



고려대학교
KOREA UNIVERSITY

SUSTAINABILITY REPORT

2023



ABOUT SUSTAINABLE DEVELOPMENT GOALS

The United Nations' **Sustainable Development Goals (SDGs)**, adopted by 195 countries in 2015, outline 17 goals and 169 targets to be achieved by 2030 across five key areas: **People, Planet, Prosperity, Peace, and Partnership**. Although not legally binding, the SDGs call for global collaboration among governments, businesses, media, universities, and civil societies to tackle pressing challenges.

Korea University is dedicated to advancing all 17 SDGs by leveraging its strength in Research, Teaching and Learning, Engagement and Outreach, and Operations. Korea University aims to foster a better future through innovative research, comprehensive education, active community involvement, and sustainable practices.



ABOUT KOREA UNIVERSITY ANNUAL SUSTAINABILITY REPORT

The Korea University Institute for Sustainability publishes an Annual Sustainability Report highlighting our extensive efforts to achieve the SDGs. This report not only promotes our sustainability initiatives externally, but also aids diverse stakeholders and policymakers, both within and outside Korea University, on the efforts implemented by Korea University for a better tomorrow.

The report details Korea University's contributions to the SDGs through four main areas: **Research, Teaching and Learning, Engagement and Outreach, and Operations**. These areas correspond to the structure of the **Korea University Presidential Council on JEDI and Sustainability**. The research data, sourced from SciVal, covers the period from 2018 to 2022. The report also presents the curriculum and extracurricular activities conducted in 2023 across the entire community of Korea University, including its institutions and departments. Developing countries refer to low and middle-income (LMI) countries as defined by the World Bank. Additionally, the report outlines the policies and regulations enacted by relevant committees and administrative teams.

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FOREWORD

Since 1905, Korea University has stood tall as the nation's finest private university amidst the ordeals of modern and contemporary Korean history. Korea University took the lead in restoring national sovereignty during the Japanese colonial era and played a pivotal role in Korea's industrialization, democratization, informatization, and globalization in the decades following independence. Today, the institution is making great strides towards becoming a leading, world-class university.

Korea University's founding philosophy, "**national salvation through education**," has been inherited by each generation of students. Further, the lessons of "**liberty, justice, and truth**" and the altruistic spirit of "**public affairs first and private affairs later**" forever resonate in the hearts of the University community. Together, this has all contributed to Korea University becoming a world-class university. Today, it is time to contribute to global sustainability through this same longstanding spirit of altruism.

We stand at the threshold of a new era focused on a sustainable future. At this moment, we are exploring ways to foster on-campus sustainability and move beyond the unsustainable practices of the past. 2023 marked an important starting point for the university with the launch of the **Carbon Neutrality Plan 2045** (announced in 2022), as well as the establishment of the **Korea University Presidential Council on Justice, Equity, Diversity, and Inclusion (JEDI) and Sustainability**, enabling all university members to participate in the decision-making process on the university's sustainable development plans and practices. We have also expanded our outreach programs to make a greater impact on the community. For example, **Changemakers** is a student-led initiative addressing local issues that has garnered significant attention for demonstrating a strong commitment to sustainability and making a profound impact on our community.

This report consolidates and details all our endeavors, which were previously scattered across the campus and, even more importantly, it underscores our ongoing commitment to achieving the SDGs in the future. We look forward to continued collaboration across the Korea University community to make a better future for us all.

Dong-One Kim
President of Korea University





KOREA UNIVERSITY'S GOAL: GLOBAL UNIVERSITY LEADING A SUSTAINABLE FUTURE

Aspiring to be a global university leading a sustainable future, Korea University fosters an environment that nurtures responsible global citizens and pioneers solutions to pressing environmental and social challenges.

KOREA UNIVERSITY'S VISION

- Integrate sustainability as a core element of Korea University
- Develop a sustainable campus through participation from all stakeholders
- Demonstrate leadership both domestically and internationally as an agent of change



STRATEGY

Research



- Conduct innovative research to promote sustainability

Teaching and Learning



- Foster leaders who actively participate in sustainability efforts

Engagement and Outreach



- Realize social values by engaging all stakeholders
- Expand sustainability capacity through domestic and international networks

Operations



- Achieve sustainable social values with enhanced strategic planning
- Establish governance that prioritizes diversity and inclusion

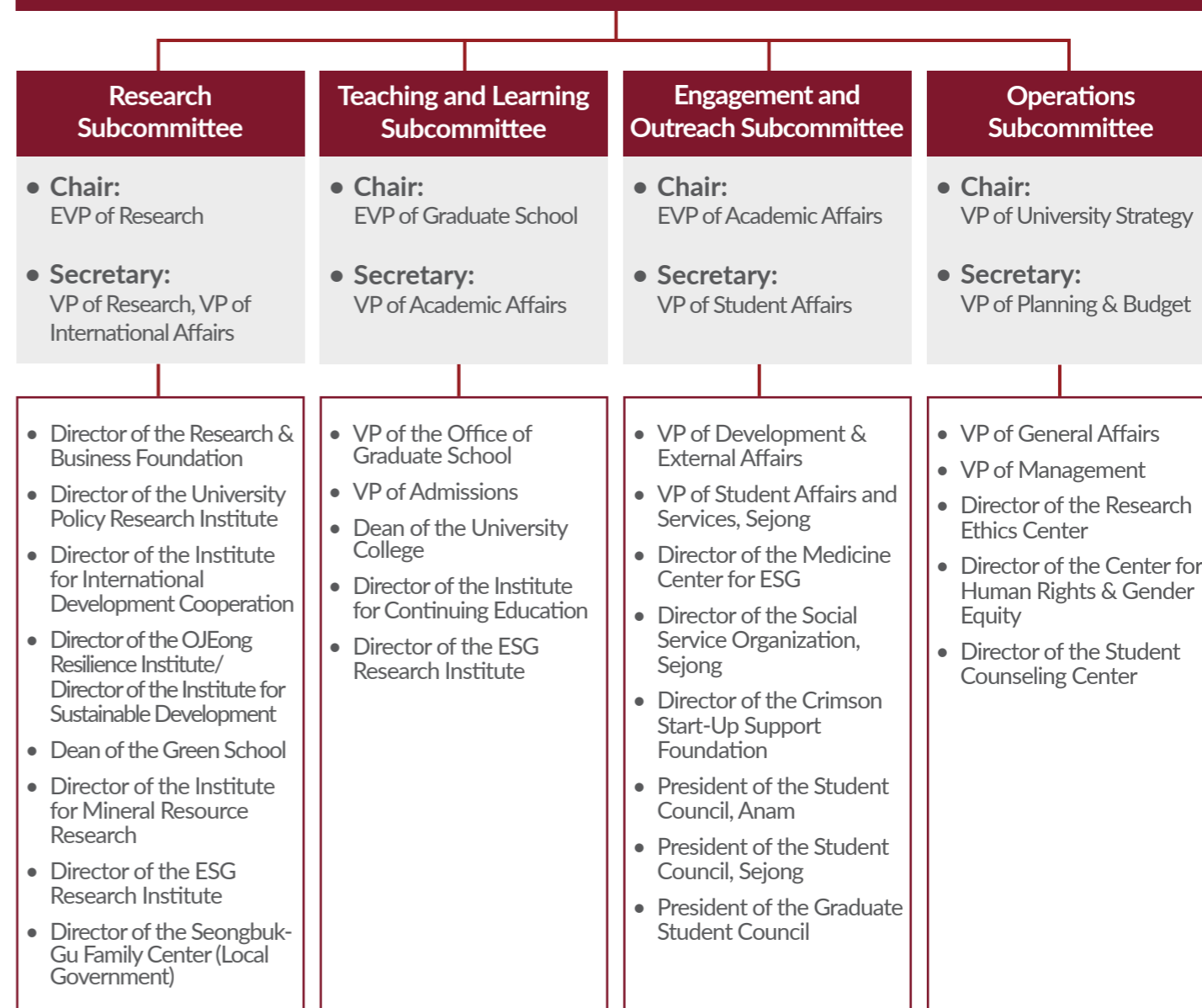
LEADING THE CHARGE: THE JUSTICE, EQUITY, DIVERSITY, AND INCLUSION (JEDI) AND SUSTAINABILITY COUNCIL

Established on January 1, 2024, the Korea University Presidential Council on JEDI and Sustainability (the JEDI and Sustainability Council) serves as the central body for integrating and managing the university's ESG (Environmental, Social, and Governance) activities and SDG initiatives.

