

## Efforts for ESD (Education for Sustainable Development) in Nagoya University

United Nation set a decade from 2005 as "The United Nations Decade of ESD (UNDESD)" based on the proposal by Japanese government, and UNESCO World Conference on ESD will be held in Aichi-Nagoya from 10th to 12th of November 2014, the final year of UNDESD.

ESD stands for Education for Sustainable Development, and one in higher education specifically means to develop advanced human resources for sustainable development (SD). As a part of SD research and education, Nagoya University (NU) established the Graduate School of International Development, the Graduate School of Environmental Studies, and more, has promoted international cooperation on legal education and medical services in Asian countries, and has also conducted large educational programs such as NUGELP (Nagoya University Global Environmental Leaders Program.) Meanwhile five graduate schools of NU, namely, Environmental Studies, International Development, Bioagricultural Sciences, Engineering and Economics has launched a new joint program called Nagoya University ESD Program in April 2013. The Education and Research Center for Sustainable Co-Development has been also established inside the Graduate School of Environmental Studies in April 2014 to manage for the program. Global leaders in science, policy and business in the 21st century must have capabilities of developing sustainable global society.

## Completion of Disaster Mitigation Research Building

The construction of Disaster Mitigation Research Building was completed in March 2014. This building is expected to function as a base of research, education, and cooperation on disaster prevention and mitigation and play a role as a base of disaster response in case of large-scale disasters.

In the building, a variety of "experiments" have been started to seek new disaster preventing and mitigating approaches in the university, which include shaking the rooftop laboratory and facilitating interaction among researchers with different areas of expertise in the same building. Value in our research on disaster prevention and mitigation will be determined by original ideas leading to new solutions and improvement of local disaster prevention capabilities created here.



## "Zero Waste" Activity in Nagoya University Cosmos Nursery School

A class of 3 to 5-year-old children engaged in "zero waste" activity so that they are aware of "waste" in the environment surrounding them. Children, who started from their school cheerfully, walked along a path from their school to NU library with a plastic bag in hand, looking for trash around sidewalks, shrubbery, ditches and squares.

Children picking up trash attracted attention of NU students and faculty members on campus. Adults all know that trash needs to be put into garbage can, but they sometimes do not so. Serious look of the children picking up trash made adults stop and think if they can do as these children do. We, the faculty members of the nursery school, wanted adults in various positions in NU to recognize garbage disposal issue again from children's behavior, and that was one of reasons we decided to do this activity, so it was really meaningful that the children activity was noticed.



## A NU Graduate Report "Efforts in Environmental Consulting Firm!"

The work of environmental consulting firm is to support guide government officials toward a solution for environmental issues and preservation they are struggling with.

It is a well-known fact that environmental consulting firm is involved in environmental assessment in large-scale developments and preservation of rare species that are affected by road constructions and river improvements, but after I joined this business, I was very surprised to know that this work is related to very wide-ranging fields, not to mention development projects. Eleven years passed since then, and now I find it very worthwhile. On the other hand, I am sometimes immature even now. I am alternately delighted and dismayed by each investigation result.

I sometimes fall into a trap by my self-centered story. Nature is not that simple. Trust is vital to environmental consulting works. I would like to gain trust more by good works and steady efforts, and return my achievement to others.



### Contact Information

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Recycled paper used.



NAGOYA UNIVERSITY

# Nagoya University Environmental Report 2014 (Digest)



Michinari Hamaguchi  
President of Nagoya University

濱口道成

## Message from the President

Immediately after I assumed the position of president in Nagoya University, I organized issues to tackle during my term as the Hamaguchi Plan and have strived to achieve it over the last six years, and the last year has finally come. When I took office, reducing GHG emission was one of the highest priority issues in this country, so I set a higher reduction target of CO<sub>2</sub> emission than the government commitment at that time and have made all efforts to achieve it. As the result, we could hit the target one year ahead of the schedule.

Rapid decrease in population in Japan casts a big shadow over Japanese universities. To overcome this difficulty, Nagoya University has reformed the education program globally through the Program for Leading Graduate Schools and the G30 Program under the slogan of "Accelerating Nagoya University's Internationalization" in the Hamaguchi Plan. Especially, increasing cooperation with Asian universities and other long-standing steady efforts bore fruit in many ways, for example, producing graduates who now play a leading role in ASEAN countries and building a deep trust with local people. If Nagoya University should continue to grow as one of the world's leading universities, it is necessary to uphold the social responsibilities and the environmental communications described in the Environmental Policy and adhere to the principles of NU Academic Charter. For that purpose, I will continuously improve our program by positively disclosing information on sustainability and social responsibilities related to our university. The efforts will be seamlessly succeeded by my successor assigned in the near future.

