



Blue
Planet
Prize

FOR IMMEDIATE RELEASE

June 14, 2000

**2000 BLUE PLANET PRIZE:
ANNOUNCEMENT OF PRIZE WINNERS**

Dr. Theodora E. Colborn (U.S.A.)

For multidisciplinary research to reveal the threat posed to humans and wildlife by chemicals that interfere with the endocrine system, and for warning about the perils of these substances.

Dr. Karl-Henrik Robèrt (Sweden)

For scientifically laying out the systems perspective needed to plan strategically for sustainability and for changing the environmental awareness of businesses, municipalities and others.

The Asahi Glass Foundation (Chairman Hiromichi Seya) has announced the recipients of the 9th Blue Planet Prize, an international environmental award. The Blue Planet Prize is awarded annually to two individuals or organizations that have made outstanding scientific contributions to global environmental conservation.

The following individuals were selected as the recipients of the Blue Planet Prize for 2000.

Dr. Colborn revealed through systematic research that certain types of chemical compounds pose a danger as disruptors of endocrine systems to the development, function, survival and reproduction of wild organisms and people. She warned of these dangers and advocated the establishment of academic studies and research organizations to investigate endocrine disruptors. She has also appealed for global regulation of these substances.

Through interaction and debate with top scientists, Dr. Robèrt summarized the basic guidelines that have to be followed in order to create a sustainable society into four system requirements. These concepts have been endorsed not just in Sweden but in many other countries because of the activities of The Natural Step (TNS), the organization he founded. This organization has made a large contribution to environmental planning and measures taken by businesses and all levels of government.

The recipients will be awarded certificates of merit, commemorative trophies and supplementary awards of 50 million yen.

The award ceremony will be held on Thursday, October 26, 2000, at the Imperial Hotel in Tokyo (Chiyoda-ku), which will be followed the next day by commemorative speeches delivered by the recipients at the United Nations University in Tokyo (Shibuya-ku).

(For further information about the winners, please see the attachment.)



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Remarks from the Award Recipients upon Being Notified of Their Selection

Dr. Theodora E. Colborn

"I am deeply humbled and very honored to be the recipient of the Blue Planet Award. I also rejoice because it provides an opportunity to reach vast audiences worldwide with the message that man-made chemicals can alter the destiny of those who are exposed in the womb or the egg before birth—a message that embraces the well-being of future generations of humans and wildlife. This award also extends to the academic and government scientists who provided the cutting-edge science which revealed how these chemicals can cause harm before birth and who had the courage to speak out about the implications of their findings; to my co-authors, Dianne Dumanoski and Pete Myers, who effectively translated the complex science of endocrine disruption into a readable book, *Our Stolen Future*; to the many foundations that supported my work for the past 13 years; and to my dedicated co-workers in Washington DC—all who will rejoice because the Blue Planet selection committee decided that endocrine disruption is worthy of this most prestigious award.

After World War II as technology shifted toward improving the global economy and quality of life, little thought was given to the results of releasing vast amounts of man-made chemicals into the natural environment. Now, after half a century, we find that our children and the environment are paying for this mistake. Endocrine disruptors were not on the agenda at Rio. The world must unite to ensure that endocrine disruptors are never left off an environmental agenda again."

Dr. Karl-Henrik Robèrt

"When the global society is sustainable, pollution will no longer increase, nature will no longer be impoverished through physical degradation, and within that frame, human needs will be met globally. In this context, the word "strategy" means to ask the following question: "What shall we do to get there?" We need role models – firms, municipalities, other organizations, and individuals – asking themselves that question. The Natural Step is an international, science-based NGO with a vision of an attractive society that is socially, ecologically and economically sustainable.

We look for organizations that want to become such role models, and then we coach them *strategically* so that their intelligent business programs for social and ecological responsibility will pay off economically too.

I started The Natural Step in Sweden 11 years ago, and today it has spread to eight countries. In each national office, the start-up period has been dependent on people with the willpower to sacrifice personal time and resources for a higher cause. Though these incredibly devoted people have been self-selected, it has nevertheless been painful for me not to be able to thank them more substantially other than with gratitude.

Based on the above, the Blue Planet Prize – given to me personally – has given me the opportunity to fulfill a major dream of my life. I can donate the money to a fund, the purpose of which will be to support international cooperation in line with The Natural Step philosophy.