KOREA UNIVERSITY PRESIDENTIAL COUNCIL ON JEDI AND SUSTAINABILITY

- **Chair:** President
- **Vice-Chair:** Executive Vice President (EVP) of Academic Affairs, EVP of Research, EVP of Graduate School, EVP of Sejong Campus, EVP of Medical Affairs
- **Secretary:** Director of the Institute for Sustainability

(date established: January 1, 2024)





KOREA UNIVERSITY AT A GLANCE



2023, 118th ANNIVERSARY SINCE 1905

INFRASTRUCTURE



24
Colleges



2
Campuses



22
Graduate Schools



313
Research Institutions



5,805
On-Campus Housing Capacity

ACADEMICS



31,390
Scholarly Output
(Data Period: 2018–2022,
Data Source: SciVal, as of June 4, 2024)



18,747
Courses



20,667
Students Provided with
Scholarships Worth 49 billion KRW
(Excluding Special Scholarships)

PEOPLE



5,173
Faculty
• **103** International Faculty



37,821
Students
• **30,320** in Seoul
• **7,501** in Sejong



1,708
International Students



400,000+
Alumni

PARTNERSHIPS AND FUNDING



876
Global Partnerships



561 billion KRW
Research funding

SUSTAINABILITY AT A GLANCE



13,468
Scholarly Output on
Sustainability



260+
Research Institutions Focused
on Sustainability



683
Undergraduate Courses on
SDGs Offered in 2023



988+
Sustainability-Related
Extracurricular Activities



**2023 Seoul Metropolitan City
Environmental Award** in
Energy Conversion



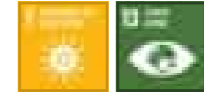
**2022 Korea University
Newspaper**
Selected as an **Excellent
University in ESG Management**



Korea University Medical Center
Published the First **ESG Report**
in South Korea



December, 2023:
Korea University Presidential
Council on **JEDI** and
Sustainability Established



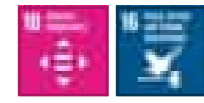
2022
The First Year of the
Carbon Neutrality Plan



260%
Increase in **Solar Power
Generation** on Campus
Compared to 2020



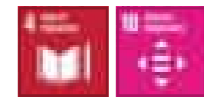
95%
LED Installation Rate Achieved
on Campus



**2019: Launch of the First
Diversity Committee** Among
Domestic Private Universities
and Publication of **Diversity
Report**



The **Only Korean University**
with **Mandatory Human
Rights & Gender Equality
Education** Creating and
Sharing Its Content with **30+**
Universities Since 2022

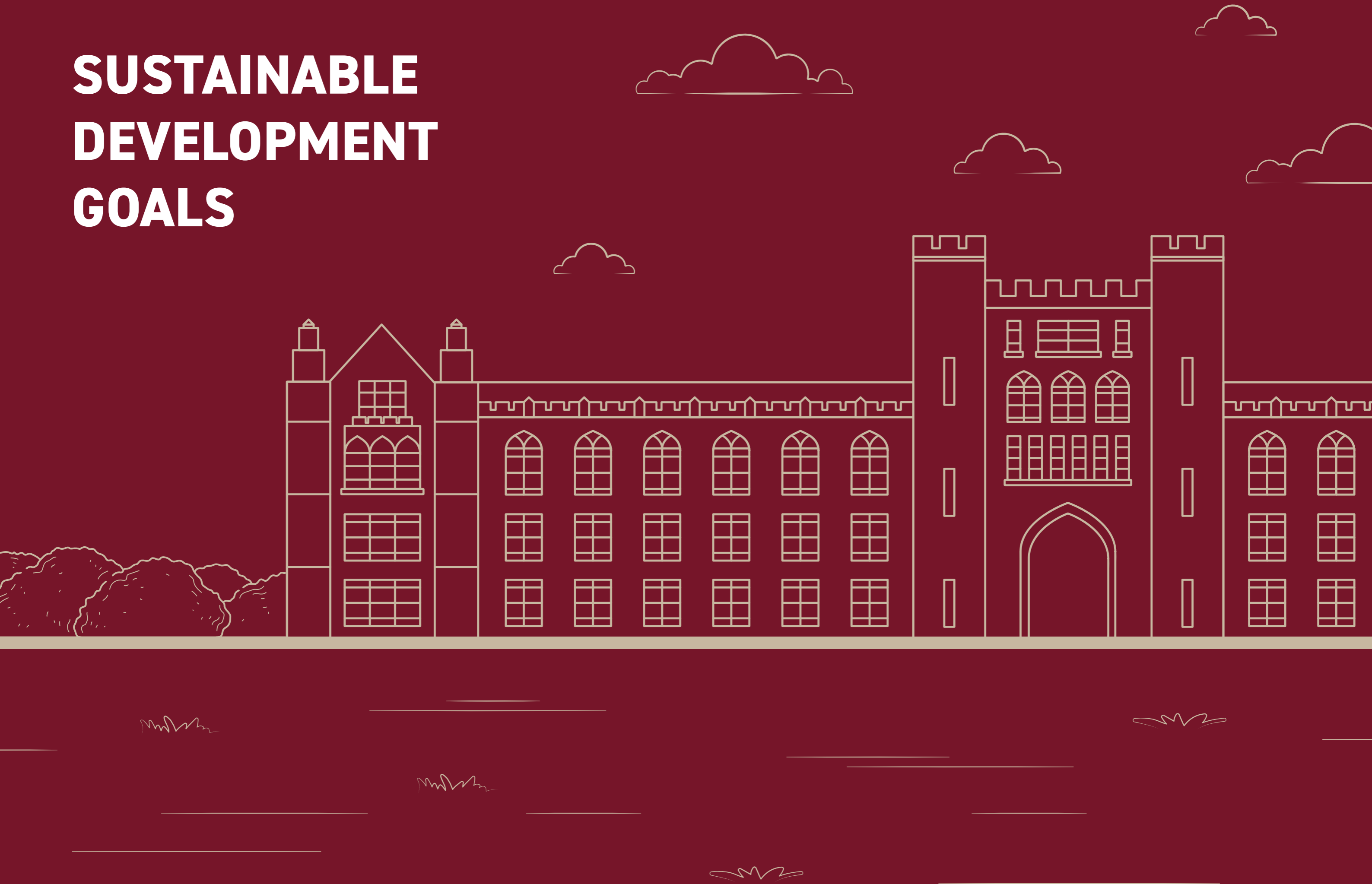


Outstanding University for
Students Disability Welfare
(Ministry of Education, **Four
Consecutive Years**)



3+
**Public Performances and
Exhibitions** Held Monthly on
Average

SUSTAINABLE DEVELOPMENT GOALS



1 NO POVERTY



TO END POVERTY IN ALL ITS FORMS EVERYWHERE

Korea University provides financial support to ensure equitable educational opportunities and implements various initiatives to enhance access to medical care for low-income individuals.

RESEARCH

Highlighted Research



Factors Associated with Child Stunting, Wasting, and Underweight in 35 Low- and Middle-Income Countries

A Korea University (KU) study found that improvement of socioeconomic status and parental nutrition were the strongest factors in preventing child anthropometric failures.



Factors Associated with Quality of Life in Patients with Depression: A Nationwide Population-Based Study

The study identified older age, lower education levels, and lower income as key factors contributing to a lower quality of life in patients with depression.



121

Scholarly Output



Citation Count

1,458



1.07 FWCI*

Data Period: 2018-2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact

TEACHING AND LEARNING

Korea University's Center for International Climate and Ocean Governance and Carbon Sink Specialized Graduate School hosted the 2023 Korea Model United Nations (KMUN) in July, focusing on climate change, environmental issues, poverty, and human rights.

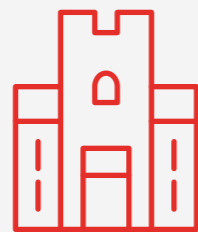


120+

Students from middle schools, high schools, and universities across South Korea attended the event.

Master's Degree Graduates in International Development and Cooperation

Since Establishment



693 Total Number of Graduates

57 Number of students completing graduate studies



41+ Extracurricular Activities Related to No Poverty

ENGAGEMENT AND OUTREACH

KU actively addresses poverty among low-income groups through various groups and club activities.



On June 23, 2023, volunteers from the Korea University Medical Center and the Business School provided psychiatric, dermatological, dental, and diagnostic care to 50 low-income individuals with developmental disabilities in Seocho District.



For the second consecutive year, senior executives from KU's Healthcare Future Forum organized a **mobile clinic** at Anseong Senior Welfare Center, providing consultations in colorectal surgery, thoracic surgery, otolaryngology, and rehabilitation medicine.



The Voluntary Labor Group, established in 1961, provides **coal briquettes** to socially marginalized groups every winter.

OPERATIONS

Alumni provide scholarships, like the **Physics Department Star Scholarship Fund**, to younger students.

11,717 Students received financial support covering over 50% of tuition fees.



9,081 Students Received 100% Financial Support



2,636 Students Received 50% Financial Support

NOTABLE ALUMNI



The KU Social Service Alumni Group, made up of graduates from the Social Service Program, continues **volunteer work** after graduation.

2 ZERO HUNGER



TO END HUNGER, ACHIEVE FOOD SECURITY AND IMPROVED NUTRITION AND PROMOTE SUSTAINABLE AGRICULTURE

Korea University tackles hunger through research on sustainable agriculture and land use, along with community outreach programs that provide meals to those in need.

RESEARCH

Highlighted Research

KU study titled "**The Effect of Additional Shading Utilizing Agriphotovoltaic Structures on the Visual Qualities and Metabolites of Broccoli**" suggests that agriphotovoltaic systems can improve the visual quality of crops.

"**Relationships Among Water, Food, Energy, and Ecosystems in the Mid-Latitude Region in the Context of Sustainable Development Goals**" by a KU researcher, suggests that food, water, energy, and ecosystem services cannot be managed independently of others.

OJJeong Resilience Institute was established in November 2014 at KU to focus on research, education, and planning for the resilience of socio-ecological systems.



Development of Food-Water-Biodiversity (FWB) Nexus Modeling in Korea



Development of AI-Based Climate Smart Agriculture Support-Monitoring-Distribution System for supporting decision-making on Agriculture Carbon Neutrality

TEACHING AND LEARNING

For KU Students

KU offers various courses, such as **International Agricultural Development (Department of Food and Resource Economics)**, to enhance students' knowledge of SDG 2.

For All

KU provides free online courses for internet users. **Changes in Korea's Agricultural Food Industry and Food Security**, taught by **Professor Doo Bong Han**, has surpassed **8,328** views. Related educational videos and materials can be found on the **KU OCW** website.

3+ Extracurricular Activities Related to Zero Hunger

ENGAGEMENT AND OUTREACH

KU's student clubs and alumni are actively engaged in combating poverty and hunger through impactful volunteer activities.