## Environmental Policy

The fundamental principles of scholarly activity for Nagoya University are set down in the Nagoya University Academic Charter. Within the Charter, it is written that "Based on the academic traditions of freedom and generosity, our mission is to contribute to the happiness and one word of human beings, through research and education related to humanity, society and nature". The development of civilization and the current activities of human beings will have a great influence on future generations. Therefore, based on our Charter, and in order to fulfill our role in society and to contribute to the harmonious development of humanity and nature through research and education rich in imaginative power, we hereby establish the following fundamental principle and policies of Nagoya University regarding the environment.

### 1 Fundamental Principle

Recognizing that human beings have created a vast diversity of cultures and values, we will, for the benefit of future generations, consider which aspects should be truly respected, and contribute to the realization of a society that can maintain such traditions and values.

### 2 Basic Policies

#### Basic Position

(1) In order to investigate the causes of environmental problems, and find suitable means for dealing with them, all academic fields will develop educational and research programs that aim for sustainable development.

#### Environmental Management

(2) In order to plan further improvements in environmental management, we will (together with related parties) consider what attitudes and actions are necessary for universities, put them into practice, and further pursue them.

#### Environmental Performance

(3) Recognizing (together with related parties) that our own activities involve environmental effects and responsibilities, we will work to find comprehensive and systematic solutions that will reduce our environmental impact, and enable us to take preventive measures.

#### Social Responsibility and Environmental Communication

(4) With respect to laws and ethics, we will work to enhance trust from local and international communities by making information available publicly, and through communication and mutual understanding with related parties.

(Approved by the President on August 1, 2005)  
(Revised on October 12, 2010)

The full version of the Environmental Report can be found at: <http://web-honbu.jimu.nagoya-u.ac.jp/fmd/rpt.html> (in Japanese)





# Environmental Report Summary [Continuous Improvement in Environmental Activities]

Nagoya University has been continuing university-wide environment-related activities. These activities are summarized below.

Red text refers to awards received.

= Improved from previous year.  
 = Further improvement needed.

