

Let's Learn More about Environmental Impacts at Nagoya University

Material Balance of Environmental Activities

We put efforts to reduce our environmental impacts by collecting and analyzing data of our activities (education, research, and medical services). The figure below shows the input of natural resources and energy as well as the output of environmental impact in FY2019.

activities

INPUT







667k m³





135 t





University



CO₂ emissions 73,661 t-CO₂

OUTPUT



Sewage water 970k m³



Municipal waste 2,018 t Industrial waste 2.045 t

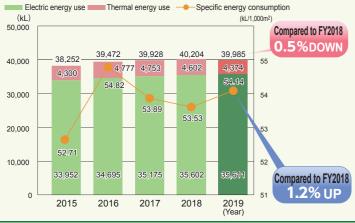
Energy Consumption and Amount of CO₂ Emission

Scope of data collection: all the campuses (excluding university housing and some of the private businesses on campus.

Compared to FY2018

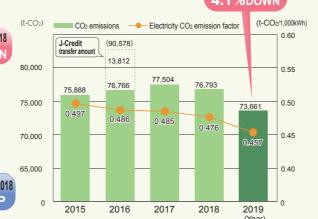
■Energy consumption (equivalent to crude oil)

In FY2019, the energy consumption decreased by about 0.5% but the energy consumption per unit (the amount of energy consumed per floor area of building) increased by about 1.2% compared to those in the previous fiscal year. This is because the buildings that are less frequently used were demolished and excluded from the total floor area of building



■Amount of CO₂ emission

Energy consumption decreased by about 0.5% from the previous fiscal year, but the amount of CO2 emission was decreased by about 4.1% due to the improvement of CO₂ emission factor.



Front Cover Competition for Environmental Report 2020

As a part of our campaign of public relations, we have been seeking artwork for the front cover of the Nagoya University Environmental Report since FY2016. We hope it provides a chance for readers to consider of environmental issues (featured on p.60 of the Report). We received a lot of excellent artwork in FY2020. We would like to express our sincere gratitude to everyone who applied for the front cover artwork this year as well as to those who cooperated with the public offering, including the University Co-op.



(Featured on front cover of the Report

Grand Prize Mayuko Naiki



(Featured on p.42 of the Report)

utstanding Prize Nanako Mizuno



(Featured on back cover of the Report)

utstanding Prize | Satoka Fukushima



MAKE NEW STANDARDS. Gifu University X Nagoya University =



Beginning of Tokai National Higher Education and Research System

In April 2020, the "Tokai National Higher Education and Research System" was started by Gifu University and Nagoya University. We will continue to take on new challenges towards the construction of a new university model. (Featured on p.1 of the Report)



Successful Extraction of

Biofuel from Microalgae with Reduced CO₂ Emission

Small algae such as blue-green algae and euglena seen under a microscope are called microalgae. The fact that the

production of oil within the microalgae, which is a source of

energy and chemical raw materials, is orders of magnitude

faster than other plants. We show our efforts in Africa where



Seiichi Matsuc

Nagoya University Environmental Report 2020



The University Taking Steps Towards a More Sustainable Society

on the Environment

Where is it on campus? Find it out on the next page.



Students of Various Nationalities **Discuss Water-related Environmental** Issues in English

Introduction to an environmental science-related seminar addressed to first-year undergraduate students. The seminar is conducted in English, and students of various nationalities discuss a broad range of environmental topics under the main theme of "water in the environment".











we aim to dramatically

reduce CO2 emission with

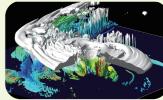




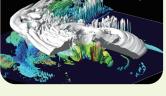
Aircraft Observation of Typhoons

In situ observation of typhoons using an aircraft has just begun in Japan. We aim to reduce typhoon disasters by clarifying the structure and intensity of typhoons, which improves the forecast accuracy of typhoon track and intensity

We would also like to address a big issue of how typhoons change with global warming









Experiencing Sustainable Agriculture through Practical in the Togo Field

In the Togo Field, Field Science Center, Graduate School of Bioagricultural Sciences, we are conducting "Practical on Biological Production" as part of the experimental training course of "Practical on Bioresource Science" for 3rd-year students of Faculty of Agriculture.

The contents of practical are shown in the Report.