The Korea University Red Cross Club collaborates with the Korean Red Cross every month to bake and deliver bread to those in need in their local community.



KU's Advanced Management Program Volunteer Committee at the Business School provides meals and donates supplies to low-income residents in Nowon District, Seoul.



KU produces various crops at Deoso Farm, which it owns, near Seoul. KU officials participate in a rice planting event in spring.

OPERATIONS



KU started providing **One Dollar Breakfast (₩1,000)** for students in 2023.

Since Inception (2023)



128,286

Students Benefited from One Dollar Breakfast

NOTABLE ALUMNI

Soon Young Kwon (Steve Kwon), known as the "**Father of Soybeans**" and "**Soybean Doctor**," is an alumnus from the Department of Agricultural Chemistry.

He dedicated his efforts to Nutrition and Education International, an NGO supporting malnourished children in war-torn Afghanistan.

Increase in Afghanistan's Soybean Harvest



In 2006
300 Kgs

In Over 15 Years
6,000 Tons

In recognition of his efforts, he received the **Asan Award for Social Service** in 2021 and the **Social Service Award** from KU in 2024.



183

Scholarly Output



Citation Count

12,501



6.04%
of All Korean Publications

4.39 FWCI*



3 GOOD HEALTH AND WELL-BEING



TO ENSURE HEALTHY LIVES AND PROMOTE WELL-BEING FOR ALL AT ALL AGES

Korea University contributes to reducing the burden of diseases through groundbreaking research and grassroots-level outreach programs.

RESEARCH

260+ Research Institutes Dedicated to Advancing SDGs

70+ Institutes Engaged in SDG 3-Related Research

Notable institutes include the Stem Cell Research Institute, the Regenerative Medicine Research Institute, and the Mental Health Research Institute.

Significant Innovations

- A novel biosensor for early Alzheimer's disease diagnosis that detects exosomal biomarkers and aids in monitoring cognitive decline.
- A new isothermal amplification technology for COVID-19 diagnosis named Extension-mediated self-folding Isothermal amplification Technology (ExIT), which reduces false positive results and promises broader diagnostic applications.



6,576 Scholarly Output

Citation Count **172,872**



7.67% of All Korean Publications

1.82 FWCI*

Data Period: 2018–2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact

TEACHING AND LEARNING

Founded in 1971, The Korea University College of Medicine is a leading research-oriented medical school in Korea, known for pioneering the nation's first forensic science lab and earning a **6-Year Accreditation** for its commitment to medical ethics.

	Medical School Graduates	Nursing College Graduates	Graduates from College of Health Sciences
Total	5,698	3,162	3,842
In 2023	104	49	334



Rosetta S. Hall (1865–1951) was a dedicated physician who served populations with limited access to medical care during the late Joseon Dynasty and the Japanese colonial period. In September 1928, she founded the Joseon Women's Medical Training Institute, Korea's first medical education institution for women, which has since grown into Korea University College of Medicine.

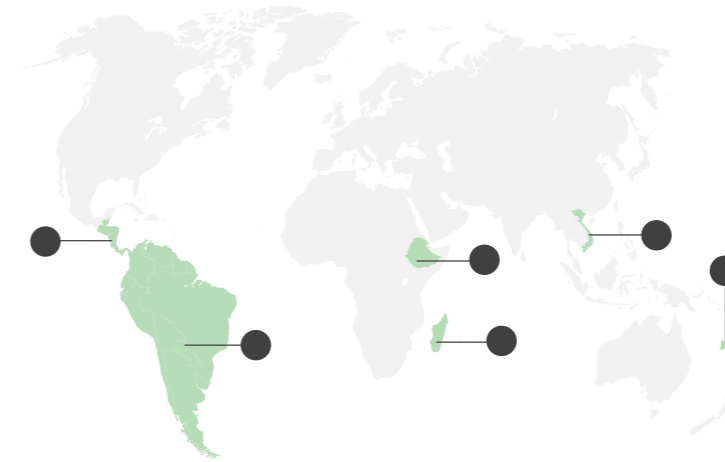
ENGAGEMENT AND OUTREACH

KU Medicine has enhanced global health and well-being by executing various international health projects to significantly improve medical services and disease prevention in developing countries.

KU Medicine is also expanding healthcare efforts in Madagascar, Ethiopia, Mozambique, and Fiji.

5 Billion KRW Spent

13 International Health Projects



Partnerships of KU Medicine

KU Medicine has consistently provided medical support to refugees, migrant workers, and the underprivileged. Key initiatives include:

- Free medical support for migrant workers in **Sri Lanka**
- Medical support for Korean refugees in **Ukraine**
- Medical support for special contributors to **Afghanistan**
- Free medical services for international students at **Korea's World Scout Jamboree** event



• KU Medicine now provides halal food for patients.

Efforts to Offer Diverse Foods

- **Halal food:** KU is actively considering providing halal food on campus.
- **Vegan food:** The Ppuri:Chim Club promotes activities for vegetarians and conducts seminars, creates social media content, and engages in other activities on and off campus. Additionally, the campus dining halls occasionally offer customized vegetarian meals.

OPERATIONS

In 2023, KU surveyed **1,283** students on mental health, to enhance support services. Additionally, the university introduced psychological counseling for faculty and staff, reinforcing its commitment to mental well-being.

Mental Health Initiatives at KU



13,343 Student Participants



4.5/5 Average Satisfaction Score

Sports Facilities on Campus



21,301 m² Large Sports Facility



220,000+ Users per Year

KU offers free and low-cost sports facilities to its community, including outdoor and indoor options such as Hwajeong Tiger Dome, Nokgee Sports Facilities, and the KU Ice Rink.

4 QUALITY EDUCATION



TO ENSURE INCLUSIVE AND EQUITABLE QUALITY EDUCATION AND PROMOTE LIFELONG LEARNING OPPORTUNITIES FOR ALL

Korea University strives to promote quality equitable education through its outreach programs, by supporting international students, and focusing on underserved educational areas.

RESEARCH

Highlighted Research

"School Climate, Academic Performance, and Adolescent Well-Being in Korea: The Roles of Competition and Cooperation" suggests that higher level of cooperation in school has a positive effect on academic performance and individual well-being.

"Are Two Heads Better Than One? The Effect of Student-AI Collaboration on Students' Learning Task Performance" reveals insights that have implications for the design of educational AI and AI literacy education.



174

Scholarly Output



Citation Count

2,692



1.57 FWCI*

Data Period: 2018-2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact

TEACHING AND LEARNING

For KU Students

SDG 4 Courses Offered by KU (2023)



693 Undergraduate Courses

95 Graduate Courses

20 Courses Related to Environmental Sustainability Micro-Degrees

Graduates from the College of Education and the Graduate School of Education



30,189 Graduates Total (as of August 2023)

641 Graduates in 2023

293 Successful Candidates in the Teacher Certification Exam in 2023

Support Program for International Students

The university's Global Services Center offers a mentoring program to help international undergraduates achieve academic success and adapt to life in Korea.

The program pairs international freshmen with graduate students and upperclassmen for academic counseling and exam preparation.



5,422 International Students Supported

919 Participants in 2023

Korea University International Summer Campus (KU ISC)

KU ISC helps students learn about Korea through academic and cultural immersion by offering:

- A semester's workload condensed into six-weeks and four-weeks sessions, taught by renowned academicians
- Access to current college students who wish to study in Korea but face limitations
- 120 courses covering a wide range of subjects on international issues

Over 2,000 Students from 300 Institutions in nearly 50 Countries Participated in 2023

Sustainability Strategies — A Sustainability-Related Course Attended by 46 Students from 10 Countries in 2023

249+ Extracurricular Activities Related to Quality Education

For All - Online

KU operates various online channels to provide high-quality education on a range of topics:

- **KUOCW:** Open educational resources since 2009, offering over 340 courses in Korean, English, and Spanish.
- **KU YouTube Channel:** A variety of educational content, including the popular **KU Encyclopedia** video series.

- **K-MOOC:** KU's Free Online Course Platform Launched in 2015.



5,522 Students Enrolled in 2023



Diverse Courses Cover Topics in Humanities and Science

For All - Offline

Korea University Institute for Continuing Education

KU provides diverse learning opportunities and promotes quality education through its lifelong education centers at the Seoul and Sejong campuses.



67,319 Total Students (as of 2023)



Courses in General Liberal Arts, Government-Commissioned Education, Local Government-Linked Education Project

ENGAGEMENT AND OUTREACH

Student Mentoring Day 2023

Hosted by the Korea University Business School to introduce high school students to various college majors.



Held 15 Times in 2023

99 Students from 89 Schools

Korea University's College of Education Academic Mentors (KU:CEAM)

- A learning mentor program supports students from the College of Education and the Graduate School of Education in underserved educational areas.
- Online tutoring sessions with middle school students four times a month throughout the school year, plus a two-day, one-night support session during breaks.
- **33 student mentors** supporting **33 middle school students** in 2023.



Korea University Institute for Sustainability conducts education programs for elementary, middle, and high school students in underprivileged areas, locally and internationally, to revive local schools that are at risk of closure and bridge educational disparities.



114 Students Mentored 248 Students from Nine Schools in 2023

Visited Cambodia and Uzbekistan in 2023 to Provide Korean Language and SDG Education

Mentoring Volunteer Clubs

Over **14 clubs** with a history of **20+ years** conducting mentoring and volunteer activities to address educational disparities.

Haetbitchon (Sunlight Village), founded in **1990**, has been involved in educational volunteer activities for low-income children in the local community.

OPERATIONS

KU supports various scholarships and programs for students worldwide.

