

af News

THE ASAHI GLASS FOUNDATION

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2009 Blue Planet Prize Awards Ceremony and Congratulatory Party

The Asahi Glass Foundation awarded the 18th annual Blue Planet Prize at the ceremony held at Tokyo Kaikan on October 21, 2009. The recipients of the award this year were Professor Hirofumi Uzawa of Japan and Lord (Nicholas) Stern of Brentford of the United Kingdom. Professor Uzawa has advocated the concept of Social Common Capital from a very early stage as a theoretical framework to deal with environmental issues such as global warming and has established pioneering and highly original achievements. Lord Stern reported the economic and social impacts of climate change and actions to be taken to cope with it in *The Economics of Climate Change* using cutting-edge knowledge in natural sciences and economics. In doing so, he has provided clear policies in confronting global warming and made a tremendous influence worldwide.

The ceremony was graced by Their Imperial Highnesses Prince and Princess Akishino and numerous distinguished guests, including ambassadors and representatives from government, academia, and business.

The ceremony opened with a video presentation. The film was created with the hope of encouraging people to give a thought on the privilege of living on this blue planet by prompting them to think about the gifts of Earth, the planet of life. The presentation was followed by introductory remarks from Mr. Hiromichi Seya, Chairman of the Foundation, a report on the selection procedures, and the introduction of award winners from Dr. Hiroyuki Yoshikawa, Chairman of the Selection Committee.

Remarks from Prince Akishino was followed by a congratulatory message from Prime Minister Yukio Hatoyama read by Mr. Haruhumi Mochizuki, Vice-Minister of Economy, Trade and Industry. As representatives of the native countries of the recipients, Professor Ichiro Kanazawa, president of the Science Council of Japan, and Ambassador David Warren of the United Kingdom also complimented the laureates for their dedication to environmental issues and their many accomplishments.

The Awards Ceremony was followed by a Congratulatory Party. Well-wishers surrounded Professor Uzawa and Lord Stern throughout the evening, helping them celebrate the occasion, while toasts were proposed in recognition of their tremendous achievements.



Prince Akishino offers remarks at the Blue Planet Prize Awards Ceremony



Professor
Hirofumi Uzawa



Lord (Nicholas) Stern of
Brentford

International measures and individual actions if social systems that can cope

Remarks Made in Accepting the Blue Planet Prize

Professor Hirofumi Uzawa



It is a great honor for me, a mere economist, to receive the prestigious Blue Planet Prize. I will stay mindful of the weight of this responsibility and always continue to try and improve.

Social Common Capital refers to the natural environment and social mechanisms that enable people who live in a given country or specific area to pursue a life of economic affluence, develop fine culture and maintain a humanly attractive society sustainably and stably. It is managed and operated as the common assets of all of society in accordance with society's standards. Social Common Capital is comprised of three categories: natural environment, social infrastructure and institutional capital.

Natural environment consists of a wide variety of components, including mountains, forests, rivers, lakes, swamps, wetlands, oceans, water, soil and air.

Social infrastructure consists of roads, bridges, railroads, water and sewage systems, electricity and gas, postal and telegraph systems.

Institutional capital consists of institutional components including educational institutions, hospitals and medical institutions, financial and monetary institutions, judicial and police systems, public administrative services, publishing and journalism, and cultural capital.

Social Common Capital is related to the sacred act of treasuring our valuable heritage that mankind has left to us and passing it on to the next generation.

Social Common Capital may be owned by either public or private bodies, but regardless of the owner, it must be managed and operated in accordance with society's standards.

As we have entered the 21st century, problems plaguing the global environment, such as global warming and the loss of biodiversity, hang over us like a Sword of Damocles, as probably the most serious problems mankind has ever faced. Carbon dioxide, a chemical that is inherently nontoxic to humans, has been emitted in large amounts through human activity, accumulated in vast quantities, it has disturbed the equilibrium of the natural environment on a global scale and caused irreversible change to ecological conditions to the extent of severely impacting not only humans but all creatures on the earth, into future generations. Again I would like to stress that Social Common Capital must play a core role in overcoming the global environmental crisis to realize sustainable economic development in harmony with the natural environment.

