

## Reconsidering Environmental Problems “Part 1: To the Era of Globally Utilizing Local Action”

Talking with Secretary General Tetsuro Yasuda at the Asahi Glass Foundation

It has been many years since global warming was first considered an imminent challenge facing the world. However, the international community has shifted its focus from the environment to “economic growth” in the aftermath of the global financial crisis triggered by the Lehman Shock in 2008 and the Great East Japan Earthquake of 2011, which involved major nuclear accidents, in Japan. Currently, we do not have a clear outlook for the path to the establishment of a new international framework. I spoke with Secretary General Tetsuro Yasuda at the Asahi Glass Foundation about what environmental experts around the world are thinking now, as well as what is happening in the present.

[Click here to see “Part 2: The Correct Recognition of Natural Resource Costs Will Lead to Realization of Economic Growth”](#)

Secretary General Tetsuro Yasuda at the Asahi Glass Foundation

### International Action Up to Now

**Q: The Asahi Glass Foundation conducts an annual survey, “Questionnaire on Environmental Problems and the Survival of Humankind,” which presents the current thoughts and opinions of environmental experts around the world on the state of the global environment. I hear that the sense of crisis shared among environmental experts has leveled off in recent years. Behind this is the fact that previous attempts to establish international frameworks did not necessarily work. What do you think of this?**

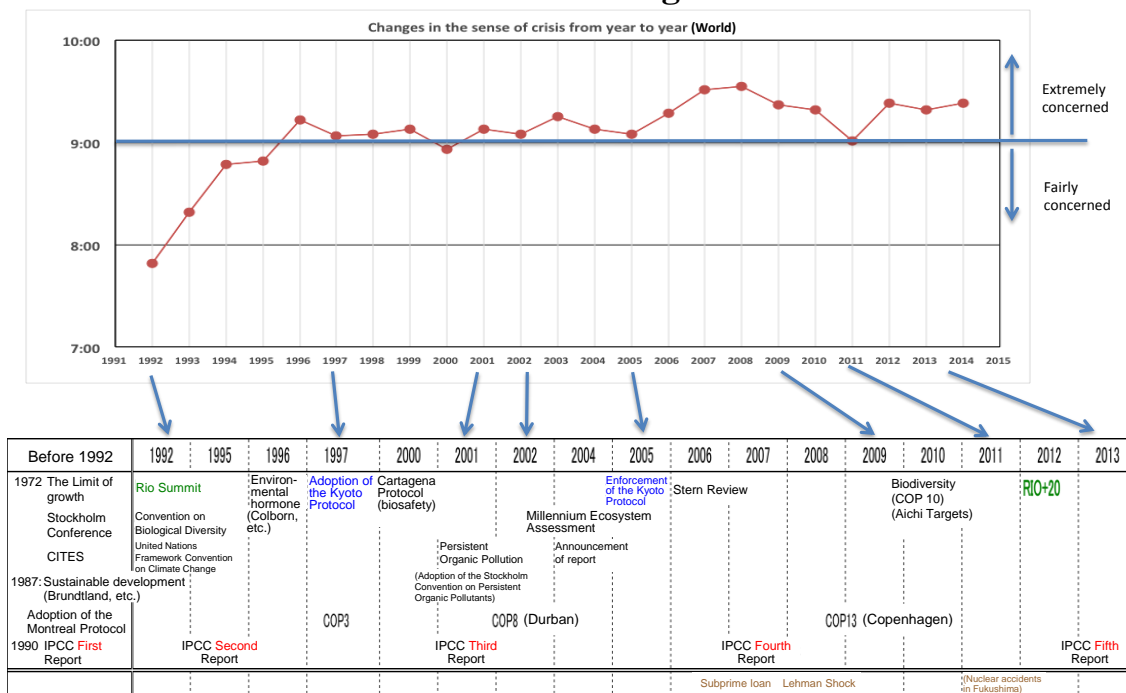


**Yasuda:** In our surveys, the first question we ask is about the Environmental Doomsday Clock (if the clock strikes 12:00, it marks a crisis of human survival) to gauge the crisis facing countries and regions where environmental experts live. That is, we have surveyed experts’ awareness of crisis about the margin left until the worst moment of the crisis facing human survival due to the degradation of the global environment.