Scholarships like the **Foreign Student Future Hope Scholarship** enable international students to pursue their studies in Korea with stability. The **IT Global Leadership Program** fosters close communication with international students and provides easy access to information.

KU Library is a top prestigious institution, nominated for the 2018 **Karl Lo Award** by the **Pacific Rim Research Libraries Alliance** for its future-oriented scholarly information.

- 3,726,519 books
- 33,588 non-book materials
- 186 digital data packages
- 2,031 printable serial periodicals

Open to the public, allowing anyone to access knowledge at anytime.

NOTABLE ALUMNI



Sang-soo Kim, a 1988 graduate of Korea University's Department of Statistics, is the representative of the NGO Cambofriend, which aims to improve education in Cambodia. His efforts to enhance the quality of life and educational standards have earned him the **Social Contribution Medal** twice from the **King of Cambodia**.





5 GENDER EQUALITY



TO ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN

Korea University provides an inclusive environment by implementing policies through its scholarship and awareness programs to promote diversity and gender equality.

RESEARCH

Highlighted Research

Professor Robert Rudolf has co-authored Chapter 3 on "Gender, Education and Jobs" for the **Poverty and Gender Assessment of the Gambia**, published by the **World Bank** in 2022.

The study titled "**Age at Menarche of Adolescent Girls and the Neighborhood Socioeconomic Status of Their School Area**" found a link between the socioeconomic deprivation of school areas and earlier puberty in Korea.

"**Prolonged Exposure to Intimate Partner Violence and Depressive Symptoms among Korean Married Couples: The Intersection of Gender and Education**" reports an association between education and gender when it comes to intimate partner violence.



100

Scholarly Output



Citation Count

1,431



1.43 FWCI*

Data Period: 2018–2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact

TEACHING AND LEARNING

Mandatory Course for All KU Members

The **Center for Human Rights & Gender Equity** provides education and seminars for all KU members.

All members must complete the mandatory Human Rights and Gender Equity class, a unique policy among Korean universities. As the only private university, KU creates its own content, sharing it with 30+ universities since 2022. Additionally, Seoul City Hall also uses KU content for official education.

For KU Students

KU offers a variety of courses to enhance students' knowledge on SDG 5.

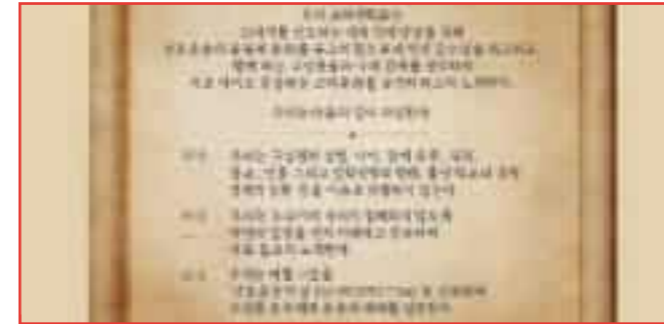
For instance, **Media and Gender** (School of Media and Communication), **Gender and Society** (Department of Sociology), **Gender History** (Department of History), and **Reading Gender in Literature** (General Studies), etc. are included.

Extracurricular Activities

The **Center for Human Rights & Gender Equity** supports a **Student-Human Rights Organization Volunteer Program** to encourage active student participation.

23+ Extracurricular Activities Related to Gender Equality

ENGAGEMENT AND OUTREACH



KU designates the **11th** of each month as **KU-Respect Day** to conduct awareness-raising campaigns from April, 2022 to March, 2023.



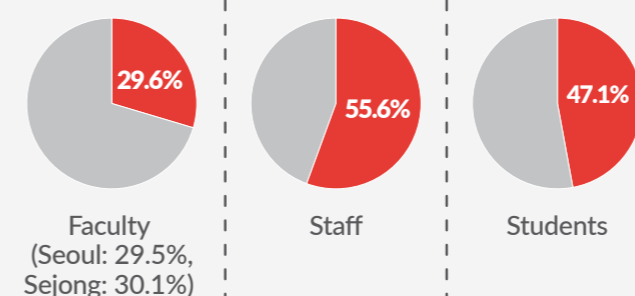
The university has established **12 Principles of Mutual Respect (Respect You & I)** and works to create a sustainable cultural environment with different content each month.

The **Minority Human Rights Committee** is a student-led organization that aims to advocate for the rights of minorities on and off campus. It produces and distributes human rights guides and newsletters to promote awareness of human rights issues within the campus community.

OPERATIONS

Achieving Equal Gender Representation on Campus

Proportion of Women on Campus



"KU Prohibits Any Kind of Gender Discrimination, and Strives to Provide a Fair Working Environment for All Diverse Members"

The Center for Human Rights & Gender Equity has been publishing annual reports titled "**Gender Story**" since 2004 and "**Human Rights Report**" since 2021.



Supporting Female Students Through Various Scholarships

Many scholarships are available for female students, including the following key ones. Through these four scholarships, 10 students received **over 29 million KRW** in support.

- Women ROTC Scholarship
- Women's Committee Scholarship
- Female Faculty Association Scholarship
- Medical College Women Alumni Association Scholarship

KU aims to build a supportive environment that minimizes career interruptions for women and fosters a balanced environment for work-study life.

Support for Women on Campus



13 Women's Lounges

4 Breastfeeding and Baby Care Rooms



6 CLEAN WATER AND SANITATION



TO ENSURE AVAILABILITY AND SUSTAINABLE MANAGEMENT OF WATER AND SANITATION FOR ALL


Korea University strives towards providing clean water and sanitation by strictly regulating wastewater, designating waste management, and promoting the use of water-saving sanitary devices.

RESEARCH


Highlighted Research

"Sustainable Microalgal Biomass Production in Food Industry Wastewater for Low-Cost Biorefinery Products: A Review" highlights the importance of microalgal biomass production in food processing wastewater.


"Pilot Study of Emerging Low-Energy Seawater Reverse Osmosis Desalination Technologies for High-Salinity, High-Temperature, and High-Turbidity Seawater" provides insights into emerging technologies for future low-energy desalination plants.



624
Scholarly Output



8.63%
of All Korean Publications



Citation Count
28,680

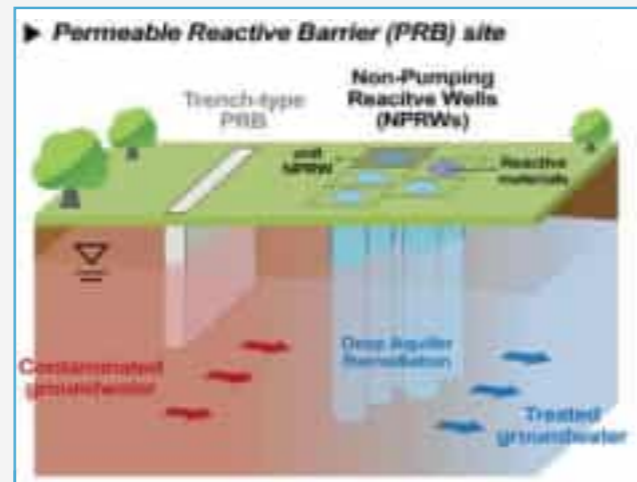
2.24 FWCI*

Data Period: 2018–2022, Data Source: SciVal, as of June 4, 2024
*FWCI: Field-Weighted Citation Impact

Appraisal of Water Security in Asia: The Pentagonal Framework for Efficient Water Resource Management



This study introduces a **modified concept** and **definition of water security** and a **water security assessment framework** based on a review of previous works on water security.



Applying **upscaling methods to predict the longevity of Non-Pumping Reactive Wells (NPRWs)** simplifies complex NPRW designs by estimating their lifespan and preventing contaminant spread, thereby ensuring more effective and sustainable groundwater treatment.

5+ Institutes Engaged in SDG 6-Related Research

The **Water Environment Plant Engineering Lab**, led by **Professor Seung Kwan Hong**, focuses on research in **membrane technology, electro-deionization, oxidation, and AI**. The lab leads various studies, including advancements in membrane filtration technologies for water reuse.

TEACHING AND LEARNING

KU is actively fostering young researchers by expanding scholarships and introducing new courses across various departments to build a sustainable water environment in Korea and around the world. In 2023, the **School of Civil, Environmental and Architectural Engineering** awarded the **KU-Hydro Jr. Fellow** scholarship to students researching water and environmental issues. Additionally, the school offers courses that provide in-depth theoretical foundations on addressing water environment challenges from multiple perspectives, including machine learning for water and environmental problems.

6+ Extracurricular Activities Related to Clean Water and Sanitation

ENGAGEMENT AND OUTREACH

KU's Uzbekistan Environmental Ecology Restoration Conference aimed to address the severe degradation of the **Aral Sea**, which has dried up by about **75%** due to agricultural water diversion. KU hosts annual discussions on water security issues, including the Aral Sea crisis.



Students are encouraged to **propose restoration methods** and **raise environmental awareness** among local residents.

OPERATIONS

Free Water on Campus



42 Indoor Water Purifiers



5 Outdoor Drinking Fountains

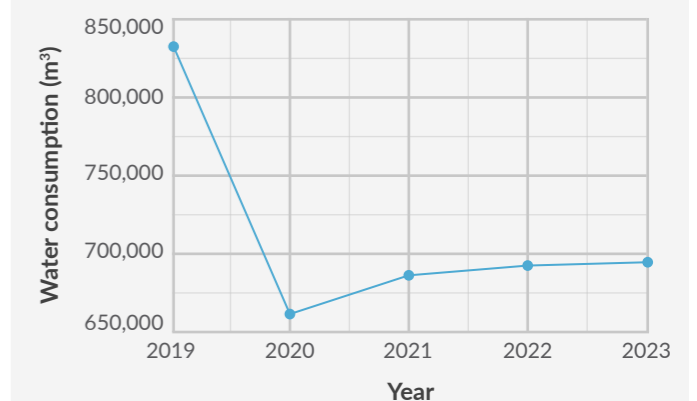
All buildings on campus are equipped with water purifiers, provided free of charge for everyone. At the same time, KU is making efforts to operate an efficient water management system.