Lord (Nicholas) Stern of Brentford



It is an extraordinary honour for me to receive this year's Blue Planet Prize of the Asahi Glass Foundation; and it is a special privilege that this is the first time in its eighteen years of existence that the prize has been awarded for

the first time to those from the economics. And I am particularly honoured to receive it in the same year as the very distinguished Professor Hirofumi Uzawa. I was fortunate to meet Professor Uzawa at a conference on economic growth almost 40 years ago and I have followed his very important work with great respect and interest.

The Prize was founded at the time of the landmark United Nations conference on the environment, 'the Earth Summit' which marked the global recognition of the risks from climate change; the scientists working on the Inter-Governmental Panel on Climate Change (IPCC), launched in 1988, had already begun to draw international attention to the severity of this problem. Now, more than 20 years from the founding of the IPCC, the world's leaders and the public as a whole are coming to grips with the magnitude of the challenge. The scientists have done an outstanding job in helping us understand the huge risks. We are the first generation which, through our neglect, could in the next few decades, destroy the relationship between human beings, their economic, their social and other activities and their habitat, and the planet.

Making policy requires careful analysis from the social sciences on how to manage and reduce these great risks. Action raises fundamental economic, political, and international issues. But it is crystal clear that inaction or weak and delayed action is far more costly than strong and timely action. We can not only reduce radically the severe risks that we now face, but also launch a new era of progress and prosperity as we make the transition to a low-carbon economy in the next two or three decades. And the low-carbon world economy which we can create will be more energy secure, cleaner, quieter, safer and more bio-diverse. The choice is surely clear. The stakes could not be higher. Now is the time for the world to get together to decide and to act. The United Nations Framework Convention on Climate Change, established at Rio, will next meet in Copenhagen in December this year. This is the most important international gathering since the Second World War. It is our moment of decision. Let us now, together, take that decision as a world.

tion are required with global warming are to evolve.



Selection Rationale Dr. Hiroyuki Yoshikawa, Chairman of the Selection Committee

Professor Hirofumi Uzawa

Professor Uzawa proposed the pioneering concept of Social Common Capital for a society to achieve stable and sustainable development, based on which, from a very early stage, he advocated measures for conservation of the global environment and against climate change. He has not only had profound influence on but also made significant contributions to Japan and the world. This concept was incorporated in the books titled, *The Economics of Global Warming* (1991) and *Economic Analysis of Global Warming* (1993) and other series, through which his foresight, creativity and influence have become widely known around the world. In 2009, Professor Uzawa authored *Global Warming and Economic Development* as he continues to actively work on his concept, exercising his leadership to find solutions to climate change, the world's greatest environmental threat, from an economic perspective.



Lord (Nicholas) Stern of Brentford

Lord Stern applied the latest science and economics and reported on the economic and social impact of climate change and countermeasures in *The Economics of Climate Change*. He provided fair and clear policy measures against global warming in line with economic principles, which greatly influenced the world's efforts to combat global warming. In the report, he indicated that the future amount of damage incurred by climate change could amount to up to 20% of the world's GDP, whereas countermeasures would cost around 1% if measures are accelerated, pointing out the high cost-benefit performance. The report also sets forth concrete measures against global warming and consideration is made to encourage the world to implement them from the standpoint of fairness. Lord Stern continues to appeal broadly to the world's policy leaders and to the public for the soonest possible implementation of measures against climate change.

