downpours, heavy snowfalls, and flooding;**

A warmer climate will bring an increase in precipitation worldwide, especially during winter and in mid- to high latitudes, according to climate model projections. In addition, more precipitation is expected to fall in downpours and heavy snowstorms, leading to increased flooding and damage.

- **Droughts and fires;**

As the climate heats up, droughts are expected to become more frequent and severe in some locations. Sustained drought makes wildfires more likely, and crops and trees more vulnerable to pest infestations and disease.

- **Sea level rise ;**

Global warming could cause the sea level to rise from 0.5 to 2 m by 2100. Such a rise would inundate wetlands and lowlands, erode beaches, exacerbate coastal flooding, and increase the salinity of estuaries and aquifers.

The problem of global warming was first pointed out in 1972 by The Club of Rome's message, titled 'The limits to growth', warning of the risk of destruction of the earth's livable environment. It reported that global ecological constraints (related to resource use and emissions) would have significant influence on global developments in the 21st century. 'The limits to growth' warned that humanity might have to divert much capital and manpower to battle these constraints--possibly so much that the average quality of life would decline some time during the twenty-first century¹¹.

Concrete countermeasures for the prevention of global warming started in 1987, when the World Commission on Environmental and Development (WECD) adopted The Tokyo Declaration and suggested the global environment policy which stressed "sustainable development"¹². In the next year, 1988, the Intergovernmental Panel on Climate Change

(IPCC) was formulated¹³. This was responsible for analysis and prediction on global warming and for suggesting countermeasures. IPCC issued predictions on the global warming. Initially, it was estimated the temperature rise in 2100 would be 1-3.5 °C (1.8-6.3 °F), however in the third report it was corrected to 1.4-5.8 °C (2.5-10.4°F). Each estimate was very different, and each had a relatively wide range of deviation. **There is not yet a system sufficiently sophisticated to make reasonably accurate predictions**, however global warming and the elevation of the sea level are the most urgent problems in the 21st century. According to the best model calculation, the total emission of carbon dioxide has to be reduced to 50-70% of the current level to prevent the accumulation of carbon dioxide in the earth's atmosphere. In the midst of the elevated concern for the earth's environmental problem, the earth summit (United Nation's Conference on the Environment and Development Meeting; informally called The Earth Summit) was held at Rio de Janeiro, Brazil in 1992. This meeting reached two important conclusions. The first is the Declaration of Rio de Janeiro, **concerning the development of economy and the environment preservation**. The second is the behavior plan, AGENDA 21; for sustainable development¹⁴. International cooperation on the preservation of the livable environment has thus started, although it has various problems such as the difference between the interests of developed and developing countries. For the climate change treaty to have legally binding force among **developed countries** for the reduction of carbon dioxide, Conference of parties (COPS)¹⁵ were held. In COP3, The Kyoto proposal¹⁶ was adopted. The signatories agreed to reduce the annual emission of carbon dioxide by 5.2% between 2008 and 2012. The reduction target differed from one country to another; for example the reduction rate for the EU, Australia, Japan, the USA, are 8%, 10%, 6% and 7% respectively. However, at COP6 (Hague, Netherlands)¹⁷, the difference of opinion among the countries became obvious. Finally in 2001, the USA left the COP (This may be referred to as one of the results of the presidential election of 2000 as George Bush, who has a strong personal connection to the oil industry, beat Al Gore, who stressed the importance of the protection of the environment¹.) Japan stood in a delicate position, balancing the environmental protection and the right of industries to keep their CO₂ emission level high. Because COP7 agreed to deduct 3.7% of the carbon dioxide to be absorbed in the natural forest in Japan, Japan agreed to ratify The Kyoto Proposal in 2002.