- Ensuring clean water and sanitation for students on campus
- Stricter regulations for wastewater and designated management
- Collection and treatment of high concentration laboratory waste
- Low concentration waste processing at various facilities
- Periodic measurement and management of pollutant levels

KU set up **Water-Saving Sanitary Devices** to minimize water use and to contribute to a Building Energy Efficiency Grade **1+ rating**.

These devices include water-saving sensor faucets, sensor-equipped urinals, and dual flush valves in campus restrooms.

Annual Water Consumption Over the Last Five Years (Seoul Campus, 2019–2023)



A slight increase in consumption is attributed to increased student activities with the resumption of in-person classes following COVID-19.

7 AFFORDABLE AND CLEAN ENERGY



TO ENSURE ACCESS TO AFFORDABLE, RELIABLE, SUSTAINABLE, AND MODERN ENERGY FOR ALL

Korea University strives to promote the use of affordable and clean energy by implementing sustainable transportation systems, renovated lighting systems, along with geothermal and hydrothermal systems.

RESEARCH


Highlighted Research

"**Biofuel Production from Microalgae: Challenges and Chances**" suggests the need for optimizing biofuel production processes to reduce the price of microalgae biofuels.


In "**Sustainable Remediation and Redevelopment of Brownfield Sites**," researchers outline some sustainable remediation strategies for the clean up of contaminated soil and groundwater at brownfield sites.

Notable institutes include the **Super Ultra Low Energy and Emission Vehicle Center**, the **Research Group for Opto-Electronic Devices Based on Glass Transparent Electrodes**, and the **Research Center for Plus Energy Building Innovative Technology**.


18+ Institutes Engaged in SDG 7-Related Research



2,456
Scholarly Output



7.50%
of All Korean Publications



Citation Count
79,701

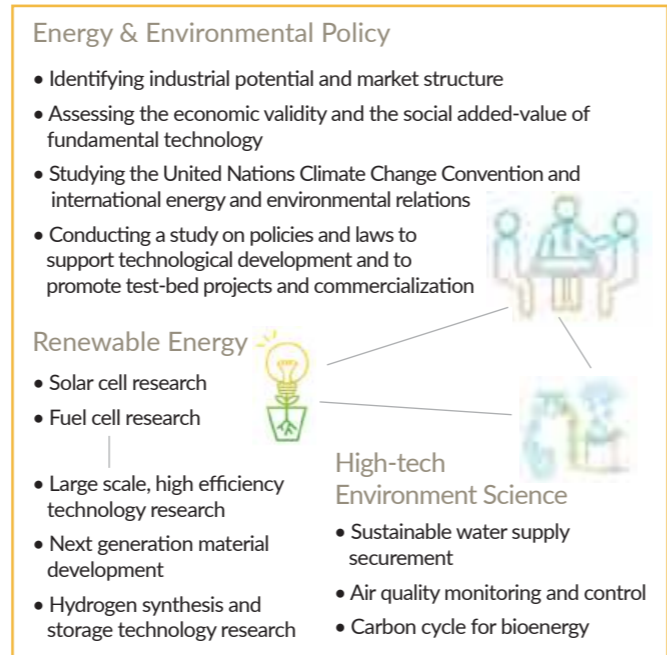
1.74 FWCI*

Data Period: 2018–2022, Data Source: SciVal, as of June 4, 2024
*FWCI: Field-Weighted Citation Impact

TEACHING AND LEARNING

KU promotes collaborations across three disciplines: **renewable energy, high-tech environmental science, and energy and environmental policy**, to develop human resources. The university promotes **Policy-Technology Integrative Research** and operates the **Green School** to support the **Integrative Education of Policy and Technology**.

Green School



The **Green School** serves as a communication hub for joint research and education through networks with institutions in the **United States, Singapore, the Netherlands, Germany, and Russia**. Additionally, it provides educational opportunities to graduate students worldwide, including those from developing countries through **Official Development Assistance (ODA)**.

40+ Extracurricular Activities Related to Affordable and Clean Energy

ENGAGEMENT AND OUTREACH

KU fosters the next generation of clean energy leaders through competitions and seminars. For instance, the **Carbon Neutral Ideathon** organizes various programs to address real-world energy challenges in local communities.

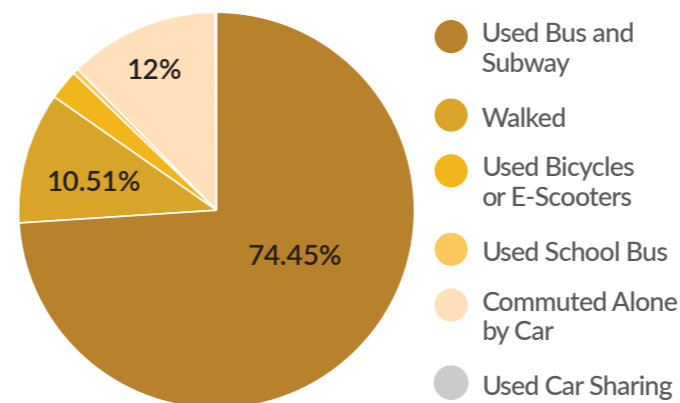


KU's **New Energy Industry Convergence and Open Sharing System (COSS) University Project Group** held the "**Korea-Qatar Energy New Industry Cooperation Seminar**" at Qatar University, in collaboration with the Embassy of the Republic of Korea in Qatar. The seminar was attended by over 60 students from each institution.

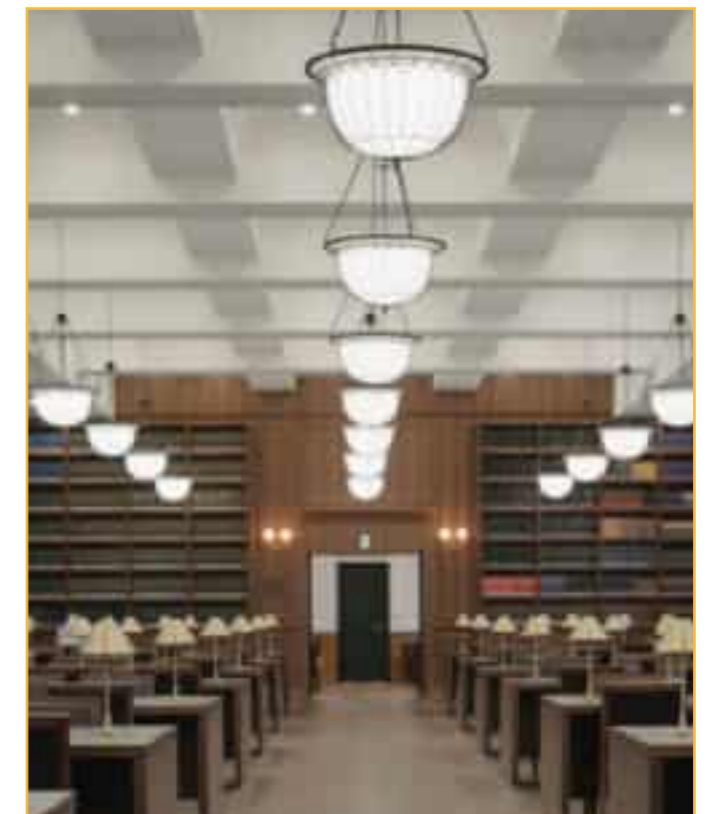


OPERATIONS

KU takes pride in a **sustainable transportation system**, facilitated by its proximity to public transportation. According to the survey, over **85.9%** of KU members used sustainable modes of transport, compared to the average rate of **41%** in Seoul.




Survey of 952 respondents (survey period: May 20 to 29, 2024)




As part of the **Net ZERO Initiative**, KU has renovated its lighting system, converting up to **95%** of all lights to LED since 2022. Currently, new and remodeled buildings are being constructed to meet eco-friendly standards, with ongoing LED replacements.

Sustainable Energy Sources

Solar, geothermal, and hydrothermal systems at multiple locations across its campuses.



177.87 kW
Total Solar Power Capacity



5,029.16 kW
Total Geothermal and Hydrothermal Capacity

- Solar panels installed at Memorial Hall
- Geothermal installation at Sudang Samyang Faculty House

Additionally, the installation of solar panels is being expanded.



8 DECENT WORK AND ECONOMIC GROWTH

TO PROMOTE SUSTAINED, INCLUSIVE AND SUSTAINABLE ECONOMIC GROWTH, FULL AND PRODUCTIVE EMPLOYMENT, AND DECENT WORK FOR ALL

Korea University aims to enhance entrepreneurship capabilities and promote decent work and economic growth.

RESEARCH

Highlighted Research

"Rethinking Skill Development in a VUCA World: Firm-Specific Skills Developed Through Training and Development in South Korea" provides new insights on human capital theory.

"Economic and Environmental Potential of Green Hydrogen Carriers (GHCs) Produced via Reduction of Amine-Captured CO₂" suggests that electrochemical formic acid production may be a viable long-term option for hydrogen production.

Notable institutes and groups include the **Business Management Research Institute**, the **Startup Institute**, and the **Youth TLO Program**.