Extracts from the Profile Film Shown at the Awards Ceremony

Professor Hirofumi Uzawa



After playing rugby in his high school years, Professor Uzawa entered the Department of Mathematics, Faculty of Science, The University of Tokyo, 1948



He was invited to Stanford University by Dr. Kenneth Arrow, 1956

College years at The University of Chicago



Took part in composing the Pope's message to the world, 1990

Order of Cultural Merit, 1997



Published six-volume series, *Introduction to Intriguing Mathematics* for the children of the future generations, 1998



Lord (Nicholas) Stern of Brentford



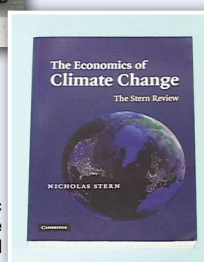
After spending his boyhood interested in sports and jazz, he entered Cambridge University and majored in mathematics



Began visiting a rural village in India every year from 1970 and continued to investigate the economic developments took place there for 35 years



From 2000 to 2003, as a Chief Economist and Senior Vice-President of the World Bank



Collected scientific and economic information on climate change from experts around the world and released *The Stern Review*, 2006



The Stern Review was taken up at COP13 and COP14 and captured the global attention



With LSE staff

Blue Planet Prize Commemorative Lectures

On October 19, the award recipients delivered commemorative lectures at U Thant International Conference Hall at the United Nations University in Tokyo. More than 400 people attended, filling the auditorium to capacity. Professor Uzawa gave his lecture in the first section of the program, which was followed by a question-and-answer period coordinated by Professor Kazuo Matsushita, Graduate School of Global Environmental Studies, Kyoto University. Lord Stern presented his lecture in the second half, with a question-and-answer period coordinated by

Professor Kazuhiro Ueta, Graduate School of Economics, Kyoto University. The coordinator's skillful dialogue and the progression of the question-and-answer period led to a lively session that attracted many questions from the audience, resulting in a rich and substantive discussion. The session offered the attendees greater insight into the accomplishments of the recipients, as well as a valuable opportunity to reflect on the guiding principles of their own actions. With the dynamic discussion, the four hours passed unnoticed.



❧ Worldwide Poll of Environmental Practitioners ❧

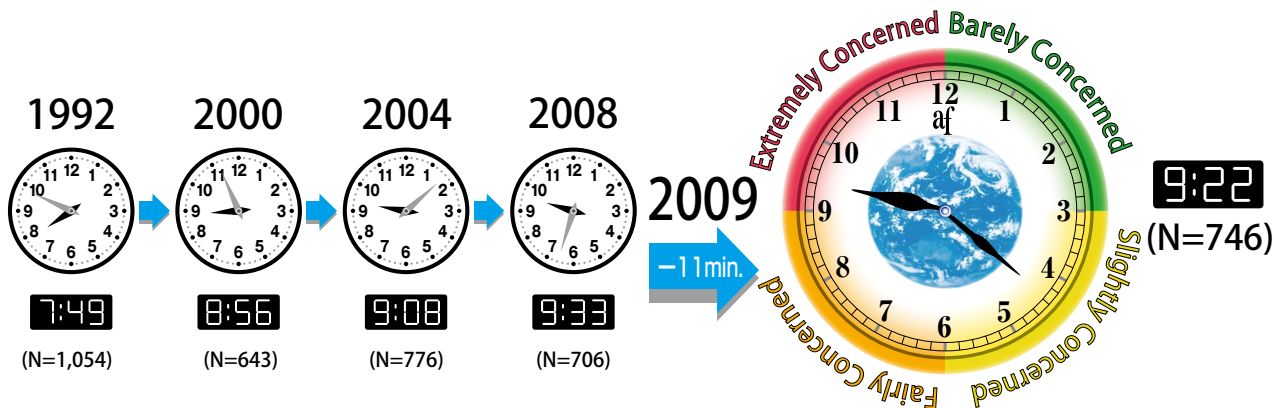
Results of the 18th Annual Questionnaire on Environmental Problems and the Survival of Humankind

The questionnaire, which has surveyed experts involved in environmental problems across the world since 1992, has been intended for people worldwide to establish a common understanding and cooperative relation to solve the environmental problems, because it is imperative to have a global measure to conserve the global environment. This year, the survey included the customary questions about the environmental doomsday clock and Agenda 21. In addition, it also focused on specific environmental problems and their priorities. The following is a report on the environmental doomsday clock, a subject regularly attracting a high level of interest. We are indebted once again to Professor Akio Morishima, Special Research Advisor of the Institute for Global Environmental Strategies and a director of the Asahi Glass Foundation, for his assistance in formulating and compiling the survey. (Questionnaires returned: 757 (Japan 324, overseas 433), response rate: 17.8%.)