The graph below illustrates the transformation of environmental frameworks in the last twenty years. The United Nations Framework Convention on Climate Change was adopted in 1992 and the world agreed to cooperate in tackling global warming. In 1997, the international community adopted the Kyoto Protocol that specified numerical targets for greenhouse gas emission reductions by developed countries. Following this, as international conferences had more active discussions on the establishment of an international framework, the differences in the stances on environmental problems between developed and developing countries and the differences in opinions among developed countries surfaced.

- Reference: What is the battle over biodiversity between developed and developing countries?

### The Environmental Doomsday Clock: Awareness of the Crisis Facing Human Survival



Material: The Asahi Glass Foundation

The graph above illustrates that experts' awareness of the crisis declined around the Lehman Shock of 2008 and COP 13 (Copenhagen Conference) in 2009 with the peak in 2007 when the IPCC\* Fourth Assessment Report was announced.

Of course, the global warming issue is not changing for the better. As you know, the IPCC Fifth Assessment Report, which was officially announced in November 2014, states that human activities are obviously impacting the global climate and that the average temperature would rise by 3.7 to 4.8 degrees by 2100, comparable to that of 1850 to 1900, unless there are commitments to reducing greenhouse gas emissions. The

report presented a very severe projection and made policy recommendations for policymakers around the world. However, experts' awareness of the crisis has leveled off.

That is, the fact that global warming is in a “crisis situation” on the basis of a scientific survey was not very surprising to experts and the results of the IPCC Fifth Assessment Report could be analogized from the Fourth Assessment Report to some extent. I think that what is more serious is the fact that environmental experts are seized with an increasing sense of helplessness in their role of approaching policymakers around the world.

■ **The 23rd Annual “Questionnaire on Environmental Problems and the Survival of Humankind”**

The Asahi Glass Foundation has been conducting an annual survey (2,343 respondents in fiscal 2014) on environmental experts all around the world (central and local governments, NGOs, universities and other research institutes, companies, mass media and so on) since fiscal 1992 to report the current thoughts and opinions of environmental experts around the world on the state of the global environment.

**Q: The world economy worsened in the aftermath of the global financial crisis triggered by the Lehman Shock of 2008 and Japan faced a shortage of power supply in the face of the Great East Japan Earthquake of 2011 and the Fukushima nuclear power plant accidents caused by the major earthquake. In this situation, there occurred a growing trend of postponing efforts to reduce greenhouse gas emissions that put a heavy burden on the business circle in developed countries.**

**Yasuda:** Environmental experts all around the world, including the IPCC, expected that they would help implement appropriate environmental initiatives by making accurate policy recommendations on specialized investigative and analytical results for policymakers, including governments and global organizations. However, I guess that our latest questionnaire shows the growing despair of environmental experts who began thinking, around COP 13, that despite how hard worked to communicate their recommendations, the politics and policies of countries around the world did not change and that after all, everything was driven by the “economy.”

**Q: In Japan, national projects for the promotion of individual efforts to save energy began in 1992 and individual-level environmental awareness has become quite common for the last twenty years. However, if you think from a global perspective, you have to say that the business circle has not taken action, and things remain unchanged. At the United Nations Climate Change Summit in September 2014, Hollywood**

**star Leonardo DiCaprio made a speech requesting top leaders from 120 countries to stop providing government subsidies and preferential measures to greenhouse gas-emitting companies.**

**Yasuda:** Many such specific measures for reducing greenhouse gas emission have already been proposed. However, it is left to policymakers in each country to decide on effective environmental regulations. The key to the decision from many policymakers is economic growth. In response to this situation, the next thing environmental experts did was present a system to facilitate the coexistence between the environment and the economy, including an accounting system that reflects environmental costs. But such a system is considered too restrictive for the interests of business circles and does not work well.

Currently, many environmental experts think that although they have many things to do and many measures to implement, they do not know how to get governments to put them into action. To be honest, some environmental experts are very pessimistic about the future of the earth. However, our latest questionnaire demonstrates that many environmental experts pointed to the significance of individual awareness.

**Q: So you mean, environmental experts initially put greater emphasis on advising policymakers to carry out measures than on supporting individuals in acquiring specialized knowledge about environmental problems. But actually, policymakers did not make an active effort to take environmental measures. Individual efforts are the last resort to get policymakers to take action.**

**Yasuda:** Of course, to implement environmental initiatives, it is essential to build an international framework with the participation of global organizations, including the United Nations, and governments all around the world rather than efforts by a single country. However, individual countries do not take action unless their individual citizens have a change in awareness. As long as people seek a consumption-oriented lifestyle, government policymakers will not change their economy-focused policy. That is why our latest questionnaire includes many opinions about the significance of environmental education and publication efforts for individual citizens.