17+ Institutes Engaged in SDG 8-Related Research



338

Scholarly Output



Citation Count

13,560



2.23 FWCI*

Data Period: 2018–2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact

TEACHING AND LEARNING

The **Student Success Center** provides high-quality job opportunities and practical support through career counseling, alumni mentoring, job training, and internship programs. Additionally, the Sustainable Micro-Internship has been offered since 2021.



103

Students underwent an internship program for three years in collaboration with the U21 Sustainable Micro-Internship Program



KU supports employment in the **sustainability sector** through collaborative efforts across departments and programs.



- Programs enable students to visit prominent sustainability centers.
- Entrepreneurship initiatives offer mentorship, resources, and a platform for developing innovative solutions for a sustainable future.

Participants in Sustainability-Focused Field Training in 2023

355

Undergraduates

18

Graduate Students

Annual-Biannual Job Fairs

266

Companies

16,569

Students

The Eco-Up Fair (Job Fairs Specialized Sustainability)

230

Companies

320

Students and Staff

Nurturing Startups

KU provides entrepreneurship support through special lectures, mentoring programs, and other initiatives at each college.



Korea University Business School's 'Choo Choo Day' is a biannual investor presentation platform for early-stage student startups.



384 Participants in 2023

2,960 Total Participants by End of 2023



153+

Partner companies including the Banks Foundation for Young Entrepreneurs, SK, Naver, and Hyundai Heavy Industries

The **Science and Technology and Startup Communication Workshop** focuses on tailored startup support that reflects the specific needs of the local region and its residents.



79 Total Participants

The **Eco-Up Innovation Convergence University** trains specialized talent in six key areas: greenhouse gas reduction, climate change adaptation, sustainable water conservation, resource circulation, pollution prevention and management, and biodiversity conservation. It offers a range of tailored programs for students.



129 Total Participants

Eco-Up Startup Competency Enhancement Bootcamp provides insights on future-proofing industries and technologies relevant to the ESG era and smart cities.

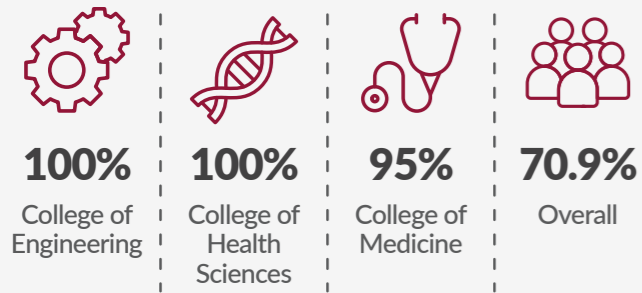


49 Participants




4.41/5 Average Satisfaction Score

Student Employment Rates (2023)



98+ Extracurricular Activities Related to Decent Work and Economic Growth

 **Crimson Startup Support Group** supports the commercialization of startups by students, faculty, and early-stage companies.

- Supported **60** startup club teams with **₩100 million** in 2023
- Produced **six online** startup lectures and conducted **104** startup mentoring sessions
- Held **eight** startup competitions, **22** extracurricular startup education programs, and **12** networking events
- **Two** supported startups received the **Minister of SMEs and Startups Award**

KU's strong support has led to the emergence of companies gaining global attention. At the Consumer Electronics Show (CES) 2024 in Las Vegas, two KU teams received Innovation Awards. The teams are **QSIM+**, founded by **Professor Kwangseok Noh** from the Ultra-Secure Quantum Internet Research Center, and **Meta Immune Tech**, established by **Professor HyunSik Jun** from the Department of Biotechnology and Bioinformatics.

Qsimplus showcased a mobile robot for short-range quantum communication, while Metaimunetech earned recognition in the digital health sector for its in vitro diagnostic device, 'Cellytics™ NK,' which allows for rapid and precise diagnostics.

OPERATIONS

Nurturing early-stage technology-based startups through its subsidiary, Korea University Holdings Co. Ltd.

39.8 Billion KRW
Invested in 142 Cases as of March 31, 2024

1.7 Trillion KRW
Total Enterprise Value of Invested Companies

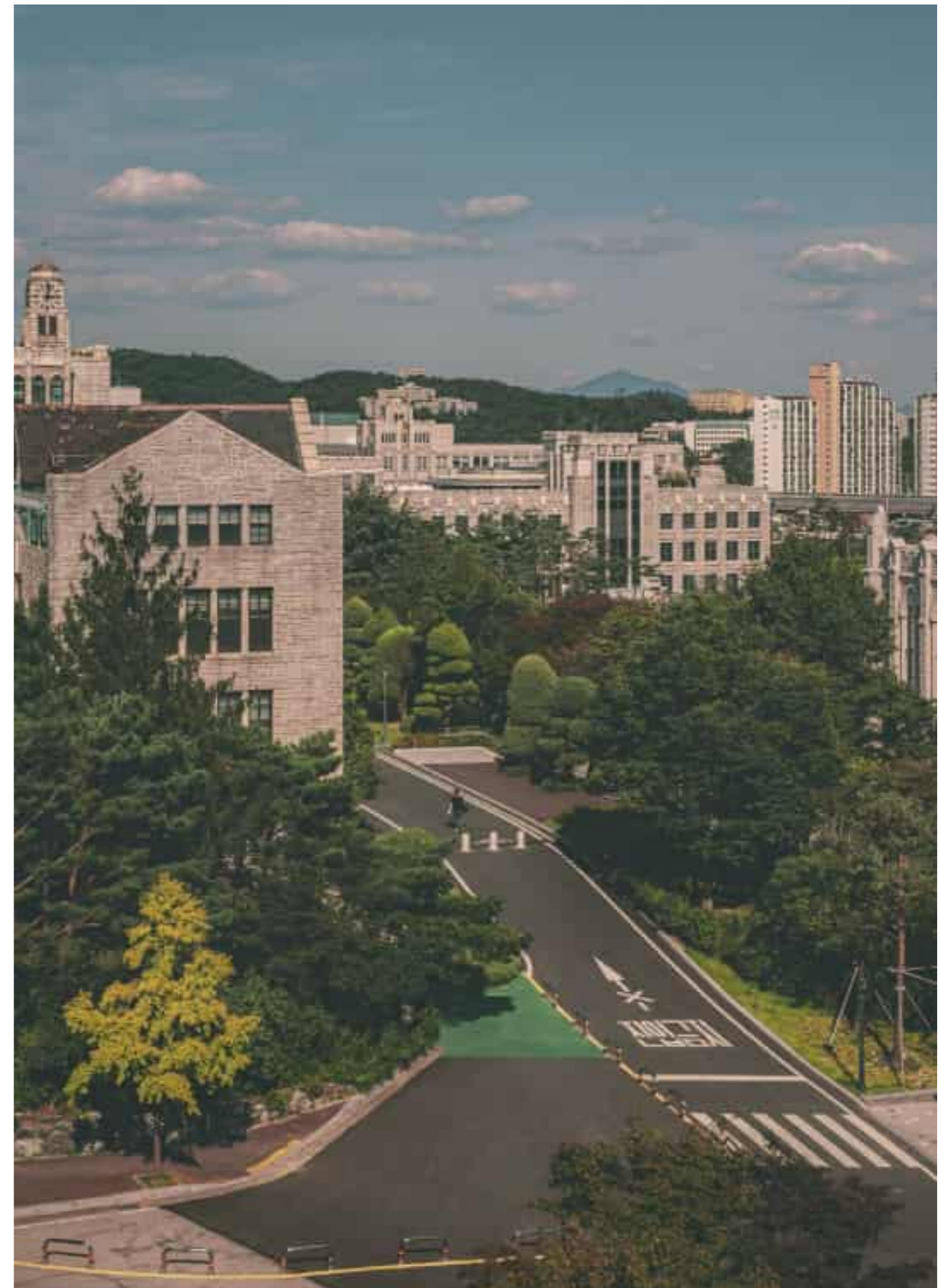
365.9 Billion KRW
Total Investment Attraction

2.8X
Average Company Value Growth

A Medical Center Technology Holding Company supports innovation in the medical sector.



KU complies with the Labor Standard Act and provides a living wage in accordance with this act and KU's regulations on the remuneration of faculty and staff.



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



TO BUILD RESILIENT INFRASTRUCTURE, PROMOTE INCLUSIVE AND SUSTAINABLE INDUSTRIALIZATION AND FOSTER INNOVATION

Korea University strives to collaborate with industry, academia, and research institutions, as well as government bodies, to lead research efforts.

RESEARCH


Highlighted Research

"Performance Optimization of Serverless Computing for Latency-Guaranteed and Energy-Efficient Task Offloading in Energy-Harvesting Industrial IoT" proposes a new system to help minimize computing costs.


"Hedging the Bet on Digital Transformation in Strategic Supply Chain Management: A Theoretical Integration and an Empirical Test" adds value to the literature on strategic supply chain management.

Notable institutes include the **Artificial Intelligence Research Institute**, the **Big Data Convergence Business Group**, and the **Human-Inspired AI Research Institute**.


59+ Institutes Engaged in SDG 9-Related Research



652
Scholarly Output



5.25%
of All Korean Publications



Citation Count
18,294

1.58 FWCI*

Data Period: 2018–2022, Data Source: SciVal, as of June 4, 2024
*FWCI: Field-Weighted Citation Impact

TEACHING AND LEARNING



The ESG Research Institute at KU hosts an impactful **ESG Lecture Series** on key ESG initiatives.

ESG Lecture Series



6 Sessions in 2023



462 Participants




Lectures on topics like Environment, Society, Governance, International ESG Policy Trends and Challenges, Climate Tech, Circular Urban Water Cycles, and Sustainability Regulations in Indonesia

49+ Extracurricular Activities Related to Industry, Innovation and Infrastructure

OPERATIONS

At **Korea University Makerspace**, all members can engage in creation and collaboration with the guidance of expert trainers, regular training sessions, and access to the latest equipment.