As written here, the COP agreement is not easy. In fact, it is rather difficult because it is affected by domestic and international politics. To control the emission of carbon dioxide may sound simple, however even such a simple problem needs a great effort to accomplish. For example, Japan has to reduce its carbon dioxide emissions by 6% from the 1990 level. However the emission level as of 2001 exceeds the level of 1990 by 8%. This means that Japan has to reduce its emission by 14% by 2010. This is a very difficult goal to reach: sometimes it is said to be almost impossible ¹⁸ (Further explanation will be given in future papers). I strongly believe that there are solutions and solutions must be proposed from the industry side. Governments can help to urge the industry to make solutions by promulgating regulations, however it is the industry which need to challenge to establish solution to reduce the emission. The successful reduction of the CO2 will allow the industry to prosper and the failure in reduction will mean a failure of the industry's survival in the future.

1-3-3 Chemical pollution

People have created numerous new chemicals, which had never existed naturally on the earth. Spreading of these new chemicals to the natural environment caused a lot of damage to human health. We can also speculate that uncontrolled chemical spills also damaged natural environmental systems. Not only new chemicals, but also existing chemical substances, such as oil, can harm people's health and the natural systems of the earth if they are used in undesirable ways. Soil and ocean contamination, and the exportation of chemical contaminants are three major sources of pollution problems. I have summarized several incidents of contamination which had sufficient impact to give rise to changes in regulations to protect people and the natural environmental systems from possible chemical contamination damage.

1-3-3-1 Soil contamination

Love canal incident¹⁹

Between 1942 through 1953, the Hooker Chemical Company dumped 21,800 tons of waste into an abandoned canal in New York. The canal's construction was halted in the mid 1800s due to a loss of financial backing, so when the Hooker Chemical Company wanted a disposal site, the thick clay walls of the canal seemed to be a perfect place²⁰. Eventually, the land was covered with more clay and dumping ceased. Unfortunately, the land was slowly developed into a small town, Love Canal. The "impermeable" clay walls of the canal were penetrated and weakened with the building of streets and plumbing. When rain fell there was always a bad smell. One day, the land was tested for chemical content and it was found that the area was contaminated with toxic chemical pollutants such as Benzene, PCB (Poly-chlorinated Biphenyl), and dioxins. Unfortunately it was also found that the birth ratio of premature babies and physically handicapped babies to normal births was significantly higher than other districts¹. The state of NY took the situation seriously and evacuated all the families with pregnant women and small children under the age of two years. In 1980, President Carter ordered the evacuation of every family living in the district. Even now, the cleaning operation of the Love Canal district is continuing.

When the incident happened in 1978 there was only one regulation – RCRA: Resource Conservation and Recovery Act – restricting industrial waste dumping.

Unfortunately, under RCRA, inhabitants who were disadvantaged by the past faults of land contamination [could not claim the responsibility of the Hooker Chemical Company to lean up the contaminated land](#). After it had been made clear that Love Canal was a serious health threat, CERCLA commonly known as the Superfund, was enacted by Congress on December 11, 1980.

[The Superfund created a tax on the chemical and petroleum industries and provided broad Federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. Over five](#)

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years, \$1.6 billion was collected and the tax went to a trust fund for cleaning up abandoned or uncontrolled hazardous waste sites. In 1986, the Superfund was amended and reauthorized with SARA. In, SARA, greater emphasis was placed on the human health effects, including revising the hazardous waste classifying system so that it reflected human health risks. The funding was also increased to \$8.5 billion²¹.

1-3-3-2 Contamination of Ocean

On March 24, 1989, shortly after midnight, the oil tanker Exxon Valdez struck Bligh Reef in Prince William Sound, Alaska, spilling more than 11 million gallons of crude oil.

The spill was the largest in U.S. history and tested the abilities of local, national, and industrial organizations to prepare for, and respond to, a disaster of such magnitude. Many factors complicated the cleanup efforts following the spill. The size of the spill and its remote location, accessible only by helicopter and boat, made government and industry efforts difficult and tested existing plans for dealing with such an event. The spill posed threats to the delicate food chain that supports Prince William Sound's commercial fishing industry. Also in danger were ten million migratory shore birds and waterfowl, hundreds of sea otters, dozens of other species, such as harbor porpoises and sea lions, and several varieties of whales.^{22a}