**Q: Now, COP 20 is being held in Lima, Peru, starting on December 1, 2014. Countries around the world aim to “agree on establishing a new international framework for post-2020” at the upcoming COP 21 to be held in December 2015 as a measure for greenhouse gas emission reduction. COP 20 focuses on laying the “groundwork for the agreement.” What do you think of this?**

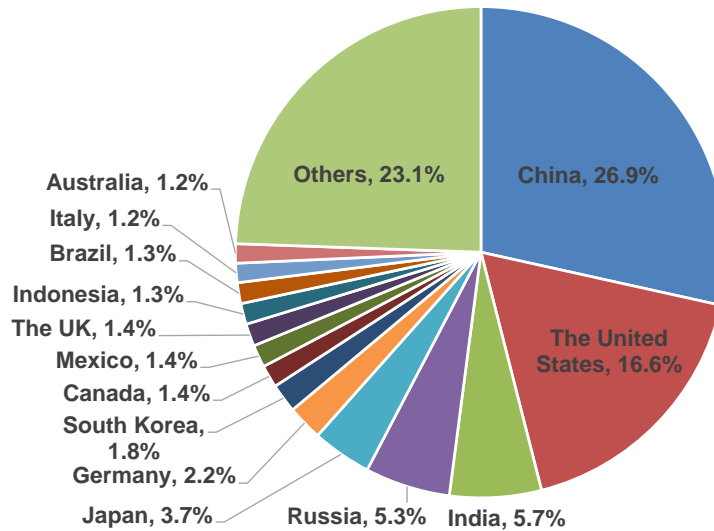
**Yasuda:** To be honest, many environmental experts are skeptical of an agreement being reached among countries around the world at COP 21, which will be held one year later. That is why they are looking straight at reality, thinking that the only way to solve the environmental problems is to restart immediately with “raising individual awareness.”

Adopted in 1992	The United Nations Framework Convention on Climate Change (195 countries and regions)	Confirming the principles of greenhouse gas emission reduction
Adopted in 1997	The Kyoto Protocol (COP 3) (193 countries and regions)	It was determined that developed countries would set numerical targets for reducing the total greenhouse gas emissions from 2008 to 2012 by more than 5% in comparison with 1990 (6% for Japan).
June 2009	-----	Prime Minister Yukio Hatoyama of the Democratic Party of Japan announced the mid-term plan of “reducing greenhouse gas emissions by 25% by 2020 in comparison with 1990” (including emission allowances purchased from overseas countries and forest absorptions).
November 2013	-----	Prime Minister Shinzo Abe of the Liberal Democratic Party announced a new plan to reduce greenhouse gas emissions by an additional 3.8% by 2020 in comparison with 2005 (allowing emission of over 3% in comparison with 1990).
November 2013	The United Nations Climate Change Conference (COP 19)	<b>Decided to submit draft targets by country by March 2015</b>
December 2015	The United Nations Climate Change Conference (COP 21)	<b>Planning to agree on establishing a new international framework on global warming for the post-2020</b>
<b>Reference: Japan and the World’s Action for Reducing Greenhouse Gas Emissions</b>		

The United States	Reducing 26 to 28% by 2025 in comparison with 2005
China	Reducing with the peak at around 2030 at the latest
European Union (EU)	Reducing 40% in 2030 in comparison with 1990
<b>Reference: Numerical Targets for Reducing Greenhouse Gas Emissions for the Post-2020 Prior to Japan</b>	

## Reference: Carbon Dioxide Emissions by Country

The Total of Global Emissions about 31.8 billion tons (2011)