The space promotes creativity and innovation by encouraging networking and sharing ideas with a diverse range of people.



47

Spin-Off Technology Holding Companies in 2023, Including Medical Center at Seoul

Patents

1,482


Domestic and International Patent Applications (as of 2022)

639


Domestic and International Patent Registrations (as of 2022)




Research Income




87.6 Trillion KRW
Medicine




44.6 Trillion KRW
STEM (Science, Technology, Engineering, Mathematics)



45 Trillion KRW
Arts and Humanities/Social Sciences

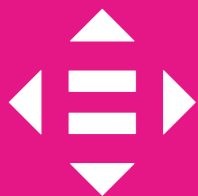


177.16 Trillion KRW
Total



"KU Actively Collaborates With Industry, Academia, Research Institutes, and Government to Tackle Resource Circulation, Energy Environments, and Climate Challenges"

10 REDUCED INEQUALITIES



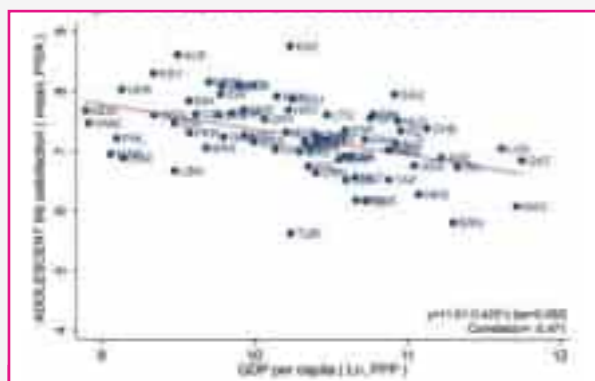
TO REDUCE INEQUALITY WITHIN AND AMONG COUNTRIES

Korea University strives to uphold the core values of diversity, such as openness, inclusion, and equity to create a community that respects diversity and welcomes everyone, irrespective of their differences.

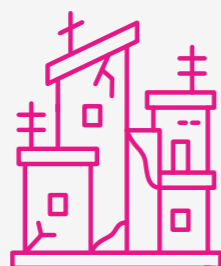
RESEARCH

Highlighted Research

The Paradox of Wealthy Nations' Low Adolescent Life Satisfaction



The study has recently gained attention in both international and Korean news outlets and finds that adolescents in high-income countries experience lower mental well-being than their counterparts in middle-income countries.



Small Area Variations in Four Measures of Poverty Among Indian Households: Econometric Analysis of National Family Health Survey 2019-2021

The study analyzes small-area variations in four household poverty measures across India and reveals significant **inequality within districts**, particularly among households in the bottom 10th and 20th wealth percentiles, and in regions experiencing multidimensional poverty.



Progress on Sustainable Development Goal Indicators in 707 Districts of India: A Quantitative Mid-line Assessment Using the National Family Health Surveys, 2016 and 2021

Findings reveal that many districts, particularly in central and eastern India, are not on track to meet the SDG targets by 2030, emphasizing the need for targeted policy interventions in areas like poverty, hunger, health, and gender equality to ensure comprehensive development.



244

Scholarly Output



Citation Count

4,717



8.14% of All Korean Publications

1.58 FWCI*

Data Period: 2018-2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact

TEACHING AND LEARNING



KU trains global experts through the 2023 Global Business and Human Rights Management and ESG Executive Program.

Mandatory Course for All Members



All members of KU must complete the mandatory **Human Rights and Gender Equity** class. This policy is unique among Korean universities.

KU's Center for Human Rights & Gender Equity offers a range of extracurricular programs aimed at **safeguarding human rights, promoting sexual autonomy, and preventing violations among campus members** on a regular basis.

The Extracurricular Activities by the Center for Human Rights & Gender Equity



8 Seminars on Human Rights and Gender Equality (Once a Month During the Semester)



337 Participants in 2023



4.8-5/5 Average Satisfaction Score

47+ Extracurricular Activities Related to Reduced Inequalities

ENGAGEMENT AND OUTREACH



The **Changemakers** program at the Korea University Institute for Sustainability trains students to address local issues and collaborate with communities on sustainable solutions. Students have contributed to:

- Making braille storybooks for visually impaired children
- Improving tourism accessibility in Gunsan for disadvantaged groups
- Developing smart training services for seniors
- Creating a barrier-free campus map
- Proposing improvements for safety facilities in Changsin-dong and Jongno-gu
- Expanding a project for ads on recyclers' handcarts in Seongbuk-gu



Barrier-free campus map brochure available in front of the **Center for Students with Disabilities**.

Student Activities for Sustainability



● **Korea University Disabled Association (KUDA)**, founded in **1998** to promote the human rights of students with disabilities, has been instrumental in creating a more inclusive campus. KUDA now welcomes all students interested in disability rights and operates under the slogan "**For a more barrier-free school, for a more barrier-free world.**"

- Established barrier-free seats at major university events in 2023
- Published card news to raise awareness about disability rights

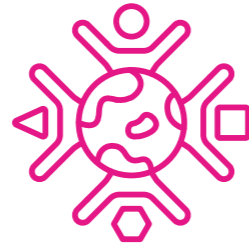


The Korea University Minority Rights Committee is a student club dedicated to ensuring the rights of minorities both on and off campus.

Through internal seminars, members study **diverse human rights issues** and **raise awareness** by producing guides for human rights and distributing newsletters.

- Participated in a **march to abolish discrimination** against people with disabilities
- Advocated for the **Special Act on Public Employment Support** for severely disabled persons

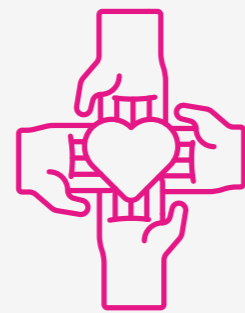
OPERATIONS



KU established the diversity council in 2019 as part of its efforts to cultivate creative future talents and realize its vision of impacting positive change upon the world.

Since then, KU has been spearheading efforts to share the core values of diversity, such as openness, inclusion, and equity.

KU consists of people from diverse backgrounds, where members of the university are respected for who they are, in full acknowledgement of their differences in race, ethnicity, national origins, gender, sexual orientation, degrees of ability, socioeconomic status, age, values, behavior patterns, religion, or culture.



In an inclusive environment where diversity is respected, everyone can freely express their abilities and share diverse perspectives and experiences to develop innovative and creative practices. Diversity is the key to the development of KU.



● Published the "**Korea University Diversity Report 2022**" in July 2023

- Released issues **35 to 39** of the diversity theoretical book online (www.diversitas.kr)
- Conducted the 2023 **Diversity Awareness Survey**
- Hosted the 2023 Graduate Student Research Paper Sharing Session for Spreading Diversity Values



Professor **Changrok Soh** was re-elected as a member of the **UN Human Rights Committee** in April, 2024. Prof. Soh, the **first South Korean member** to be elected to the UN Human Rights Committee, has been a part of the Committee since 2021 and is currently serving as Vice Chair of the Committee.

● **201** Students from 41 Developing Countries



Selected as an Outstanding University for Students Disability Welfare by the Ministry of Education for Four Consecutive Years



56 Faculty and Staff Members with Disabilities in 2023*



*The figures are based on 2023 data

Providing Educational Opportunities for Students with Disabilities

- Special admissions process for fair access to education

- Support from the **Special Support Committee** and **Support Center**
- Group coaching sessions and projects for a disability-friendly campus
- Transportation assistance for individuals with reduced mobility
- Group counseling for students with disabilities



● KU signed an **MOU** with the **Korea Employment Agency** for Persons with Disabilities (an affiliated organization under the **Ministry of Employment and Labor**) in **2023** and is making efforts to create a disability-friendly work environment by identifying various job roles for people with disabilities.



11 SUSTAINABLE CITIES AND COMMUNITIES

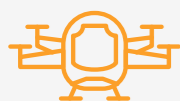


TO MAKE CITIES AND HUMAN SETTLEMENTS INCLUSIVE, SAFE, RESILIENT, AND SUSTAINABLE

Korea University is committed to the preservation of cultural heritage and the promotion of education on the importance of preserving and inheriting cultural values.

RESEARCH

Highlighted Research



Toward Cooperative Air Transportation Services in Urban Areas

An innovative air transportation service management algorithm for **Urban Air Mobility** employs a centralized training approach and a distributed execution communication network to advance next-generation air transportation services in cities.



Urban Factors Found to Influence Land Surface and Outdoor Air Temperatures

A case study from Seoul, Korea, finds that the amount of building coverage and its proportion of pervious (open) areas significantly affect land surface temperature, with more buildings leading to higher temperatures and taller buildings significantly influencing local air temperatures.

KU has various research institutes dedicated to preserving cultural heritage, including the **Center for Korean Studies**, the **Outreach Center for Korean Linguistic, Literary, and Cultural Studies**, the **Research Institute of Korean Studies**, and the **Institute for Cultural Heritage Convergence**.

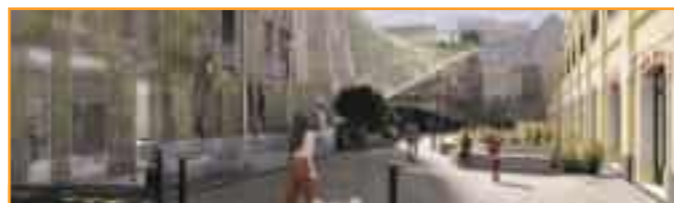
The Cultural Heritage Smart Technology Convergence Education and Research Team integrates modern culture with technology via research, educational, and outreach activities.