It is with humility and gratitude that I accept this award, looking forward to cooperation with the wonderful Japanese culture for a better world."

Profiles of the 2000 Blue Planet Prize Recipients

Dr. Theodora E. Colborn

Since the expression “endocrine disruption” made its debut in the Japanese media in 1996, the existence of substances that impair endocrine function became widely known in Japan. Various government agencies and ministries, including the Environmental Protection Agency and Ministry of Health and Welfare, began drawing up measures to deal with them. It was zoologist Theo Colborn, director of the Wildlife and Contaminants Program, World Wildlife Fund, who first compiled the information from many scientific disciplines indicating that there were synthetic chemicals in the environment that look like or interfere with natural hormones that control development from the moment the sperm enters the egg until an individual is born. Even as she pursued her career as a pharmacist, Dr. Colborn continued to take a keen interest in environmental conservation, one that had begun in her early years. Motivated by this interest, she entered graduate school at the age of 51 and researched the relation of riparian pollution to the insects dwelling in waterways. In 1985, she received her doctoral degree at the age of 58. She went on to study water pollution in North America’s Great Lakes area, which was attracting public attention because of declining wildlife populations and the discovery of developmental, reproductive, behavioral and immunological abnormalities as well as deformities. Although it had already been suspected since the 1950s that man-made chemical pollution was linked to abnormal sexual development and reproductive anomalies in wildlife and separately in humans, the complexity of the problem had precluded anyone from confirming the relationship.

Based on an extremely large database, Dr. Colborn searched the literature into the abnormalities discovered in wildlife and humans in the Great Lakes area, confining her research to their relationship to cancer. However, she was not able to find a correlation with cancer. When she realized that she had overlooked the diversity of the data in her stereotypic search for “cancer-causing agents,” Dr. Colborn formulated the hypothesis that the abnormalities might be linked to the disruption of hormones by synthetic chemicals. She concentrated her research on 16 animal species that were experiencing the most problems. In due course she discovered that (1) the wildlife exhibiting abnormalities in the Great Lakes region were eating the lakes’ fish, (2) it was primarily the affected species’ young that were exhibiting problems, (3) the various synthetic chemicals extracted from the body fat of the animals acted on the endocrine system, and (4) hormones take effect even at concentrations below detection. Based on this knowledge, she conjectured that synthetic chemicals released into the natural environment were being concentrated in the food chain and disrupting endocrine systems. As her research progressed, this hypothesis gradually took on certainty.

At some point in 1990 as she was gazing at the dome of the capitol building from her apartment in Washington, an intense thought began to run through her mind. “What if it is not just the reproductive capability of animals that we are jeopardizing? What if we are harming our own?” This insight was substantiated by reports of experiments with a group of persistent organochlorine chemicals that include PCBs, dioxin, and pesticides such as DDT. Then the next year in 1991, she co-organized a historic conference on endocrine disruptors in the State of Wisconsin along with ecologist colleague Dr. John Peterson Myers, inviting 21 researchers from various fields such as zoology, endocrinology, epidemiology, and toxicology, which had hitherto all conducted their research separately. At the conference, the proposition that synthetic chemicals released into the environment disrupted endocrine systems and impacted the reproduction, development and physiology of wildlife

and humans was debated academically and produced the unusual result for a scientific conference that all participants were unanimous in supporting the "Wingspread Consensus Statement." They also decided to produce a technical book "Chemically-Induced Alterations in Sexual Development: The Wildlife/Human connection" which was released in 1992. It advised that the endocrine disruptor chemicals that threatened wildlife were endangering the future survival of humankind, and this was a problem that had to be dealt with expeditiously.

Nineteen-ninety-six saw publication of the book that Theo co-authored with Dianne Dumanoski and John Peterson Myers, "Our Stolen Future." Easy to read, this tome explains the particulars of how the numerous persistent synthetic chemicals dispersed widely around the world have been concentrated via the food chain and introduced into our bodies, disrupting the endocrine systems of both wildlife and humans. This is causing abnormalities in the workings of everything from sexual development to behavior, intelligence and immune systems, and bequeathing the devil's inheritance to the next generation. This book has had an impact on the world that is comparable to that of Rachel Carson's "Silent Spring." For example, it has motivated the U.S. Environmental Protection Agency and many academic laboratories around the world to study the issue seriously. In the book, Dr. Colborn advises caution about endocrine disruptors that have been widely dispersed into the environment, comments on the urgency of this problem and suggests what needs to be done.