To see a more complete excerpt of the survey, please access the Foundation's web site (<http://www.af-info.or.jp/en/index.html>)

❖ Environmental Doomsday Clock (Perception of the Crisis Facing Human Survival) ❖

The environmental doomsday clock shows the sense of crisis the respondents have on the survival of mankind by using the needles of a clock. The average time on the Environmental Doomsday Clock retreated by 11 minutes from last year to 9:22 p.m., still showing a high sense of crisis being the third most advanced time recorded. The result from overseas respondents was 9:32, advanced 6 minutes from the previous year, whereas Japanese respondents retreated 34 minutes from the previous year to 9:08.



Grantees Report

Some of the largest or more unique of the supported research projects currently active are listed below

Task-Oriented Research Grants Adopted in FY2008

Title: Exploring the Impact Factors of Urban Smog Events: An Observational Approach Based on Unique Analytical Techniques

Recipient: Assoc. Prof. Kenichi Tonokura, Environmental Science Center, The University of Tokyo, and two other parties (Total amount of grant: 14.5 million yen, Grant period: 2 years)

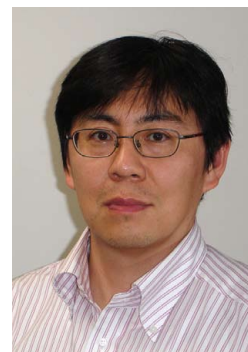
Entering the 21st century, the occurrence of photochemical smog has been gradually increasing, especially in urban areas.

This is considered to be associated with the increased volume of ozone precursors flowing from East Asia and the fluctuation in nitrogen oxide (NO_x) and hydrocarbon (HC) emissions. The source of the gradual increase of photochemical smog, however, has not been identified. This research is a social action project aimed at developing new technology for measuring the trace components in the atmosphere involved in the occurrence of smog, probing the cause of photochemical smog's gradual increase in urban areas and



Pulse Differential Absorption Spectrophotometer developed in this research project to measure nitrogendioxide

providing the government with useful data for devising effective countermeasures. In the summers of 2008 and 2009, we conducted comprehensive photochemical smog observations at the University of Tokyo's Hongo campus. These observations, performed with a spectrometer and aerosol mass spectrometer that we remodeled from an astronomical telescope, suggest that atmospheric photooxidation caused by the volatile organic compound emitted in Tokyo and the nitrogen oxide (NO_x) emitted from the Keihin and Keiyo industrial areas, as one of the mechanisms responsible for photochemical smog in central Tokyo.



Continuation Grants for Young Researchers Adopted in FY2008

Title: Study on the Transformation of Tibetan Buddhist Society in Mountainous Areas of Nepal – Pursuing Establishment of a Sustainable Social System in Rural Areas

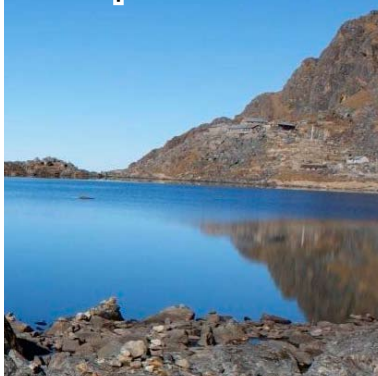
Recipient: Assoc. Prof. Kazuko Tatsumi, Extension Center, Yamaguchi University (Total amount of grant: 4.5 million yen; Grant period: 3 years)

This research project is for identifying how a sustainable social system should be established based on community rooted in unique regional culture and faith by observing dynamics in societies in the mountainous areas of Nepal from both macro and micro perspectives for a period of approximately 10 years. Referring to the transition that took place in Japan's village communities that pursued modernization with a priority on economic development, the project examines the meanings of affluence, of alternative growth and development, and other subjects. It also aims to contribute to future regional development in Nepal by transmitting the information on the region studied.