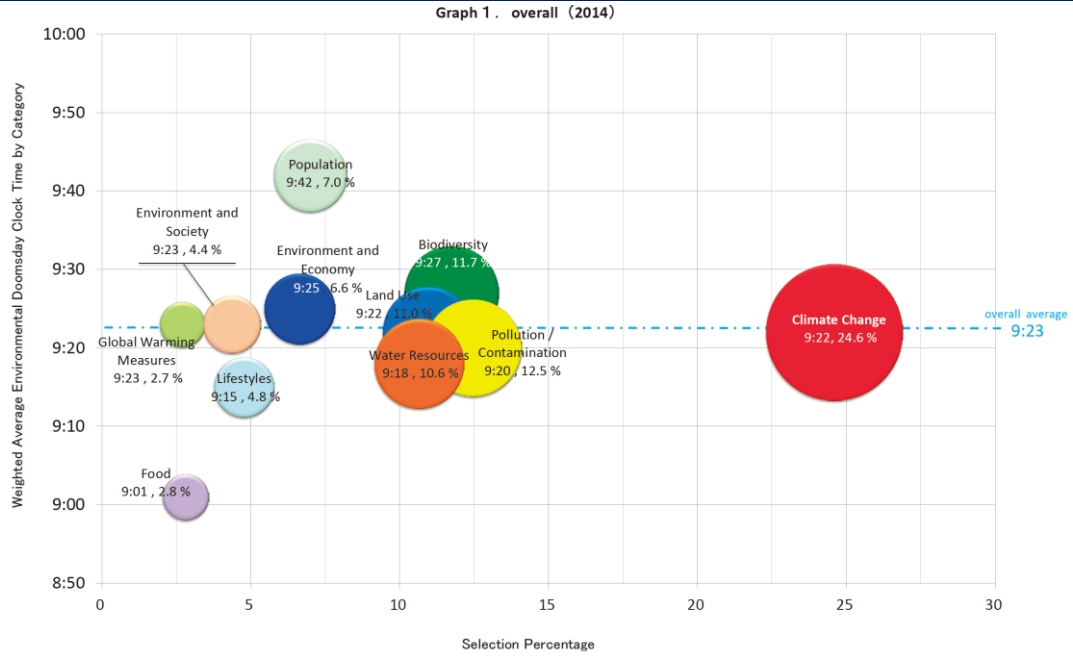
Source: Based on the 2014 EDMC Handbook of Energy & Economic Statistics in Japan

### Sticking to Conventional Business Models Prevents the Establishment of a New Framework

**Q:** For the overall tendency, your latest questionnaire focuses on climate change and population as a key theme of environmental problems, whereas environmental experts showed different levels in their sense of crisis about different countries and regions, for example, environmental pollution in China and land utilization in African nations.

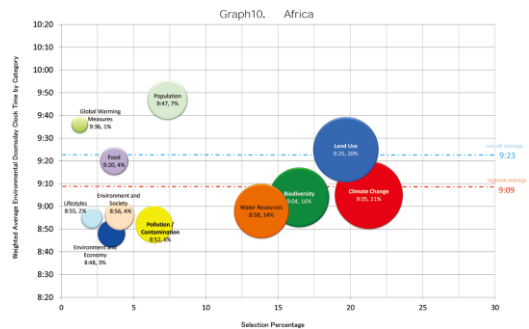
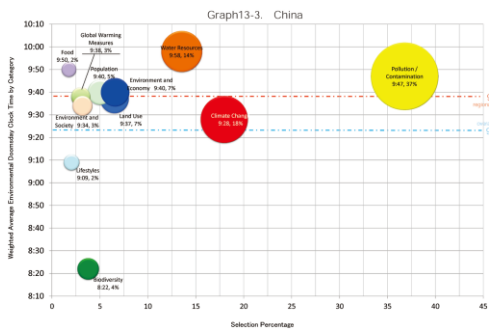
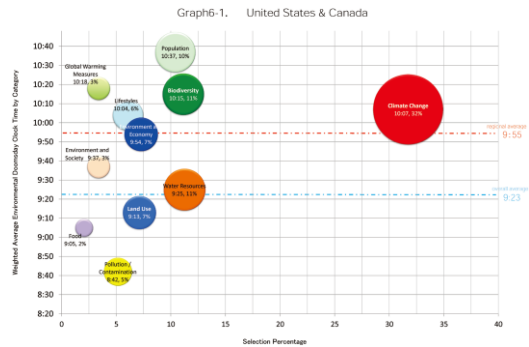
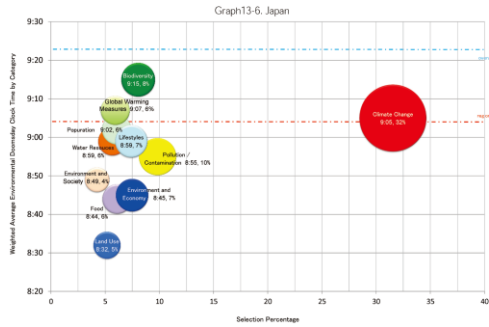
**Yasuda:** If you approach environmental problems on the basis of the assumption that a major factor behind global warming is human economic activities, it is quite natural that people are concerned that a population increase will cause the global environment to get worse. However, our latest questionnaire indicates that environmental experts from developed countries, such as North America, Australia and Canada, where they have not seen a population increase, also focused on population. One conceivable reason for this, I guess, is that those experts from advanced nations may be strongly aware that they have already carried out a certain degree of environmental measures and that many unsolved problems, such as the population increase and environmental pollution, are caused by developing countries.