Exxon Mobile spent more than two billion US dollars on cleaning up and paid one billion US dollars in [compensation to the federal and state government. While the federal and state governments settled their civil and criminal litigation against Exxon in 1991, as of March 2002 claims by private parties are still being litigated and remain unresolved.](#)^{22b}

1-3-3-3 Exports of toxic wastes

The Seveso incident²³ is the matter which became a starting point to [make the international outline of regulations to treat harmful waste](#). An explosion at a Hoffman-LaRoche chemical plant in Seveso, Italy, in 1976 sent a cloud of dioxins over the surrounding countryside, contaminating several thousand people . After the incident,

contaminated soil put in drums were found in France. The French government requested the Italian government to retrieve the contaminated soil, however the Italian government rejected the claim so the incident became a big political problem in Europe. Another problematic incident occurred in 1988; the KoKo incident. Poisonous substances were packed in drums and dumped illegally to Koko harbor, Nigeria²⁴. 150 tons of very toxic PCB (Poly-Chloride bi-phenyl) were found in the dumped materials. Similar drums containing toxic substances were found in the surrounding African countries and unfortunately people who ate foods contaminated by PCB died. These incidents happened because there was no global agreement banning the export of the toxic substances beyond the borders of the country of origin. The Basel agreement was ratified in 1992 for this purpose.

1-4 Summary of the environmental problems

As shown with many examples, we are now facing big environmental problems. I can categorize these problems into two groups. The first one is the exhaustion of natural resources. We are going to consume all the reserves of the earth's natural resources, such as fossil energy and scarce raw materials, unless we have proper control. The second is diffusion of toxic substances to the environment. We have dispersed and are still dispersing huge amounts of chemicals and these chemicals are changing the material and energy balance of the earth. If we continue to do so, we will definitely lose the livable natural environment. The most dangerous value shared among us today is a rich life based on massive consumption of energy and substances, which we have always taken for granted. As a result of this value, it looks as if everybody has been trying to squeeze the last drop of the natural resources. I think most of us have already noticed that we are facing the great danger of damaging the environment so much that we are putting our life or continuation of the human species at risk, but can we not find successful solutions to these problems and prevent the potential extinction of the human race? I think the reason must be that individuals and individual lawyers cannot clarify the cause-and-result relationships of the environmental problems.

Unfortunately, environmental problems are not yet the daily concern of most lawyers or individuals because:

- In environmental problems there are no clear relationships between the assailants and the victims; and
- The time range for solving environmental problems is beyond generations and beyond international geographic borders, so the individuals' daily efforts seem to contribute very little to solving the problem.

I can understand why individuals have a hard time realizing the magnitude of the crises we are facing, however I think we need to expedite counter measures, otherwise the extinction day of mankind may come much earlier than today's worst forecast. The world's population has already exceeded six billion and if we continue to behave as we do today, the consumption of natural resources and the emission of chemicals into the natural environment will be beyond the tolerated level. We should not forget that in the natural system, there is a law of catastrophe to any phenomena with exponential growth. Exponential phenomena tend to end with a sudden convergence⁴. I strongly hope, with a warning, that the exponential explosion of the human population based on technological revolution will not end up with a sudden convergence of the human population.

2. The environmentally sustainable business

Before getting into the subject of environmentally sustainable business and development, I need to note here briefly how business developed in the past and how it will develop in the future.

2-1 Change of the business strategy

From 1950 to 1970

Developed countries enjoyed mass production and mass consumption, doing little to protect the environment.

From 1970 to 1990

The economic growth slowed down and companies employed renewal strategies to stimulate consumption of products. The environmental problems became obvious and people became aware of the limitation of the natural resources. However, most companies assumed, incorrectly, that protection of the environment was a costly operation (i.e. there were cost factors) for companies, and no companies was willing to pay.²⁵ Companies typically misunderstood environmental protection to mean:

- Only profitable companies can afford to handle environmental problem;
- Companies have to sacrifice profit to take counter measures for environmental problems;
- Companies need to comply with environmental regulations, but do no more than regulations require;
- Environmental data is for internal company use only, it is not for external information disclosure; and
- Environmental problems are problems only to specific industries.