Discussion on livelihood problems

Sacred place Gosainkund

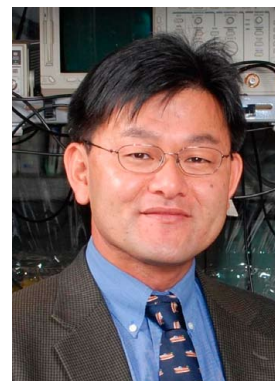


In Nepal, you awaken to the sound of bells. This sound means people are praying. In the sacred place called Gosainkund (at an altitude of 4,380 meters) in the Himalayas, in the study's subject region, numerous piles of stones symbolized people's wishes. Modernization and globalization have reached deep into the mountains but spiritual culture and faith are deeply embedded and still remain in people's lives.

Continuation Grants for Outstanding Projects Adopted in FY2008

Title: Development of a Practical Microforce Materials Tester

Recipient: Prof. Yusaku Fujii, Department of Electronic Engineering, Faculty of Engineering, Gunma University (Total amount of grant: 13 million yen; Grant period: 3 years)



Accurate measurement of microforce is highly important for the advancement of MEMS (microelectromechanical system) as well as material development and evaluation technologies. Under an Asahi Glass Foundation research grant, I previously developed a system that generates and measures microforce. For the Continuation Grants for Outstanding Projects, I have been developing a more practical and highly accurate materials tester.

In this research project I aim to develop a materials tester in the area of microforce by applying the Levitation Mass Method (LMM) that I proposed and developed. LMM is a dynamic force generation and measurement method characterized by acquiring the inertia force of a mass levitated (inertial mass) with a high degree of accuracy using an optical interferometer. During the experiment the optical interferometer only measures the value of the Doppler shift frequency of the signal beam reflecting on the mass. The velocity, position, acceleration and inertial force of the mass necessary for materials testing are calculated from the numerical differentiation and numerical integration values of the frequency. So far I have developed important elemental technologies, including an aerostatic bearing, highly accurate frequency estimation method, lightwave circuit design method, and low-noise optical interferometer. Through this research I hope to bring a new dimension to microelectronic technology and make a substantial contribution to academia as well as industry.



Laboratory equipment prototype

Task-Oriented Research Grants Adopted in FY2009

Title: Development Aimed at Popularization of a Robotic Suit for Farming

Recipient: Prof. Shigeki Toyama, Institute of Symbiotic Science and Technology, Tokyo University of Agriculture and Technology, and 2 other parties (Total amount of grant: 18 million yen; Grant period: 3 years)



The aging population is a serious problem in Japan's farming industry, and a large number of seniors over 75 are working as important leaders in this field. Given this background, our project is developing a power-assist suit that will make farm work easier for the elderly.

At first glance the 26-kg robotic suit shown in the photo looks heavy. Yet it has been designed so the wearer does not feel its weight. It is burden-free and easy to slip on and

off. It can assist movement that involves arms being lifted for a long time for harvesting and pruning fruit trees, forward-bending movements such as strawberry-picking, and lifting of heavy objects. In energy-saving mode, a one-time battery charge allows work for eight hours straight.

In the current research project, we will further lighten the weight of the prototype to improve it as a robotic tool that reduces the burden on workers' knees and lower back. We are also examining expansion of its use. We will strive for our research and development to be beneficial to society.



Daikon harvester wearing a farming power-assist suit



❖ Announcement ❖

The Asahi Glass Foundation became a Public Interest Incorporated Foundation as of December 1, 2009.