# Results of the 2014 Questionnaire: Overall Analysis of the Environmental Conditions of Concern



Source: The Survey Report of the Asahi Glass Foundation's "Questionnaire on Environmental Problems and the Survival of Humankind"

## Different countries showed different focuses of attention.



Source: The Survey Report of the Asahi Glass Foundation's "Questionnaire on Environmental Problems and the Survival of Humankind"

**Q: Certainly, Japan introduced exhaust gas regulations so many years ago that people have a certain level of environmental awareness, including about food security and forest preservation. I did not have the impression that Japan lagged far behind the rest of the world in environmental action.**

**Yasuda:** For example, it tends to be thought that environmental pollution and land utilization problems have already been resolved in developed countries, including Japan, with the exception of some environmental experts. However, many people do not know that agricultural chemicals are used more in countries and regions like advanced nations where agricultural business has been established than in developing countries, and Japan is no exception.

Have you heard about the danger of F1 species? Essentially, rice, vegetables and fruit bud from their seeds and bear new fruit. But F1 species are “one-generation” and “non-circulatory” species that do not produce subsequent generations. These species were created by global producers to realize highly efficient agriculture in a vast expanse of land. To grow F1 species, you have to put the soil in an aseptic condition by using special agricultural chemicals and fertilizers.

F1 species are widely used in Japanese production sites as well. In this process, the land is completely sterilized with agricultural chemicals, which causes the nutrients contained in the soil and ecosystem to change and destroys biodiversity. In developing countries, the agricultural business is not established so thoroughly as to use the same type of species. That is why F1 species are a big issue in developed countries, such as in the West and Japan. However, few people know this.

**Q: I thought that the use of agricultural chemicals was decreasing in Japan due to the growing distribution of pesticide-free vegetables.**

**Yasuda:** Disappointingly, recent studies show that the percentage of nitrogen has risen in the waters around the Sea of Japan, and this is said to be the result of the use of chemical fertilizers.

**Q: From the supplier’s standpoint of business, the development of F1 species, which require the annual purchase of special breeds, agricultural chemicals and fertilizers, could be expected to realize a continuous and steady increase in sales.**



**Yasuda:** The problem with F1 species and the agricultural business is just one of many examples. In the contemporary situation where global business is developing, firm cross-border business models and schemes have been built into a wide variety of industrial circles and sectors. Strong resistant forces act against environmental measures that affect these business models and schemes and try to get involved in government policy formulation. The improvement of the global environment requires you to change the business core, but this is why environmental experts believe that to realize this, individual citizens have to change their own lifestyles to get governments to take action.

In the meantime, there are many scholars who calmly argue that the environment and the economy are not in conflict with each other but that the two things can coexist. For example, those scholars include Professor Herman Daly at the University of Maryland and Professor Daniel H. Janzen at the University of Pennsylvania, both of whom won our foundation's Blue Planet Prize in 2014.