From 1980 and 1990

Corporate management became generally more aware that environmental issues and potential regulatory constraints require a new approach.

Sophisticated business people learnt that enforcement of these laws is important both as a matter of public policy and to prevent competitive advantage for those who ignore law.

*They also recognized that the public and the environment cannot bear all the risks associated with scientific uncertainty and that industry sometimes must accept controls before all of the scientific evidence is conclusive.*⁸

Business leaders' environmental awareness and education changed in this period. For example, until 1988 there was no environmental management course in business schools, however since 1990 many business schools have set up environmental courses and many companies have recognized the necessity for environmental protection to ensure their companies' survival¹². With the celebration of the first Earth Day, many industrialized countries began to be concerned with issues surrounding environmental degradation²⁶. At the 1992 Earth Summit in Rio de Janeiro, more than 100 nations pledged to move toward implementing the concept of "sustainable development" at the local level. After The Earth Summit, the social system began to change. In other words, without a good environmental strategy, companies cannot survive. Companies in the 21st century have to think of the environmental sustainability of their business.

2-2 History of sustainable development

"Sustainable development" has generally been defined as development that meets the needs of the present without compromising the ability of future generations to meet their own needs⁸. The sustainable development model began its development in 1972, with the first major global conference on the environment, the United Nations Conference on the Human Environment, commonly known as the Stockholm Conference. It was followed by the Rio Conference in 1992, and finally by the Johannesburg Conference in 2002.²⁷

The Stockholm Conference in 1972 led to the adaptation of and implementation of environmental laws in many countries. It did not, however, suggest a way to reconcile development and environment.

In the 1980s, it became increasingly obvious that development was imposing substantial economic and human costs. The United Nations General Assembly formed the World Commission on Environmental and Development inquires as to the relationship between development and the environment. The result was summarized as *Our Common Future*, commonly known as the Brundland Report. The Brundland report found that the four basic components of development – peace and security, economic development, social

development, and proper governance in the 21st century – require environmental protection⁸.

At the Rio Conference in 1992, it approved what is known today as the Rio Declaration on Environment and Development; a statement of 27 principles for sustainable development. A 700 page global plan of action called Agenda 21 was produced. Agenda 21 is like a blueprint (or a green print?) for global partnership, aiming at a high quality environment and a healthy economy for all peoples of the planet.²⁸

Agenda 21 is a comprehensive international ‘plan of action’ or blueprint for sustainable development, which has a course of action in five areas:

- Global corporative environmental management;
- Environmentally sound production and consumption patterns;
- Risk and hazard mitigation;
- Full cost accounting; and
- International environmental support activities.²⁹

The Johannesburg Conference (2002) was the occasion for the nations to set the environmental and sustainable development agendas and to agree to proceed with their implementation.²⁸ The UN has played a leadership role in forming a global understanding on the relation between the economy and the environment; “sustainable development”.

2-3 Environmentally sustainable business as the core strategy of companies for 21st Century

As shown, companies have changed their strategies to gain competitiveness by corresponding to the requirements of the era. In the 21st century, companies cannot survive without a good environmental strategy. Companies need to develop strategies based on technology to reconcile the needs of the environment and the development of business. Environmentally sustainable business can be defined as business which reconciles the environmental and business needs, and will prosper in the 21st century.

I can explain the prosperity of an environmentally sustainable business by raising two reasons. The first is that consumers now care much more about the environment and the second is tightened environmental regulations.

The first example is an increasing trend of “green consumers”. Today many individuals and companies purchase “green products”, which are produced by environmentally friendly methods. The market for “green products” is increasing because “green consumer”, who care for “green products”, are increasing. Large corporations and governmental organizations, especially, tend to purchase “green products”. The costs of “green products” are sometimes higher than the costs of products from virgin raw materials and this can be a bottleneck, impeding further spreading of “green products” in the market. There is even a criticism that only rich individuals and profitable companies can purchase “green products”. If “green products” can be produced at equal or lower costs compared to non-green products, consumers will purchase “green products” and the business with “green products” will prosper. In this sense, innovation in manufacturing technology to produce quality green products economically will be one of the key strategies of companies in the 21st century.