After the book was published, the endocrine disruptor problem was given extensive attention at the United Nations and the Organisation for Economic Co-Operation and Development (OECD) as well as in Japan and countries in Europe and North America. As a result, numerous surveys, research and policy initiatives have been launched to look into the issue.

The large volume of material investigated and analyzed by Dr. Colborn and the overall understanding of the picture that she supplied, as well as her active role in presenting this information to the world, have sparked a worldwide discussion of this vital problem, which has implications for the very survival of humans and countless animals.

Education and Academic and Professional Activities

1927	Born in the United States
1947	B.Sc. Pharmacy, Rutgers University
1981	M. Sc. (Fresh Water Ecology), Western State College of Colorado
1985	Ph.D. (Zoology), University of Wisconsin-Madison
1985-1987	Congressional Fellow, Office of Technology Assessment
1988-1993	Researcher, World Wildlife Fund
1993-Present	Senior Scientist, Director of the Wildlife and Contaminants Program, World Wildlife Fund

Major Awards Received

1990	Fellowship from the W. Aton Jones Foundation
1991	The National Water Alliance Award
1993	Pew Scholars Award
1994	National Conservation Achievement Award
1997	United Nations Environment Program, Women Leadership in the Environment Award
1997	State of the World Forum, Mikhail Gorbachev "Change Makers Award"
1999	Norwegian International "Rachel Carson Prize"

Dr. Karl-Henrik Robèrt

The importance of developing a sustainable society is now gaining increasing recognition. This is partially a result of Dr. Robèrt's major global contribution. As a cancer scientist and medical doctor, he felt a growing sense of alarm about the way that the environment for human and animal cells was deteriorating even though the cells themselves had not changed significantly. He arrived at the idea that to avoid further ravaging the environment it would be necessary to integrate societal activities within natural cycles and create a society in which resources were consumed within the scope of nature's providence. In other words, he believed that we needed a sustainable society.

Having wide-ranging knowledge, the doctor consulted about environmental problems — which appeared to be extremely complex and to have no end in sight — with leading Swedish scientists in all disciplines of the natural sciences. The outcome was a systems perspective, leading to a unique framework for strategic planning. To make the framework operational, basic principles for sustainability needed to be developed—the System Conditions:

In a sustainable society, nature is not subject to systematically increasing...

- 1) ...concentrations of substances extracted from the Earth's crust.
- 2) ...concentrations of substances produced by society
- 3) ...physical degradation.

And, in that society...

- 4) ...human needs are met worldwide.

Moreover, he pointed out that the environment and the economy were not mutually antagonistic and suggested that environmental measures be perceived anew as investments in the future. Namely, he advocated that companies should not limit their environmental activities to the use of technology to reduce resource consumption. They should also make necessary substitutions, become more socially responsible, and incorporate these conditions into their corporate planning for strategic reasons as a response to inevitable changes in the marketplace with regard to costs and customer preferences.

He has also published a strict rationale for this: civilization is – due to its violation of the system conditions – systematically loosing resource potential in life sustaining ecosystems. Resource productivity is lost in forests, agriculture, and fisheries – meaning larger resource inputs for the same harvest and catch. At the same time, pollutants and climate change inducing gases are increasing in the system and the number of people on earth is increasing as well. It's as though civilization were getting deeper and deeper into a funnel, where the converging walls represent decreasing room for maneuver. It can be shown an individual firm that contributes significantly to the convergence of the walls runs a statistically larger and larger risk of being hit by resource costs, waste management costs, insurance costs, lost market confidence, taxes and lost market opportunities in comparison with a firm that systematically and skillfully move to compliance with the System Conditions. Consequently, it makes perfect business sense to move to the opening of the funnel, rather than into its walls,(i.e. to systematically move towards compliance with the System Conditions).

Dr. Robèrt believed that a model country was required to establish a sustainable society based on cyclic processes and that Sweden could serve as that model. He founded the Natural Step organization in 1989 to promote the establishment of a sustainable society based on the results from the aforementioned systems thinking. This result has been elaborated and disseminated in a number of doctoral dissertations, publications in peer-reviewed journals, business seminars, and through the teaching of a large number of decision-makers in business and politics. With The Natural Step, corporate management and government policy makers are provided with a framework for formulat-

ing plans, and with this, they are able to tackle sustainability problems themselves within their own fields of competence and within their own firms. The Natural Step organization is brought together by its principles, which provide a compass for the decision-making of the various companies, government bodies and organizations that share them.