### **If you disregard environmental and social costs, you cannot enjoy sustainable economic growth**

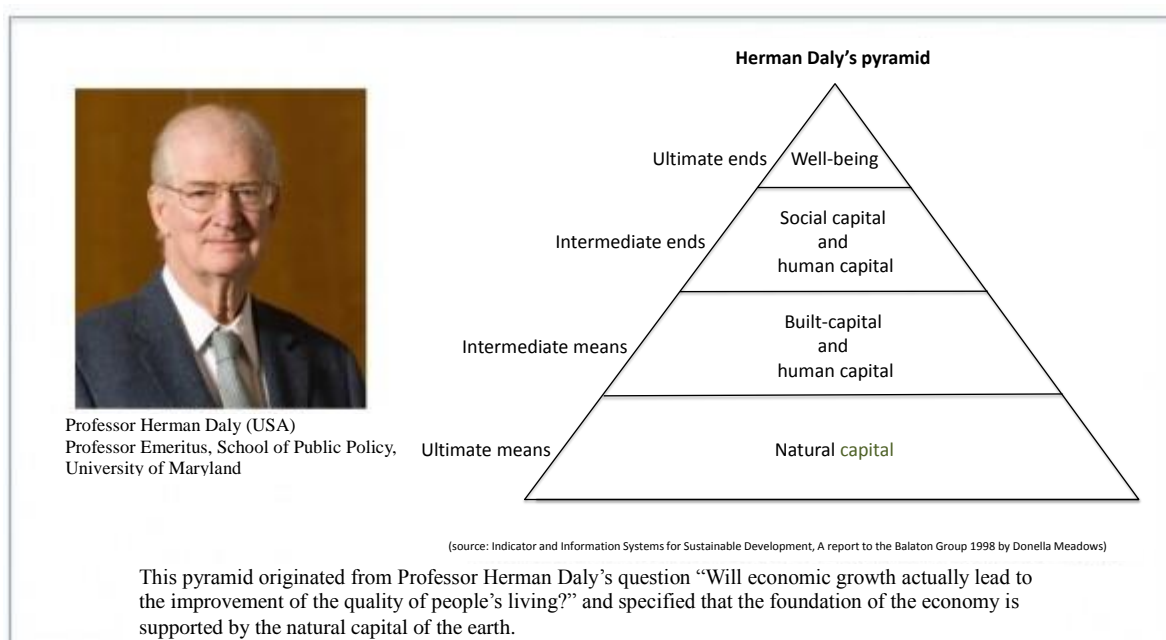
**Q: Professor Herman Daly established the basis of ecological economics in the 1970s. In recent years, some have doubted that Japan's nuclear power generation is an inexpensive source of energy in terms of the total social cost. Is it correct to think that Professor Daly is an economist who has held such a point of view since the 1970s?**

**Yasuda:** Resource economics and environmental economics have existed for many years in the field of economics. However, these are remarkably different from ecological economics, which Professor Daly put forward, in that they paid little attention to the limits of Earth and the cycle of energy and substances on Earth. That is, resource economics and environmental economics were based on the assumption that natural resources were infinite.

However, needless to say, Earth's natural resources are limited. As long as the economy is based on the existence of social resources, including nature, if you use up all the social resources, economic growth will inevitably stop. It is impossible for the economy to last infinitely on its own. Professor Daly's economics started with the question "What should we do to run the economy with limited resources?" To realize genuinely sustainable growth, you have to consider how to reproduce consumed resources and

how to build a mechanism for economic activities with limited resources. Conversely, as an economist (free from emotional argument), Professor Daly established the theory that economic growth based on the total calculation of social costs will definitely lead to the realization of sustainable economic growth.

This way of thinking may sound quite normal in the eyes of contemporary citizens, but Professor Daly was stigmatized as a heretical economist in the 1970s when the economy-first doctrine was predominant. Countries and governments all over the world, including Japan, are still unable to realize sustainable economic growth reflecting social costs.



**Q: In recent years, companies have introduced environmental accounting, but are these attempts not effective enough?**

**Yasuda:** I think that the above-mentioned discussion about nuclear power generation is a particularly easy-to-understand issue for Japanese people.

Nuclear power generation is inexpensive when compared with solar power generation, but fundamentally speaking, nuclear costs do not include the reprocessing cost of used fuel. The reprocessing method itself has not yet been determined and the exact amount

of used fuel has not actually been disclosed. It is also essential to consider security costs more seriously than ever with a keen focus on the damage caused by the tsunami triggered by the Great East Japan Earthquake. In addition, it is widely known that nuclear power generation involves the disposal of cooling water into the sea, which causes the temperature of seawater to rise and leads to the transformation and destruction of ecosystem. But these social costs, which affect biodiversity, are not considered in the calculation at all. The government has decided to restart nuclear power plants without publicly examining whether a structure is in place or not where economic activities are profitable when including environmental, security and social costs in electricity costs.

**Q: If you pursue economic growth, you should simply calculate costs. This sounds like a normal theory, but it boils down to the fact that the reason why this way of thinking, including the issue of electricity, is difficult for the business circle to accept, since people stick with profits from existing business models, that is, vested interests.**

**Yasuda:** Another reason why Professor Daly was labeled a heretical economist was that he redefined the ultimate goal of economic growth as human well-being. The word *well-being* does not sound fitting for an economist, but if you think simply, you can say that human beings seek economic growth to be happy. However, if you look back on the past from the postwar era to the present, you will find it difficult to say that economic growth has led to an increase in the standard of well-being. I think that this is partly because of the rule of diminishing utility and largely because environmental and social costs, which should be incorporated into the current economic growth strategy, are not accounted for in calculations and people are taking note of the negative aspects of excessive economic development.

