

Executive Summary

The world we live in – What will it be like? Where is it headed?

The earth formed some 4.6 billion years ago. It is said that life arose 600 million to 800 million years after the earth formed. After that, during the long eons in which even continents changed form, living organisms continued working to stay alive while adjusting their own bodies and their capabilities to their environment. When water, rock, stone, and sun combined to make various environments, countless species emerged. Diverse, exquisite ecosystems were woven together between inorganic matter and living organisms, or among living organisms. Each time the earth has faced a period of mass extinction; some individual organisms tolerated the conditions and escaped, remaining alive. Over a great length of time, the planet has continued to overflow with a truly enormous amount of life.

Humans emerged on this planet only very recently as seen on a time scale of the history of life. The hominids who domesticated fire some million years ago subsequently adapted themselves to many major environmental shifts, climactic changes foremost among them, surviving each crisis. As time passed, civilizations rose, some prospering and some perishing, and we are the beneficiaries of the ongoing civilization that has been handed down to modern times.

As remarkably skillful uses of fire arose from the industrial revolution, human society faced a new era. Modern civilization, while conferring various real conveniences on humankind, does not obey natural law — to be described below — and for this reason, humankind has continued to place a massive burden on the environment. There has been almost no international recognition of that fact until quite recently.

Humanity now stands at great crossroads.

We can directly experience the fact that today even our daily lives are impacted by global environmental changes and international economic trends. Skeptical voices begin to be heard, raising the question of whether the patterns of socioeconomic development that prevailed until now can continue to bring forth human well-being in the future.

As we damage the environment upon which human socioeconomic activities depend, the circumstances now compel us to raise awareness of the depleting resources and energy that have been used lavishly, more in some countries than in others. This problem cannot be resolved by seeking to open up new geographic frontiers as was practiced in the past. Humans, whose activities now span to the ends of the earth, are now on track to use up the underground mineral resources that make up life's foundations within a few decades. In the future, beyond thoroughly rationalizing resource and energy use, humankind must

transit the basis of all our activity to use resources and forms of energy with smaller adverse impacts on the environment and for which there are no concerns about depletion.

Additionally, the global recession has revealed misgivings, sometimes ethical, about an economic system and its attendant structures that have sometimes conferred benefits distantly removed from the real economy, alongside the damage it has caused in individuals' ability to make a living. Conversely, the recession has also unmistakably broadened the flow of financing to environmentally-concerned projects and SRIs (Socially Responsible Investment).

The so-called Green Growth movement has gained international visibility as it utilizes environmental policy measures to drive economic recovery, leading to an end to the recession and subsequent sustainable development.

Furthermore, Europe, for example, at dubious point of view about the GDP measures that disaster recovery expenditures are counted as growth even beset by enormous damage from floods, heat waves, and other abnormal climate impacts, is calling for a new development framework that measures the importance of human happiness over and above GDP.

As we stand in our present era, this year's White Paper perspective is based on a worldwide view, using data on several socioeconomic trends closely linked to environmental problems, and encompasses the question of the world's direction, from the conditions of population shifts and poverty and socioeconomic disparities.

As we face an era of this nature, this year's White Paper encompasses the question of where the world is headed, from population trends through poverty and socioeconomic disparities. Its perspective is worldwide and is grounded in data that describe several socioeconomic movements deeply related to environmental problems. The data reveal that population increases and economic growth have driven corresponding increases in resource consumption and the environmental burden. Trends in water, food, energy, waste, and so forth, are showing no improvement. When international socioeconomic tendencies and resource limits are considered, it appears extremely unlikely that the currently prevalent socioeconomic structures based on mass production, mass consumption, and mass waste can be continued into the future. There is a concern that resource depletion and uneven distribution will become major international problems as countries concern themselves with securing their own national interests.

In the context of international efforts to handle environmental problems, developing countries now tend to emphasize the "different" in the phrase "common problem but with different responsibilities." Instead,

Japan advocates for the “common problem,” recognizing a common destiny, and emphasizing that all countries should unite to start a concerted effort to advance tangible actions toward environmental protection.

Chapter 1 offers an overview of representative environmental conditions. Chapter 2 describes global warming’s already evident harm and the urgency of formulating a response. After discussing global warming’s present-day harmful effects and the economic consequences of responding, we introduce Japanese and global efforts related to global warming response measures. There are various potential choices of how to formulate a response to global warming. Whichever choice is made, to solve the problem it is essential to build a society that can restrict GHG emissions without imposing cultural or lifestyle sacrifices, and while still enabling truly rich and abundant life. Our daily lives are inescapably and intimately tied to the progression of global warming. The adverse effects will continue for a long time, not only for us but for future generations. We must immediately move to formulate a plan to face this problem, following a new growth strategy that touts “an economic society for the sake of people,” aiming for an economic society with far less GHG emissions.

In Chapter 3, in light of COP10 that will be held in Japan in October 2010, we show Japan’s responsibility as host country and the need to transition to socioeconomic arrangements concerned with biodiversity. Biodiversity confers various benefits on humanity, on a scale far larger than what we normally perceive them to be. Nonetheless, biodiversity is being lost rapidly on a global scale at an unprecedented level, and we are presently facing a future in which it will be difficult to enjoy the services provided by ecosystems in a sustainable manner. The magnitude of the benefits obtained from ecosystem protection is now understood to be larger than the cost of recovering formerly lost ecosystems, and it is of prime importance to advance development projects and natural resource use after thoroughly analyzing the cost effectiveness. Global biodiversity has far-reaching effects because Japan depends on overseas supply for most of its resources. Therefore, in order to protect and sustainably utilize the biodiversity that forms the foundation for human survival, we must take initiative to change all of our socioeconomic arrangements, from corporate actions to individual lifestyles, on the basis of our concern for biodiversity. Through its consideration of post-2010 global targets, COP10 is an important conference that will decide the future in the global biodiversity. As the host country Japan must take the lead in fostering the balanced coexistence of humans and nature around the world, such as through the worldwide spread of “the Satoyama Initiative” promoting sustainable use and management of natural resources.

