Interviewer (Ms. Takemoto):
What would you think about inviting businesses to the university for an exchange of opinions on environmental issues with students?

President Takeda:
We’ve been working on such joint research ventures. We have been putting most of our efforts into bio production. We have an Integrated Research Center on Port Island where approximately 100 people, including faculty, undergraduate and graduate students, and corporate researchers, are working together on the bio production project. Such a huge project provides direct interaction between students and industry insiders. I think we should promote more collaboration down the road as well. By the way, there are tours of the facility so you should visit when you have a chance.

Interviewer (Mr. Harada):
Let me ask next about the fostering of ecologically-minded students as stipulated in the first basic principle. In terms of the ecological mindset, I feel that liberal arts students like myself are perhaps at a disadvantage compared to students in the sciences. What do you expect of liberal arts students?

President Takeda:
What I expect is that you try to gain a wide variety of experiences, though this is not limited to environment-related issues. For instance, going abroad and immersing yourself in diverse cultures would allow you to see Japan more objectively. In the context of the environment, go to Europe, where there are a number of environmental initiatives being carried out, and see what’s happening in people’s daily lives; this experience would certainly have an impact on your view. The situation in the US varies as well. The important thing is to place yourself in overseas environments and learn directly where Japan does and does not differ—such experiences will likely bring a flexibility to your way of thinking and help you to imagine things from a different perspective. You will also find that Japan cannot tackle the environmental issues that the world is facing on its own. Japan will never be able to build a green society without collaboration with other countries. We need people on our team who can successfully negotiate with the overseas parties concerned. That is where those in the liberal arts come in. Diplomats play a key role in working out environmental issues. This is the kind of thing needed of liberal arts students.
I believe that we need to persist in being an environmentally-conscious university at any cost.

Interviewer (Mr. Harada):
Japan has faced a number of natural disasters in recent years. While we appreciate the blessings of nature, it is also necessary that we protect ourselves from nature. What are your thoughts generally on nature and conservation thereof?

President Takeda:
Kobe University is located on beautiful Mt. Rokko. However, it is difficult to predict what might happen with the mountains in the near future. If a Nankai Trough quake occurs, as is anticipated, Port Island would likely disappear underwater. No matter how much greenery we produce and how much clean air we contribute to the city, just a single volcanic eruption would ruin everything in a moment. We need to keep that in mind and teach such a mindset as well. Environmental issues and natural disasters are inextricably linked.

Interviewer (Mr. Ichikawa):
Lastly, could you please say a few words to the student body as a whole?

President Takeda:
You are expected to play a principal role in society in about 10 to 20 years when my generation won’t be around anymore. You will be the ones who have to take responsibility for environmental issues. With that in mind, it is necessary that proper ecosystems be built and a clear path to solving environmental issues be mapped. My message to students is that now is the time for you to start thinking about what you will do when you become core members of society. At least for the present, you should earnestly support the university’s environmental activities, as I believe they will benefit you and your generation in the long run.

Interviewer (Ms. Takemoto):
Let us move on to the third basic principle: ‘To promote environmental preservation activities that set an example for others.’ Environmental issues cover a broad variety of areas and so it may be difficult to raise awareness among students immediately. In what respect should the university take the initiative?

President Takeda:
I think the university should serve as a moral leader. Environmental issues cannot be solved without the involvement of society as a whole. For instance, when people are told to conserve water, they don’t necessarily feel a sense of urgency as people are more likely to do whatever is easiest for them. At the university, however, where we take pride in being a community of intelligent people, each and every person concerned is expected to reach a higher moral standard. We can showcase our efforts through being ecologically-minded and living a more frugal lifestyle despite the burden it might represent to each of us personally. The university must become a social model. Rather than overexerting ourselves towards an unclear end, it is important that we embody this model grounded in a strong belief.
Making the Environmental Report accessible to a wider audience

Topic

White Paper on Reduced Packaging Shopping
WAKATSUKI Yusuke, SOMEKAWA Ryotaro (Senior, Faculty of Economics)
NAKAYAMA Masato (3rd year, Faculty of Economics)
’Serve as a bridge between businesses and consumers’

Correlation between forests and marine areas

Topic

Kobe University Seikyo Gakusei linkai (GI) Activity Report 2015
KISHIMOTO Shoji (2nd year, School of Business Administration)
’Countermeasures to prevent a massive amount of leaflets’

Exploring the causes of aquatic environmental pollution from Satoyama field work
ASAOKA Satoshi (Assistant Professor, Kobe University Research Center for Inland Seas)
’Correlation between forests and marine areas’

Concerning Environmental Health Study I, II
NAKAZAWA Minato (Professor, Graduate School of Health Sciences)
’About lectures on Environmental Health Sciences in English’

In Collaboration with an Affiliated School: Coexistence of the Environment and the Economy
ISHIKAWA Masanobu (Professor, Graduate School of Economics)
’Why has waste seen a reduction?’