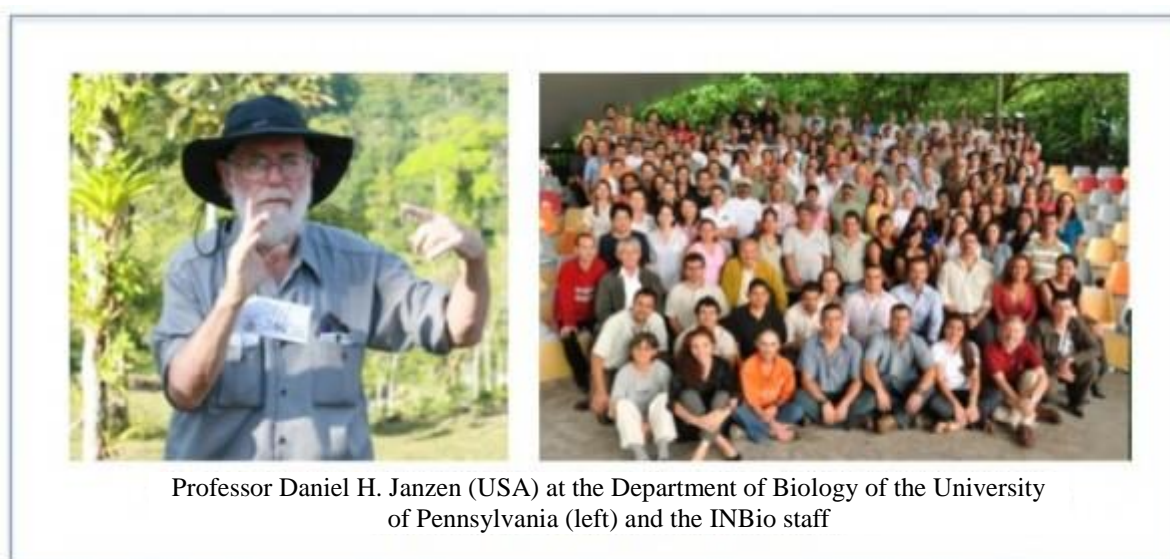
### **Practical action: Local production and local consumption**

**Q: I know that Professor Daniel H. Janzen (USA), another prize-winner, practiced the regeneration of tropical rain forests that had been destroyed and propelled natural conservation to national industrial creation through his activities at the Instituto Nacional de Biodiversidad of Costa Rica (INBio).**

**Yasuda:** The Instituto Nacional de Biodiversidad of Costa Rica (INBio) was established in 1989 when tropical rain forests were used for agricultural land through excessive deforestation and biodiversity was destroyed. Professor Daniel H. Janzen contributed to the foundation of the institute and succeeded in regenerating a vast field, equal to the

entire area of Tokyo, back into a tropical rain forest with the participation of the Costa Rican government and local residents.

In addition, the natural conservation activities practiced by Professor Janzen and the institute revitalized the Costa Rican economy. Ecotourism, a fusion of environmentalism and tourism, created local employment opportunities and locally collected biospec information is provided to pharmaceutical companies. Unlike F1 species that are artificially developed, breeds grown through natural biodiversity have strong resistance to pathogens.



**Q: Their activities aimed to facilitate coexistence between the environment and the economy from the beginning, right?**

**Yasuda:** The key phrase is the mechanism of “local production and local consumption.” Both Professor Janzen’s actions in Costa Rica and Professor Daly’s concept of ecological economics aim to achieve the same target goal.

