

Introduction Strengthening social cohesion will create our future

It is the responsibility for current generation to achieve sustainable society with safety and security, in other words, to take the benefits of the Earth over the future children who will lead the next generation. But, we continue to face difficulties toward achieving global sustainability. The world's population is expected to grow to 9.3 billion by 2050. If the population keeps increasing and trends of the natural resource consumption continues, the scale of the consumption and the environmental impact is expected to become twice as much ecosystem recovery capacity by 2030, according to the World Wildlife Fund (WWF). The earth has been in trouble, with problems including water shortages, resource bottlenecks, climate change, water and air pollution, and irreversible biodiversity losses. These problems are caused by the growth of economic activities and increasing inequality gaps.

Following the Great East Japan Earthquake, Japan threw itself into recovering the affected area and revitalizing Japan. The largest earthquake and tsunami on Japan's record destroyed the people's livelihoods across a widespread area. The severe nuclear accident causes the enormous impact of radioactive contamination and left serious and long-term challenges for recovery, such as reconstructing local communities, mitigating natural disaster risks, and overcoming energy supply issues.

"The Future We Want" has been selected as the theme of Rio-20 which is to be held this June. The global issues that we face today force us to reconsider our lifestyle, economic activities, and even modern civilization that we humans have

achieved. We must make effort to understand each other and take action beyond significant gaps within all stakeholders, in order to share a future vision and achieve a sustainable society that will sustain 50 or even 100 years into the future. These actions will be more deeply strengthened by people becoming aware of their social cohesion.

The importance of the human bond becomes aware of people with the Earthquake as a start. People living in the affected area have faced the catastrophic disaster hand in hand. It was a scene that attracted great attention from the overseas, especially news media. Many people of entire nation voluntarily gathered in the affected area to support the victims, sent relief goods for suffering people and made efforts for energy saving. These all made an enormous contribution to Japan's ability to recover from the crisis immediately after the earthquake. Similarly, it is important for us to recognize that human bonds can be the power for overcoming the current sustainability crisis.

Under this current situation, the Annual Report on the Environment, the Sound Material-Cycle Society and Biodiversity 2012 describes: (1) Part 1, Chapter 1: Japan and global environmental situation refer to Rio+20, (2) Chapter 2: recovery progress from the Great East Japan Earthquake, (3) Chapter 3: reconstruction from the earthquake and establishing sustainable communities, especially focusing on local communities; and (4) Chapter 4: Japan's contribution to the international community with Japanese wisdom and world leading high-technology in the field of environment toward achieving a green growth.

Column Fixing our Eyes on the Earth

With the horrible scene of the disaster, The Great East Japan Earthquake, before our eyes, we reminded that we humans are only a part of nature and that the Earth let us live on it. The disaster made us take strong recognition of the earth itself and think about it more than ever before.

The total Lunar Eclipse was visible from almost all area of Japan in 2011. The event started at 21:45 on December 10, and ended at 01:18 the following December 11. This was the first time in the last decade, since July 16, 2000, that an entire eclipse could be observed from beginning to end in Japan.

A lunar eclipse is one of the prime opportunities to observe the Earth from the Earth itself, because they allow us to see the Earth's shadow on the lunar surface.

Since ancient times, people have tried to observe and understand celestial bodies including the Earth, Lunar, and Sun—as well as the universe.

The Voyager 1, launched in 1977 by the United States, has been observing the solar system from a vantage point farther from the earth than any other observation. Voyager 1 is still navigating outer space about 17.7 billion km away from the earth. If its exploration equipment continues to function, it will be able to explore regions outside of our solar system four years from now.

In 1961, Yuri Gagarin in the spacecraft Vostok-1

was the first person to see the Earth from outer space with the human eyes. In 1969, Apollo crewmembers, including Neil Armstrong, saw the earth with their own eyes from the most distant place so far—the moon's surface.

Among the countries to continue to explore space, Japan is ranked third in the world after Russia and the United States for the longest time spent in space: a total of 615 days as of November, 2011.

Aside from physical phenomena such as lunar eclipses, there are increasing opportunities for us to learn about the Earth through advancing scientific technologies and the great success of the space projects.

Satoshi Furukawa is one of the most respected Japanese astronauts in the world. When he returned to the Earth on November 22, 2011, an interview was held immediately after he landed on the grasslands of the Republic of Kazakhstan. He smiled at his interviewers and said, "Thanks to gravity, I can now sit down on the chair." Indeed, humans are unable to sit or stand without the earth's gravity.

Through these opportunities, we are able to reconsider the value of the Earth and whether our current lifestyle is truly sustainable or not.

The Total Lunar Eclipse (Dec. 10, 2011)



Photo: Ministry of the Environment

Satoshi Furukawa, immediately after the landing



Photo: JAXA, NASA