Report Period	Environmental Management in General	Anti-Global Warming & Energy-Conservation	Waste Management	Chemical Substance Management	Community & Student Relations																																							
<b>FY2013</b> 	<ul style="list-style-type: none"> <li>Completion of Disaster Mitigation Research Building</li> <li>Environmental communication with external stakeholders</li> <li>Mutual cooperation with the National University of Singapore in safety and health management</li> <li><b>"Aichi Environmental Award for Excellence" received for Research Institutes Building</b></li> </ul> <p>Opinion exchange about Environmental Report</p>	<ul style="list-style-type: none"> <li>CO<sub>2</sub> emission reduction by 21.6% from FY2005 based on NU Campus Master Plan 2010 (Target: Reduction of CO<sub>2</sub> emission in FY2014 by 20% or more from FY2005)</li> </ul> <p>100% 80% 60% 40% 20% 0%</p> <p>2005 (Base Year) 2010 2011 2012 2013 2014 (Target Year)</p>	<ul style="list-style-type: none"> <li>In-house training for proper waste treatment (June and December 2013)</li> <li>Reduction of paper waste by recycling used papers</li> </ul> <table border="1"> <thead> <tr> <th colspan="2">◎ Combustible/Non-combustible Waste Amount (compared to previous year)</th> <th></th> </tr> <tr> <th>FY2013 Results</th> <th>Evaluation</th> <th></th> </tr> </thead> <tbody> <tr> <td>Higashiyama ⇒ 0.0% →</td> <td></td> <td></td> </tr> <tr> <td>Tsurumai ⇒ 7.9% ↓</td> <td></td> <td></td> </tr> <tr> <td>Daiko ⇒ 9.1% ↓</td> <td></td> <td></td> </tr> </tbody> </table>	◎ Combustible/Non-combustible Waste Amount (compared to previous year)			FY2013 Results	Evaluation		Higashiyama ⇒ 0.0% →			Tsurumai ⇒ 7.9% ↓			Daiko ⇒ 9.1% ↓			<ul style="list-style-type: none"> <li>Management System of Chemical Substances (MaCS-NU) strengthened</li> <li>Improvement of training for handling high-pressure gas</li> <li>Safety measures when collecting laboratory wastes improved</li> </ul> <table border="1"> <thead> <tr> <th colspan="2">◎ MaCS-NU Registration ratio ⇒ 100%</th> <th></th> </tr> <tr> <th>FY2013 Results</th> <th>Evaluation</th> <th></th> </tr> </thead> <tbody> <tr> <td>◎ MaCS-NU Registration ratio ⇒ 100%</td> <td></td> <td></td> </tr> </tbody> </table>	◎ MaCS-NU Registration ratio ⇒ 100%			FY2013 Results	Evaluation		◎ MaCS-NU Registration ratio ⇒ 100%			<ul style="list-style-type: none"> <li>Installation of noise prevention measures (louver for noise prevention, sound-proof wall)</li> <li>Environmental circle "Song Of Earth"</li> </ul> <p>Environmental circle "Song Of Earth"</p>															
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<b>FY2010</b> 	<ul style="list-style-type: none"> <li>Environmental policy revised. The new environmental policy comprises four basic components: Basic Position, Environmental Management, Environmental Performance, and Social Responsibility &amp; Environmental Communication</li> <li>The University's environmental efforts are presented in separate sections according to each component of the Basic Policies</li> <li>A list of educational and research activities related to the environment created</li> </ul>	<ul style="list-style-type: none"> <li>Results of the University Hospital ESCO projects conducted at Turumai Campus: 7,207 tons of CO<sub>2</sub> emissions reduced</li> <li>Energy-Saving patrol implemented</li> </ul> <table border="1"> <thead> <tr> <th colspan="2">◎ Greenhouse Gas Emissions (CO<sub>2</sub> equivalent, compared to 2009)</th> <th></th> </tr> <tr> <th>FY2010 Results</th> <th>Evaluation</th> <th></th> </tr> </thead> <tbody> <tr> <td>Higashiyama ⇒ 9.5% ↑</td> <td></td> <td></td> </tr> <tr> <td>Tsurumai ⇒ 21.1% ↓</td> <td></td> <td></td> </tr> <tr> <td>Daiko ⇒ 18.4% ↑</td> <td></td> <td></td> </tr> </tbody> </table>	◎ Greenhouse Gas Emissions (CO <sub>2</sub> equivalent, compared to 2009)			FY2010 Results	Evaluation		Higashiyama ⇒ 9.5% ↑			Tsurumai ⇒ 21.1% ↓			Daiko ⇒ 18.4% ↑			<ul style="list-style-type: none"> <li>In-house training for proper waste treatment (June 2010)</li> <li>Reduction of paper waste by recycling used papers</li> </ul> <table border="1"> <thead> <tr> <th colspan="2">◎ Combustible/Non-combustible Waste Amount (compared to previous year)</th> <th></th> </tr> <tr> <th>FY2010 Results</th> <th>Evaluation</th> <th></th> </tr> </thead> <tbody> <tr> <td>Higashiyama ⇒ 3.0% ↓</td> <td></td> <td></td> </tr> <tr> <td>Tsurumai ⇒ 6.3% ↑</td> <td></td> <td></td> </tr> <tr> <td>Daiko ⇒ 30.0% ↑</td> <td></td> <td></td> </tr> </tbody> </table>	◎ Combustible/Non-combustible Waste Amount (compared to previous year)			FY2010 Results	Evaluation		Higashiyama ⇒ 3.0% ↓			Tsurumai ⇒ 6.3% ↑			Daiko ⇒ 30.0% ↑			<ul style="list-style-type: none"> <li>Management System of Chemical Substances (MaCS-NU) strengthened</li> <li>System for chemical substance registration at time of delivery introduced (May 2010)</li> </ul> <table border="1"> <thead> <tr> <th colspan="2">◎ MaCS-NU Registration ratio ⇒ 100%</th> <th></th> </tr> <tr> <th>FY2010 Results</th> <th>Evaluation</th> <th></th> </tr> </thead> <tbody> <tr> <td>◎ MaCS-NU Registration ratio ⇒ 100%</td> <td></td> <td></td> </tr> </tbody> </table>	◎ MaCS-NU Registration ratio ⇒ 100%			FY2010 Results	Evaluation		◎ MaCS-NU Registration ratio ⇒ 100%			<ul style="list-style-type: none"> <li>Environmental circle "Song Of Earth"</li> <li>Cooperative activities for COP10</li> </ul> <p>Trash-collection activities</p>