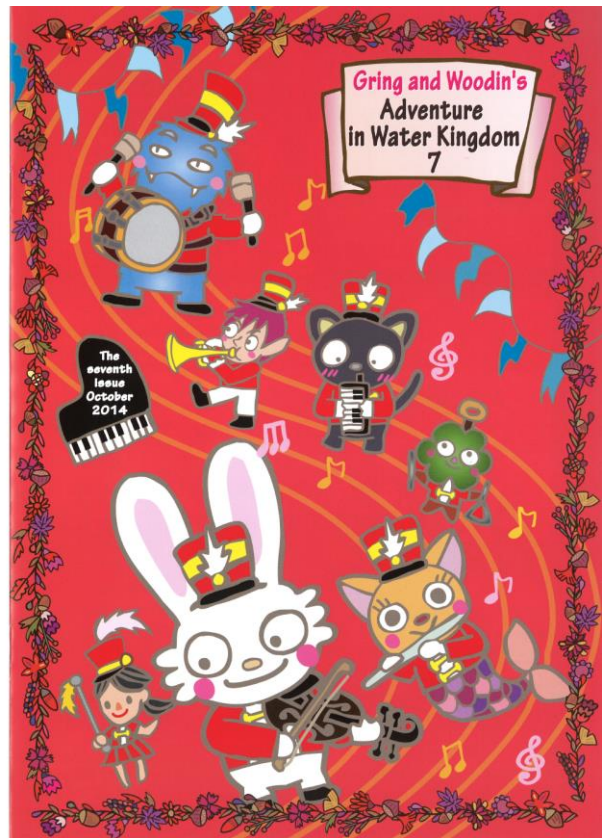
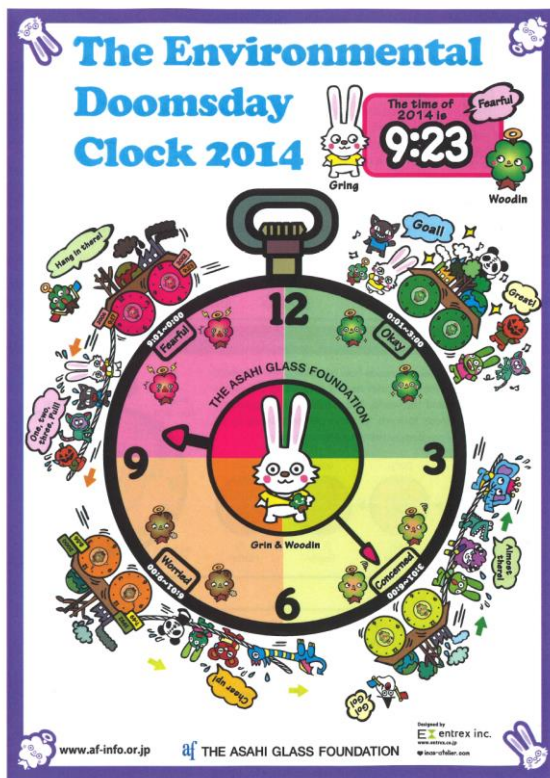
A system in which a particularly huge business model runs the global economy can no longer work properly and now is the time to switch to the creation of a local recycling-oriented society. In this process, forces that try to resist the destruction of existing business models appear. But I think that the creation of a new industry suitable for a local recycling-oriented society will help further the growth of Japan and the global economy.

For example, solar cell-powered vehicles are a topic of discussion. If a nationwide network-based power supply system were established, automobile manufacturers could enjoy greater expectations for building new business models and realizing further growth. In addition, there are many regions where pumped hydroelectric storage is available across the country. If a system were established for the generation of power at the level of individual households and villages by pumping water up at night and then running the water down from a high place during the day when there is greater demand, it would be useful for peak power measures and disaster preparedness. However, it is quite difficult for a single small community to generate all the necessary power on its own. It is important to secure a system in which individuals and companies are free to make multiple choices, including the combined use of power supplied from electric companies.

**Q: Even if it is said that economic growth requires deregulation, it is difficult to get a clear specific image, but this means that you need a flexible system that combines a great variety of choices, right?**

**Yasuda:** For example, if you were free to change power suppliers on your own accord, it would be just like getting the right to vote as an individual. If that happens, individuals can represent their own ideas in social systems more easily.

As I mentioned at the beginning of this interview, we will be living in an age in which individual awareness changes countries and society from now on. You have to break away from the conventional way of thinking that only experts should understand environmental problems; you have to make an effort to communicate specialized knowledge to individuals in an understandable way and to develop your skill to disseminate information. Based on this recognition, I think that it is important to take an individually-chosen society as the “shared responsibility of humankind.” (December 2014)



*Gring and Woodin's Adventure in Water Kingdom 7*, a story in which Gring, the rabbit, makes a journey to help his friend Woodin, who was discouraged at the degradation of the global environment.

You can check out the book at the foundation's website:

[http://www.af-info.or.jp/gw\\_clock/adventure.html](http://www.af-info.or.jp/gw_clock/adventure.html)

- See Part 2 for the memorial lecture from Professor Daly and Professor Janzen.

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