For details, please see the Environmental Report on the Kobe University website.
Environmental Education and Research, and Related Topics

**Regional Creation Collaborative Project in Taka-cho, Taka-gun, Hyogo**
FUJIOKA Yoshihide (Professor, Graduate School of Economics)
'Cultivating sundried “Yamada Nishiki” with no fertilizer or pesticides'

**Fukaemaru’s Measurement of Air Pollution in Pacific Coastal Areas**
YAMAJI Kazuyo (Associate Professor, Graduate School of Maritime Sciences)
'Identifying the causes of air pollution around the Osaka Bay Area and the Seto Inland Sea'

**Possibilities for Environmental Finance Led by Regional Financial Institutions**
YAMORI Nobuyoshi (Professor, Research Institute for Economics and Business Administration)
'What role can local banks play in environmental preservation activities?'

**Hosting of the EPR-Asia in Kobe**
ISHIKAWA Masanobu (Professor, Graduate School of Economics)
'Responses to the increasing amount of waste in the world…'

**Analysis of Energy Consumption for Energy Saving Policies at the University Hospital**
TAKEBAYASHI Hideki (Associate Professor, Graduate School of Engineering)
KITTAKA Kosuke (Technical Staff, Graduate School of Engineering)
'Realizing an energy saving policy at the University Hospital'

**Development of a Water-based Hydrogen Production Method Using the Organic Semiconductor Thin-film Catalyst**
ICHIHASHI Yuichi (Associate Professor, Graduate School of Engineering)
'When an organic semiconductor is used for photocatalysis…'

For details, please see the Environmental Report on the Kobe University website.
Saving Energy and Preventing Global Warming

1. Energy Usage

The total amount of energy used at Kobe University, including electricity, gas, fuel oil, etc. in FY 2015 reached approx. 870,000 GJ (*1). (*1 This is an energy value converted based on the Article 4 'Regulations for the Enforcement of a Law Concerning the Rationalization of Energy Usage')

Total energy usage decreased by 2.2% from FY 2014. While energy use on Port Island 3 has increased due to the opening of an Annex building with a total floor area of 4,540m², use in other areas decreased. Looking at energy usage per unit area (divided by the total floor area), it has declined by 4.3% from FY2014, likely the result of the reduction in gas usage.

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2. CO2 Emission Reduction

Kobe University successfully reduced its annual average CO2 emission by 570 CO2 tons (average since 2011) through implementing changes closely connected to CO2 emissions, such as installing high-efficiency air conditioners and light fixtures, the removal/replacement/integration of refrigerators, and the raising of environmental awareness among the faculty, administrators, and students (environmental caravan, introduction of energy visualization equipment, distribution of thermometer-equipped magnets), as well as the reduction of combustible waste by promoting the 3Rs (Reduce, Reuse, Recycle) since 2011.

With FY2006 emissions (first year as a National University Corporation) as the base for measurement, the faculty, administrators, and students have made a concerted effort to achieve a 15% CO2 emissions reduction per total floor area over the 2011-2015 period. The rate of reduction in 2015 per total floor area, however, was just 11.3% (9.23 CO2 ton/thousand m²), due to the securing of facilities required for innovative education and research and the promotion of highly advanced medical treatment.

3. Electricity Usage

The total amount of electricity used in FY2015 increased by 228,000kWh (0.3%) from the previous fiscal year. This was due mainly to the opening of a new laboratory building in the Port Island 3 area at the end of FY2014 (electricity usage increased by 1,465,000kWh in that area alone). All departments will make a concerted effort to save energy and promote conservation activities. Future building renovations will continue to include the introduction of more efficient equipment, with the goal of further reducing energy consumption.

4. City Gas Usage

Total gas usage in FY2015 decreased by 431,000 m³ (9.6%) from the previous fiscal year. This was mainly due to the unusually warm winter (the average temperature in Kobe (Dec-Mar) was 1.4°C higher than FY2014), and the improvement of the heat source facilities in the Kusunoki area. All departments will make a concerted effort to save energy and promote conservation activities. Future building renovations will continue to include the introduction of more efficient equipment, with the goal of further reducing energy consumption.

5. Fuel Oil Usage

Total fuel oil usage in FY2015 increased by 3,370kL (8%) from the previous fiscal year. The fuel oil is mostly used in heating boilers in the Fukae area, which increased in the summer season.
Conserving Resources and Recycling

Water Usage

Total water usage in FY2015 decreased by 8,000 m³ (1.7%) from the previous fiscal year. This was mainly due to the introduction of water-saving facilities and awareness-raising activities for the people concerned. In the Rokkodai area, water resources have been conserved by using Rokko Mountain river water as reclaimed wastewater for flushing toilets, in laboratories, and elsewhere. In addition, the Kusunoki area started using well water in February 2012. Efforts toward the efficient use of water resources will continue.

