

Preface

This book is a compilation of lectures entitled “A Strategy for Energy and Resources”. These lectures comprise one of the Environmental Leadership (Training) Program (ELP) activities. I am managing the ELP with my colleagues, and teaching is one of my responsibilities. ELP falls within the Environmental Education Training Program supported by the Science and Technology Agency (JST). This essentially means that it is “supported by funds for integrated promotion of social system reform and research and development of the Japanese Ministry of Education, Culture, Sports, Science and Technology (MEXT)”.

JST selected 17 Japanese universities for implementing the ELP. The purpose of this program is to foster young environmental leaders to lead the world in raising environmental consciousness, especially in Asia and Africa. Tohoku University was included in 2010 through the strong leadership of Prof. K. Tohji, the former dean of the Graduate School of Environmental Studies (GSES).

The formal name of the ELP at Tohoku University is “Strategic Energy and Resource Management and Sustainable Solutions” (SERMSS). The features of SERMSS are the following:

The key words are energy, resources, and water.

To nurture young, international environmentally aware leaders who are outstanding students of the Graduate School of Tohoku University as well as many stakeholders such as other universities, companies, and government bodies.

We look to heighten the professional research ability of students as we also seek to be practical so that our students will achieve comprehensive skills together with a bird’s-eye perspective of the issues.

For these purposes, we started SERMSS with Prof. Y. Y. Li and Prof. K. Tohji and the cooperation of many teachers and other staff. We invited Prof. M. J. Norton and Prof. J. E. Plagens to join the program. I believe that the success of SERMSS and publication of this book have been realized with their cooperation.

This book is a compilation of key 90 min lectures. Each lesson is under the direction of the GSES faculty members teaching in their field of expertise. We know that the concept of the environment covers a huge scientific and social realm and has a complex relationship with many important issues. Furthermore, a vast number of useful books already have been published. We also know that it is very difficult

to consider all environmental issues in only one volume. Still, we dare to publish this book because the environment is a most serious issue and we wish to position this publication of the environmental education and research activities of Tohoku University as one link in the total lineup of environmental studies.

Doubtless many of our readers are well aware of global warming as it provokes widespread abnormal weather in many areas all over the world. Environmental issues encompass more than just global warming, such as problems with resources, waste disposal, and manmade chemicals. The food and water supply—even the air (atmosphere)—are causes for concern now. In this book, we consider the following terms and their implications: “Sustainability”, “Overshooting”, and “Tipping Point”. We also consider “Science and Technology” and “Social Science”, which are manmade, and “Nature”, which is the capacity and balance of our earth. And we do not forget the aspirations of “Dreams” and “Hope.”

There are those who say that “our lifestyle can never return to bygone days.” Is this true? Please do not be confused by such statements. Our future and actions should never be determined and forced upon us by other persons. It is especially important that young people judge things for themselves and decide their own course of action. Unfortunately, some people take the wrong way in following their own desires because they have been caught up in greed. They sometimes forget the real purpose of life, and they only try to obtain material goods, authority, or a high position. It is important to have one’s own opinion and purpose.

I think that the present lifestyles of the developed countries greatly exceed suitable levels. There is much futility, injustice, and inequality. I also think that, while our science and technologies are outstanding, there are some lines of research that would best be left alone. I question whether manmade technology will be able to supersede nature. Until now, humans have acquired much knowledge and technology from nature. The result is that humans now have the power to destroy natural forests, rainforests, tidelands, coral atolls, rivers, lakes, even mountains. But can we exert the same creativity and beauty of nature? Will our technologies surpass nature? I worked many years in the field of research and development in natural science. I both admire and believe in science and technology. Still, I am aware that science and technology alone cannot solve these problems. We need the cooperation of many stakeholders in the social sciences.

I believe there are two pressing issues at present. One is the depletion of energy and resources. The second is far more serious and important, namely, that human activity has surpassed the capacity of the planet and its ability to cleanse itself. The outcome is that humans are destroying the balance of the earth. We have to change our lifestyles, especially in developed countries. And the developing countries must never repeat the same failures as the developed countries. When humans functioned within the capacity of the planet, they were a part of the total. But since the Industrial Revolution, human activities have increased exponentially. This is the main reason we have destroyed our earth’s equilibrium.

We ask young students in our classes to imagine what life was like 40 or 50 years ago. This question is very useful for them to dialogue with their parents and grandparents. It is always very useful to remember the past. Next, we ask them to

think about the present. And then we ask, “What do you think? Is the present better than the past?” We then ask them the next follow-up question, “Please imagine the future 40 to 50 years from now. Will it become better than now?”

I am at the age where I do not expect to be here in 40 or 50 years. However, the young students of today will be living in this future. They must look to their own future of 40 to 50 years from now. This is not only for them but also their children, grandchildren, and descendants. They cannot shirk from this. The young people of today have a big responsibility for their future and that of the earth’s. They will someday know the answer to the question of whether the future will be better than today.

I like the saying of the American Indians that “We have to consider the next seven generations.” (Or: “In our every deliberation we must consider the impact of our decisions on the next seven generations.” –From the Great Law of the Iroquois Confederacy–). This means that we have a responsibility for our children, grandchildren, and beyond. And I like the next saying from Japan: “Asking for little, and knowing sufficiency” 「少欲知足」. And I like the idea of being “one with nature” 「万物一体」.

Finally, I would like to take this opportunity to express my gratitude to many people. Thank you to the faculty members who have willingly undertaken the writing of each chapter of this book. I know that they are very busy. I would like to thank Prof. M. Norton for working with the authors closely to make the book valuable to both expert and general readers and for the time-consuming editing in English, and to my other co-editor Prof. Y. Y. Li for his advice and support throughout. I also appreciate the efforts of Ms. Y. Sasahara and Ms. M. Sasaki in helping us with organization and many matters, and also offer my thanks to our colleague Prof. J. E. Plagens for all his support for ELP. My gratitude also goes to the former dean Prof. K. Tohji and the new dean Prof. T. Yoshioka.

I would also like to give a word of thanks to my parents, wife, and son.

And I thank every reader who has picked up this book. It is our hope that this book will be helpful to all of you, if only in a little way. I close with my best wishes for a happy future for everyone in the hopes that the global environment will proceed in the direction of true sustainability.

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