Soon after the organization was started, environmental pamphlets and cassette tapes were mailed to 4.3 million households and schools in Sweden to raise environmental awareness. Networks of professional people were formed at the front lines in various disciplines and authored consensus documents on various societal areas such as the energy sector, agriculture and forestry. Thus, environmental education was being achieved on the basis of consensual ideas. Other activities included the convening of a youth environmental parliament, the publication of a "citizen's environmental dictionary," and two exhibition trains that travelled through Sweden. In the cars, different companies showed how they had applied the TNS framework to their organizations. With the support of Sweden's monarch, the Natural Step organization initiated the King Gustav Environmental Contest in 1991 and continues to administer the competition.

Under the Natural Step's guidance, numerous companies and governmental organizations around the world are carrying out environmental measures. Examples are Electrolux, Scandic Hotels, Swedish McDonalds, Dupont, BP air, IKEA, Interface, and many others. As of 1998, most of Sweden's municipal authorities had begun to apply the four principles to the Agenda 21 issues singled out at the Rio Summit, from environmental education, to the promotion of bicycle use, and to waste reduction. With these role models, a number of municipalities in countries outside of Sweden have started to do the same.

As these examples indicate, Dr. Robert has set a clear course for the achievement of a sustainable society and shown the logic for promoting both environmental conservation and economic development. The advanced environmental activities of his Sweden stand as an example to the world and he is working with likeminded people to set up the Natural Step organization in several countries, such as the United Kingdom, the United States, Canada, Australia, New Zealand and South Africa.

Education and Academic and Professional Activities

1947	Born in Sweden
1975	Obtained his medical license, Karolinska Institute
1979	Ph.D. (Medicine), Karolinska Institute
1985-1993	Headed the Division of Clinical Hematology and Oncology at the Department of Medicine in the Huddinge Hospital
1987-1993	Chief Editor, Reviews in Oncology
1989	Founded the Natural Step environmental organization
1995-	Professor of Resources Theory at the University of Gothenburg

Major Awards Received

1984	Swedish Hematological Association Research Award
1991	Best Social Invention, Institute for Social Inventions, London, England
1994	Stockholm City Council Prize
1996	Swedish Forestry Association Prize



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<http://www.af-info.or.jp>

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Message to the Japanese Public

Dr. Theodora E. Colborn

In selecting me for this award, the Blue Planet Award committee alerted the world to the serious concern that synthetic chemicals are altering the fate of generations. All animals, including humans, are born today with these chemicals in their bodies—chemicals that could have already damaged their immune, nervous, reproductive, and endocrine systems. A cornerstone of endocrine disruption is the fact that mothers share these chemicals with their babies before birth—chemicals that can undermine intellectual potential and quality of life. Japan is actively engaged in resolving the problem to the benefit of its people and the world, and this commitment will be greatly appreciated by future generations.

Dr. Karl-Henrik Robèrt

Sustainable development can be regarded as a wonderful family game. In this case, the family is the global society. When many people are playing together, they must have a shared vision of the principles for success. It is only when you know these principles that you can avoid confusion, enjoy the game and see its beauty. The Natural Step is a science-based NGO that helps organizations around the world to see themselves as a part of the global society, and to play sustainable development in such a strategically elegant way that they can serve as role-models nationally, as well as internationally.

Appendix

Unique Framework for Strategic Planning By the Natural Step

- 1) The myriad's of problems in nature that are related to non-sustainability, are generally "fixed" one by one as they occur, with filters and so on, often leading to new problems later on. This is called "downstream thinking".
- 2) This fixing of problems was often expensive, yet led into dead ends, i.e. new problems appeared later ahead. Investments should instead be launched that could be further developed to the endpoint - sustainability. To start the planning from an imagined point of success is called "backcasting".
- 3) To be able to think "upstream", and to plan in line with "backcasting", we need basic principles that define sustainability. This means principles that cover distinct aspects of sustainability, and that can be used for hands-on planning regardless of the field of activity.
- 4) Based on this reasoning, four system conditions were identified. A concrete framework was developed, in which it is explained how the system conditions can be used in a strategic way to deal with those problems.