Chapter 4 considers the protection of the world’s limited and unevenly distributed water supply and the role Japan should play. Thanks to its superior water supply technologies and systems, Japan, when compared to countries with chronic water shortages, tends to

have relatively minor appreciation and awareness of water as a resource directly tied to existence and daily life. However, we must not forget that Japan’s economic and social activities are burdening the world’s water to the same degree the country is consuming its own. To address this issue, Japan’s excellent drinking water supply and wastewater treatment technologies can be appropriately used to contribute solutions for the problem of securing clean water for the world, while simultaneously taking intellectual property rights into consideration. There has always been water-related business among the members of the international community. However, the progress of Japan’s water initiatives cannot be viewed with great optimism because other countries’ products may offer inferior technologies but at more competitive prices. Also, Japan lacks a track record in the maintenance and management of the giant water processing systems built from these constituent technologies. Nevertheless, there are favorable signs in evidence. It is necessary to follow up on global progress in promoting water environmental protection and water-related business, thanks to the cooperative efforts of related parties, including government support.

Chapter 5 describes how the development of environmental industries must be made to drive the economy and society. While Japan is a world-class technological leading power in environment-related patents and in other measures, in actual practice this is not necessarily linked to sufficient penetration of world markets or to new product development. Environment-related enterprises must be supported broadly by the country as a whole, en masse along with green innovation, of R&D, human resources development, seeds to needs matching, demand stimulation, social systems arrangements, and so forth. This approach holds promise for using Japan’s excellent technological capabilities to bring about international-scale environmental and economic recovery. In recent years, many countries and international institutions are exploring economic development approaches pivoting on the environment, and calling them “Green Growth.” They are reconsidering the development approaches taken until now. As they seek the further development of humankind while also valuing environmental concerns, a paradigm shift is now occurring, one of great importance in the history of human development. Experimental calculations using indicators that reveal the integration of environmental, social, and economic development show that each individual country’s value system and its work products are reflected within them.

Viewing it with above, in order to develop in stages a new human society that can bring forth a reliably sustainable civilization on this one and only earth, out of the consumer culture that has prevailed until now, it can be seen that Japan has a variety of things to contribute. For this reason, a new concept has emerged that asserts human activities must be assessed not only for their economic value but with various kinds of

indicators.

Modern civilization, in some aspects, has not been able to live in harmony with nature because humans have been unable to acknowledge the laws of nature and fully recognize the massive impact they have on it. The first point is how to receive the natural world's gifts for our human well-being. For example, the resource gifts from each year would be accepted within the scope of their availability for that year, and finite resources used exceedingly sparingly, including re-using them. If resources are taken with a short-term view at rates exceeding nature's regeneration capacity, or are viewed as inexhaustible, and frugality and efficiency are carelessly disregarded, these resources — which are finite — will be unexpectedly exhausted, and they cannot be used again. The second point is that when things unneeded including waste should be returned to natural world, they must be returned within the range of what can be taken in. After receiving gifts of resources from the natural world, humans have returned substances to that world that it cannot process and adequately recover from, and has dumped sufficient quantities of substances into the environment that cannot be handled due to their sheer volume. Today the impact of these practices on the environment has extended around the world. People are now agonizing over how to take responsibility for the environment that was altered so drastically through human activity. The third point is that we have not thought it important to live in harmonious coexistence with nature. *Homo sapiens* are only one species among the 30 million that are said to inhabit the earth. Regardless that there exist yet unknown aspects of natural mechanisms, our share in these mechanisms has grown explosively in recent years. In that process, many species are being brought to extinction at a rate unprecedented in the history of life. Overuse of a natural resource by one organism will exhaust that

resource, and under natural conditions, the population of that organism will decrease. The limits of the environment were irrevocably altered to something unsuitable for the organism's own existence, so it is natural that its population will decrease. Is that the future we want?

The ideology of "Mottainai" and of being content with little is exactly the values based on the sustainability and as Japan has many long years of experience with it, we believe that we must not spare any effort to make that value system a global standard that extends across the gamut from technology to institutions. If measurements are distorted, they must be improved, and after new targets are fixed appropriately, their respective responsible parties must make the required efforts.

A pressing crisis is before us, which we must directly face. Humanity must make correct judgments. And not only that, we must steadily build upon our actions to produce positive results. Toward these goals, we will bring forth targets based on levels demanded by science, and we must formulate a plan to reach them with unanimous participation.

With the prerequisite condition that the main emissions-producing countries will build a fair, effective international framework, and can agree upon voluntary targets, Japan is calling for an international commitment to a 25% GHG emissions volume reduction by 2020. This is far from easy to accomplish. If pain comes, it must be shared. Even so, Japan aims to reach the intermediate targets by using every available means of government policy. With unwavering determination, we will open a bright future for humanity along the path toward building a new civilization free of excessive dependence on depletion-prone resources and energy.