The second example is the enforcement of environmental regulations. Compliance with regulations sometimes requires more investments from companies, and raises their costs. This is called “internalization of the social costs”. However, **sensitive** managers, who are aware of the importance of competitiveness in business, can think of it as a positive aspect of compliance to regulations. Companies can revise the efficiency of total operations to reduce the consumption of energy and raw material.

Management guru Michael Porter and van der Linde³⁰ argue that:

Properly designed environmental standards can trigger innovation that at least partially offsets the cost of complying with them. The innovation offsets can lower the net costs of pollution abatement and remediation while at the sometime providing companies with an absolute competitive advantage. Strict environmental regulations will cause companies to seek into innovative solutions to minimize their cost of compliance while improving their products. The opportunities for innovation

must be maximized by allowing industry to take part in choosing the most effective solutions to environmental problems.

“Environmentally sustainable business” is the key phrase: business development and the environmental sustainability coexisting. The world population is increasing exponentially and people are pursuing [a pleasant life style](#), which tends to mean higher consumption of limited energy supplies and natural resources. We need to have strategies and technological solutions to reconcile environmental protection and business development. The answer is the environmentally sustainable business.

3. Other constrains to environmentally sustainable business

3-1 Free trade and fairness of the competition

Some executives are concerned that free trade will open developed countries’ market to a flood of low priced imports and that the agreements do not address environmental issues.

For example if China, as “the factory of the world“, neglects the environment and exports its products to the USA, the companies in the USA that are paying a lot of money to protect the environment will be handicapped. I think this can happen and has happened. However, such neglect of the environment will not last long. The regulations in developing countries will be tightened soon or later and companies which do not comply with environmental regulations in developing countries will soon be extinct. I argue that free trade has positive effects for environmentally sustainable development of business in many ways.

- For example⁸:
- Facilitates the adoption of needed environmental protection by providing access to environmentally advanced goods and technologies.
- Minimize waste through trade in recovered material for recycling (Gavin, 1991)

Considering the fact that natural resources are not distributed evenly and the demand for natural resources, recycled material and a technology level capable of reusing and recycling are different from a one region to another, free trade will contribute to optimizing global manufacturing systems of environmentally sustainable production.

3-2 Innovation and the environmentally sustainable business

DuPont's chairman, Ed Woodward, said, "Congress can legislate, environmentalists can agitate, but only industry can innovate".²⁶ Industry should think that regulations are the bottom line and industry should be challenged to perform much better than is demanded by regulation control. Regulations are just necessary conditions and the sufficient condition for being excellent companies in an environmental sense is the innovation in technology which allows companies to go to a much higher level than regulations demand.

Marc J. Epstein²⁶ explains that:

The innovation offsets can easily exceed the cost of compliance if total costs and benefits are identified and measured properly. Avoiding the production of waste so that no money need to be spent to clean it up is often accomplished through a combination of capital investments, process improvements and product improvements. These improvements in turn, often result in better products, increased environmental responsibility and increased profitability. For many people, sustainable development is the goal for global environmental survival, national economic prosperity, and sound corporate growth.

I argue that the environmentally sustainable business is much more than the protection of the environmental itself. It is an innovation process to revitalize companies with a view to improving the overall performance in terms of efficiency, quality and competitiveness, all of which correspond to sustainable development of the world and preservation of the livable environment for successive generations. Companies are required to add the environmental scope to their strategies of innovation and this will be the center of strategies of companies in the 21st century.

3. Conclusion

Industrialization brought mankind a very pleasant life style and environmental disasters simultaneously. To preserve a livable environment for successive generations, we have to redesign the whole production system of the world. Environmental protection and sustainable development have to be reconciled and such a business scheme can be called environmentally sustainable business. Companies should center their business strategies on environmental sustainability, because the importance of the environmental sustainability to human race is second to none now. Innovation in environmentally sustainable business will be the key to success in the 21st century.

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