Cherish the Origin: Nagoya University and "Sustainable **Development Goals (SDGs)"**

Prof. Miura of the Graduate School of Law (International Relations) has conducted research on the Sustainable Development Goals (SDGs) as a whole, rather than the specific goals. Members of an environmental club "Song of Earth" interviewed him

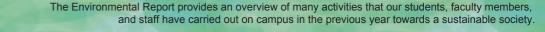
about his research and the significance of SDGs











We show a wide range of environmental activities towards a more sustainable society.

Nagoya University views that our initiatives relating to our social responsibilities are also a part of environmental activities in a "broad sense".

Please refer to the **Environmental Report 2020** for full-length articles.

http://web-honbu.jimu.nagoya-u.ac.jp/fmd/06other/guideline/e_rpt.html (It can be found on the page of Nagoya University General Affairs Department Facilities Division.)



Environmental Communication

For Living Things and **People to Live Together**

In Aichi Prefecture, where the Convention on Biological Diversity COP10 was held, diverse people such as government, companies. universities, and citizens work on building ecosystem networks to conserve biodiversity by sharing their wisdom and power. In collaboration with the Institute for Agro-Environmental Sciences of the National Agriculture and Food Research Organization, we show our initiatives such as research to clarify what kind of consideration should be given to agriculture that coexists with living things.







(Featured on p.33 of the Report)

Environmental Communication

Forest-Town-based Urban Woodification **Project and Environmental Education (ESD) Activities led by Local Communities** and Students

We have been working on "Urban Woodification Project" since 2009 with the primary goal of "making the future of forests and urban sustainable. In connection with this goal, we interviewed Prof. Yamasaki and Erina Kojima, the representative of the student club MOKKO (3rd year doctoral student at the Graduate School of Life and Agriculture). They are challenging practical projects from the perspective of "responsibility" (Featured on p.31-32 of the Report) and possibility of wood utilization"



Environmental Activities of Students

Environmental Activities Started by University Students

The Nagoya University environmental club "Song of Earth" have activities with the goal of "thinking and practicing various environmental problems from the students' perspectives.' We show some of our activities inside and outside the university, such as cleaning an artificial pond, my-bottle-contests, greening activities, and eco-friendly work.



(Featured on p.34 of the Report)

Multi-Purpose Bathroom and Center for Gender Equality

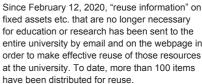
Nagoya University posts a list and layout map (as of August 2019) of multi-purpose bathroom on the "Higashiyama Campus Map." Previously, the Office for Gender Equality (at that time) investigated the installation status of diaper changing tables and baby chairs as part of childcare support and requested the Facilities Department to make them as standard equipment. As a result, the



universal design working group was formed with the members of the Office for Gender Equality, together with the members of the Ability Support Center, which introduced perspectives from people with disabilities, international students, and gender equality. The working group organized workshops and conducted on-site surveys and interviews with the parties concerned, which resulted in "Nagoya University Campus Universal Design Guideline 2015." It follows the establishment of the "Missions and Guidelines for LGBT+-inclusive Practices" in 2018. We promote the environment arrangement that accommodates diverse members, including the expansion of awareness of the bathroom called "multi-purpose bathroom.

(Featured on p.50 of the Report)

Started Sending "Reuse Information on **Fixed Assets etc.**"



(Featured on p.44 of the Report)





The University Taking Steps Towards a More Sustainable Society

Education and Research on the Environment







Disaster Prevention

Preparation and Collaborative Activities in Response to a Case of a Large-Scale Disaster

We show our initiatives to keeping our university members safe and maintain the university functions for future natural disasters, including implementing safety measures from both hardware and software, maintaining important university functions, and strengthening cooperation with the local community



(Featured on p.37-38 of the Report)

Environmental Performance

Initiatives for Safety and Health

In order to ensure wearing the protective equipment in research activities, the "Guideline for Personal Protective Equipment on Experiments" (in Japanese and English) was implemented in FY2019. The guideline was notified to all the entire university members to promote safety and health for researchers and international students who are unfamiliar with Japanese language. We also encourage them to wear safety goggles by posting posters, especially to prevent eye injuries.



(Featured on p.51 of the Report)

Activities of Graduates

Waste Reduction in Drug Development Research

Yusuke Kitabayashi completed his degree in organic synthesis in particular to isolated natural compounds (from mushrooms and leaves), in the field of natural product chemistry. Department of Basic Medicinal Science, Graduate School of Pharmaceutical Sciences. He is currently involved in the development of manufacturing process that is essential for the development of pharmaceutical products. We show the connection of his experience and knowledge between his current job and research at the university



(Featured on p.39 of the Report)