Non-Industrial Waste

Chart 8 shows the amount of non-industrial waste produced from FY2012 to FY2015. The volume recycled indicates the volume of waste conserved back into resources, and the numbers in the chart itself show exact values for FY2015. Bulk waste had slightly decreased up until FY2011, but increased by roughly 15% in FY2012 due to building renovations and the relocation of laboratories within the university. In FY2013 it decreased again as the renovations and the relocation neared completion, and it reached FY2011 levels in FY2014. FY2015 saw another significant decrease.

Although the amount of office paper waste, which makes up the largest share of paper waste, has been successfully reduced since FY2012 thanks to efforts to reduce paper usage and promotion of computerized documents, this reduction seems to have plateaued recently. Other paper waste, including wrappings and advertisements, is on the decrease, but for the most part is still being discarded. We should focus on the collection of used papers.

The total amount of non-industrial waste in FY2015 decreased by nearly 30% from the previous year. This is mainly due to the decrease in bulk waste as the renovation work to enhance earthquake safety has been mostly completed. This decrease may also be attributed to efforts to reduce the difficult-to-recycle waste. The recycling rate increased sharply to 19.3% from the previous year. (Chart 9)
Kobe University Charter on the Environment

Environmental Philosophy

As a world-class research and education institution, Kobe University pledges itself, through all of the university’s activities, to the preservation of the global environment and to the creation of a sustainable society, the two most important challenges the world faces today.

Located between the Pacific Ocean and the Rokko Mountains, Kobe University utilizes this regional locality to its advantage for the fostering of environmentally-conscious students and the dissemination of knowledge gained from academic research to the world. Through these efforts, and by setting an example in the preservation of the environment, Kobe University pledges to build a path toward the realization of a sustainable society as a common goal of humanity.

Environmental Principles

1. To foster and support environmentally-conscious students.
2. To promote research to create and sustain the global environment.
3. To promote environmental preservation activities that set an example for others.

Enacted on September 26, 2006

Third-Party Review

Reading through the Kobe University Environmental Report 2016, I was deeply impressed to know that Kobe University, as a leading university in Japan, has worked seriously with a firm stance on global environmental issues.

First, the Kobe University Charter on the Environment presents the university’s basic philosophy and principles of environmental issues in an extremely clear and articulate manner so that university students and local citizens can easily understand what Kobe University is aiming for. I could see that the report’s structure and content are consistent with the philosophy and principles set forth.

The most impressive part to me was the students’ interview with the President, which successfully exemplifies the fact that the university’s environmental preservation activities are being undertaken in an extensive way, involving not only administration and staff, but students and other concerned parties as well.

From the ‘Environmental Education and Research, and Related Topics’, which introduces a wide variety of activities within the university, including curriculum, activities led by students or activities led by the Seikyo Gakusei linkai (GI), research outcomes across various fields—I thought the Charter’s third principle, ‘To promote environmental preservation activities that set an example for others’ was being vigorously carried out. More noteworthy still is the hosting of the annual Meeting to Read the Environmental Report, conducted since 2011, with the aim of making the Report known to more students. The opinions gathered from students are reflected in the following year’s reports. I believe that maintaining such interactive communication has brought about the current reader-friendly report.

The ‘Environmental Performance at Kobe University’ illustrates environmental preservation efforts that the university has taken. The consistency in layout and the use of charts makes it easy to understand. In particular, the use of the unit ‘household’ in explaining reduction in electricity or gas use is effective in presenting the outcome to students in an understandable way. The only thing I want to point out is that the CO2 chart uses amount reduced compared to the previous year while the other energy charts use the absolute value. I’m pretty sure that CO2 emission data is used in working out this chart.

Lastly, I want to stress that the report is an extremely high-quality publication that covers a broad range of related content and has a consistent and reader-friendly design, giving a sense of unity as a university. I expect Kobe University, as a pioneer of university environmental preservation activities, to lead other universities in Japan by maintaining the quality of their environmental preservation activities.

YAMAMOTO Hitoshi
Professor and Deputy Head of the Department for the Administration of Safety and Hygiene, Osaka University

<Profile>

Doctor of Science specializing in Polymer Science. He completed his Ph.D at the Graduate School of Science, Osaka University. He became a researcher at the Osaka Agency of Industrial Science and Technology in 1991, a postdoctoral researcher in the Faculty of Science at the University of Alberta in 1997, and chief researcher at the Osaka Agency of Industrial Science and Technology in the same year. He has been an assistant professor in the Graduate School of Science, Osaka University, since 2000 and an assistant Professor in the Department for the Administration of Safety and Hygiene, Osaka University, since 2004. He has served in his current positions since 2007. Author of several publications including ‘Biotechnology Experiments Safety Orientation’ (Tokyo Kagaku Dojin).

Cover

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