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<b>FY2009</b> 	<ul style="list-style-type: none"> <li>Action Plan for CO<sub>2</sub> Emissions Reduction (20% reduction from 2005 level by 2014)</li> <li><b>"Excellent Engineer of Energy Conservation, Chubu Region Electricity Usage Rationalization Committee Chairperson's Award 2009" received</b></li> <li><b>"Prize for Public Entity, Green Reporting Award" received (Sponsored by Toyo Keizai Inc., Green Reporting Forum)</b></li> </ul>	<ul style="list-style-type: none"> <li>ESCO projects conducted at Tsurumai Campus</li> <li>Energy-Saving patrol implemented</li> </ul> <table border="1"> <thead> <tr> <th colspan="2">◎ Greenhouse Gas Emissions (CO<sub>2</sub> equivalent, compared to 2006)</th> <th></th> </tr> <tr> <th>FY2009 Results</th> <th>Evaluation</th> <th></th> </tr> </thead> <tbody> <tr> <td>Higashiyama ⇒ 14.1% ↓</td> <td></td> <td></td> </tr> <tr> <td>Tsurumai ⇒ 2.8% ↑</td> <td></td> <td></td> </tr> <tr> <td>Daiko ⇒ 8.8% ↓</td> <td></td> <td></td> </tr> </tbody> </table>	◎ Greenhouse Gas Emissions (CO <sub>2</sub> equivalent, compared to 2006)			FY2009 Results	Evaluation		Higashiyama ⇒ 14.1% ↓			Tsurumai ⇒ 2.8% ↑			Daiko ⇒ 8.8% ↓			<ul style="list-style-type: none"> <li>In-house training for proper waste treatment (June 2009)</li> <li>Reduction of paper waste by recycling used papers</li> </ul> <table border="1"> <thead> <tr> <th colspan="2">◎ Combustible/Non-combustible Waste Amount (compared to previous year)</th> <th></th> </tr> <tr> <th>FY2009 Results</th> <th>Evaluation</th> <th></th> </tr> </thead> <tbody> <tr> <td>Higashiyama ⇒ 19.8% ↓</td> <td></td> <td></td> </tr> <tr> <td>Tsurumai ⇒ 2.0% ↑</td> <td></td> <td></td> </tr> <tr> <td>Daiko ⇒ 14.0% ↑</td> <td></td> <td></td> </tr> </tbody> </table>	◎ Combustible/Non-combustible Waste Amount (compared to previous year)			FY2009 Results	Evaluation		Higashiyama ⇒ 19.8% ↓			Tsurumai ⇒ 2.0% ↑			Daiko ⇒ 14.0% ↑			<ul style="list-style-type: none"> <li>Management System of Chemical Substances (MaCS-NU) strengthened</li> <li>Asbestos treatment for all relevant facilities at the University completed (Mar 2010)</li> <li>Implementation of measures to improve work environment at Tsurumai Campus launched</li> </ul> <table border="1"> <thead> <tr> <th colspan="2">◎ MaCS-NU Registration ratio ⇒ 63%</th> <th></th> </tr> <tr> <th>FY2009 Results</th> <th>Evaluation</th> <th></th> </tr> </thead> <tbody> <tr> <td>◎ MaCS-NU Registration ratio ⇒ 63%</td> <td></td> <td></td> </tr> </tbody> </table>	◎ MaCS-NU Registration ratio ⇒ 63%			FY2009 Results	Evaluation		◎ MaCS-NU Registration ratio ⇒ 63%			<ul style="list-style-type: none"> <li>"ECO LABO" Project (Meichari Project 2009)</li> <li>Small home appliance collection program implemented</li> <li>Noise control measures (installation of sound-proof panels) implemented</li> <li>Non-smoking activities for Daiko Campus</li> </ul>
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## Nagoya University's Energy-Saving Activities Main Activities After 2004

- Major energy-saving activities at Nagoya University (For building equipment-related energy-saving measures, see the list marked \* on the right.)
- Monthly energy consumption per campus and ongoing energy conservation measures posted on website (2004-)
  - Summer / Winter Energy-Saving Campaign and Lunctime Lights Off Campaign (2004-)
  - E-mail notice to reduce power consumption when usage is predicted to exceed the contracted capacity on Higashiyama Campus during summer time (2004-)
  - Energy saving activity survey using energy saving check sheet (2005-)
  - Energy saving practice ensured by appointing Energy Saving Promoters (2005-)
  - Energy saving through university-wide summer break closure (2 weekdays in Aug) (2005-)
  - Energy saving Patrol (2009-)

### \* Emergency conservation measures in Disaster Mitigation Research Building (FY2013 results)

- Thermal insulating material in outer walls (50mm)
- LED lights for entire building
- Super-high efficiency transformer
- Earth tube by effectively utilizing existing utility corridors
- Double insulating glass
- Light control by motion and ambient light sensors
- Solar photovoltaic device
- Natural ventilation system



Disaster Mitigation Research Building