TEACHING AND LEARNING

KU offers curricula in various fields to help understand SDG 11, including **Sustainable Architecture and Urbanism** (Department of Architecture), **Management of Technology for Sustainable Development** (College of Engineering), and **Urban Resilience** (Department of Integrative Energy Engineering). Additionally, the university operates numerous problem-based learning courses focused on environmental improvements in the university and local community.

85+ Extracurricular Activities Related to Sustainable Cities and Communities

ENGAGEMENT AND OUTREACH



The **Green Wave** team from **Korea University's Department of Architecture** was commended at the Saint Gobain International **Architecture Student Contest** held in **Lisbon, Portugal**.

The team's design effectively integrated modern architectural elements while respecting the area's heritage, highlighting sustainable architecture practices in urban development.

Korea University Anam-dong Campus Town 2023 Project

KU supports the development of youth entrepreneurship clusters to improve the environment of underdeveloped communities, address youth housing issues, and enhance the local business district around the university. By connecting the university with the community and the public sector and sharing resources, it aims to establish a sustainable local management system.

OPERATIONS

Efforts to Conserve Heritage



The university's buildings are designated as modern cultural heritage, and the Korea University Museum actively preserves important cultural artifacts. Notable treasures include the **Donggwoldo jar with a chrysanthemum design** from the **Joseon Dynasty**, an **armillary sphere**, and an **armillary clock**.

The Korea University Museum plays a crucial role in showcasing and educating the public about national and regional heritage.

In April 2023, the **Irregular Korea University VS Yonsei University Friendship Games** took place at Korea University's **Hwajung Fitness Center**. This special event was an unscheduled sports competition between KU and Yonsei University, distinct from their regular annual **Ko-Yon Games**.

The event featured various sports matches, allowing both universities to engage in friendly rivalry outside the usual yearly schedule.



20,259 Visitors Attracted in 2023



KU fosters a vibrant campus and community through annual public performances that feature art, music, and cultural activities for campus members and local residents.

3+ Diverse Performances Each Month for All



KU has transformed its campus into a walking trail for local residents and a major tourist attraction, where families often enjoy walking. The university also offers tour programs for middle and high school students, with over 21,755 in 2023.

Advanced Sustainable Transport Culture on Campus




Over 85.9% Use sustainable transport modes.




More than half of public transportation users said that KU's location offers easy access to transit, with nearby subway stations and bus stops.


Survey of 952 respondents (survey period: May 20 to 29, 2024)



416
Scholarly Output



5.01%
of All Korean Publications



Citation Count
9,158

1.5 FWCI*

Data Period: 2018-2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact

12 RESPONSIBLE CONSUMPTION AND PRODUCTION



TO ENSURE SUSTAINABLE CONSUMPTION AND PRODUCTION PATTERNS

Korea University fosters research collaboration and participates in resource circulation initiatives to help reduce waste, promote sustainable consumption, and contribute to environmental protection.

RESEARCH

Highlighted Research



Performance, Limitation, and Opportunities of Acid-Resistant Nanofiltration Membranes for Industrial Wastewater Treatment

This study examines the challenges of using nanofiltration for acidic wastewater and explores approaches to develop more durable and effective membranes for industrial wastewater treatment by focusing on increasing their stability in acidic conditions.



Where Does ESG Pay? The Role of National Culture in Moderating the Relationship between ESG Performance and Financial Performance

The study suggests that in individualistic and masculine cultures, companies with strong ESG practices tend to experience higher financial returns, while in cultures that emphasize hierarchy and risk aversion, a direct correlation between ESG performance and financial success is less probable.

TEACHING AND LEARNING

KU enhances students' capabilities by employing various approaches to understand SDG 12 through programs such as **Fashion Industry and Sustainable Development** (Department of Home Economic Education) and **Sustainable Development Goals and Environment** (Department of Education).

15+ Extracurricular Activities Related to Responsible Consumption and Production

ENGAGEMENT AND OUTREACH

Waste reduction initiatives at the **Korea University Festival (Daedongje)** are held every spring.

- **Zero Waste Stations** established to promote waste separation
- Approximately **22,000** disposable containers replaced with reusable ones
- **Voluntary waste separation** led by the student council



• **Zero Waste Stations** were introduced at **KU's Seoktap Daedong Festival** to encourage waste separation and recycling.

A **Minimal Waste Booth** was operated during the 2023 festival to educate students on proper waste practices.

In collaboration with Beautiful Store, the **Earth Living Bazaar** was hosted to encourage the donation and sale of clean, unused items, promoting resource recycling and sustainable consumption.

OPERATIONS



• Since signing an **MOU** with **Fairtrade Korea** in **2022**, KU has been working to establish and promote the values and principles of fair trade across campus. This includes developing policies and conducting various campaigns and forums.



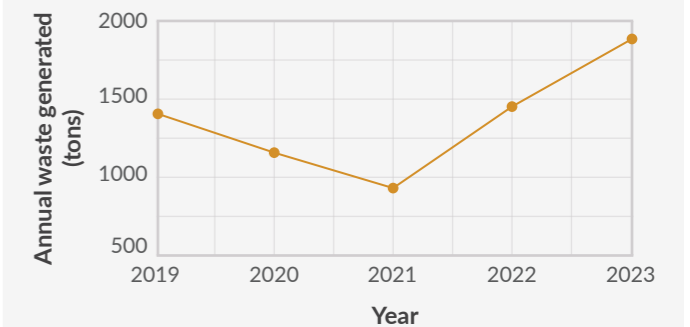
Sustainable Consumption and Production Initiatives

- KU has operated a specialized mall for eco-friendly products since June 2023.
- Products include items with environmental labels, recycling certifications, and energy-saving marks.
- Generated **1,512 million KRW** in sales within the first six months.



KU separates and recycles all waste generated on campus

Annual Waste Generation Over the Last 5 Years (2019-2023)



*There has been an increase due to increased student activities with the resumption of in-person classes in 2023 following COVID-19



Advancing Recycling Practices and Environmental Stewardship On and Off Campus

- Signed agreements with **11** organizations, including the **Ministry of Environment**, to promote a culture of resource recycling
- Implemented initiatives to reduce single-use items and improve waste separation and recycling
- Engaged in collaborative research to advance recycling and sustainability practices
- Acted as a catalyst, influencing other universities to adopt similar measures



380

Scholarly Output



6.24% of All Korean Publications



Citation Count 19,349

2.55 FWCI*

Data Period: 2018-2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact

13 CLIMATE ACTION



TO TAKE URGENT ACTION TO COMBAT CLIMATE CHANGE AND ITS IMPACT

Korea University aims to achieve environmental excellence in the carbon-neutral era by combating the global issue of climate change.

RESEARCH

Highlighted Research



Elevated Temperature Enhanced Lethal and Sublethal Acute Toxicity of Polyethylene Microplastic Fragments in *Daphnia magna*

This study reveals that polyethylene microplastic fragments are significantly more toxic to *Daphnia magna* at **25°C** than at **20°C**, highlighting the increased threat of microplastics as global temperatures rise.



Economic Feasibility of Energy Storage Systems Using Discarded Electric Vehicle Batteries

A study conducted in the Philippines, Indonesia, and Vietnam finds that discarded lithium-ion batteries from electric vehicles retain **70–80%** of their performance. When combined with solar power systems, these batteries can reduce energy costs by **55.9%** compared to using diesel power.

22+ Institutes Engaged in SDG 13-Related Research



Various networks at KU promote climate action through research such as the **Institute of Green Manufacturing Technology**, the **Zero-Energy Cooling Materials Research Institute**, and the **Graduate School of Air Quality Management**.

TEACHING AND LEARNING

In May 2023, KU was selected as a **Green Leadership Certification Curriculum Operating University** by the **Ministry of Environment**. Green Leadership Curriculum offers courses and internships focused on climate, sustainability, and carbon neutrality. Upon completion, students receive a prestigious Green Leadership Certificate co-signed by the Minister of Environment and the President.

40+ Extracurricular Activities Related to Climate Action

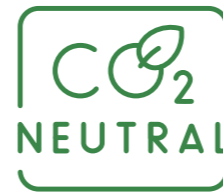
ENGAGEMENT AND OUTREACH



Green Ambassadors, operated by the **University Research Institute Industry Collaboration Center** since 2022, aim to raise environmental awareness and promote sustainability among students through various campus activities centered on waste battery management.



OPERATIONS



KU's 2045 Carbon Neutral Plan, launched in 2022, aims to achieve carbon neutrality by integrating sustainability into every aspect of university operations.

- Engages all stakeholders, including leadership, faculty, staff, and students
- Embeds sustainability into educational programs and practices



As part of the Net ZERO initiative, KU has renovated its lighting system, converting up to **95%** of all lights to LED since 2022. This initiative saved **5,924,229 kWh** in 2023. KU is committed to achieving 100% LED lighting in all campus buildings in a near future.

KU is working to reduce the use of fossil fuels by utilizing **renewable energy**.

Since 2019, the university has been installing **solar power systems** on major buildings across the Seoul campus. Currently, solar energy is being produced at five locations, including SK Future Hall. Additionally, geothermal and water-source heat pump systems are also operational on campus.



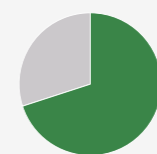
President Dong-One Kim of KU joined the **Bye Bye Plastic Challenge** and announced new initiatives:

- Installed Zero Waste Stations across campus to facilitate waste separation and recycling
- Introduced tumbler washing machines in high traffic areas to encourage the use of reusable containers and reduce disposable waste

Sustainable Transportation Culture on Campus

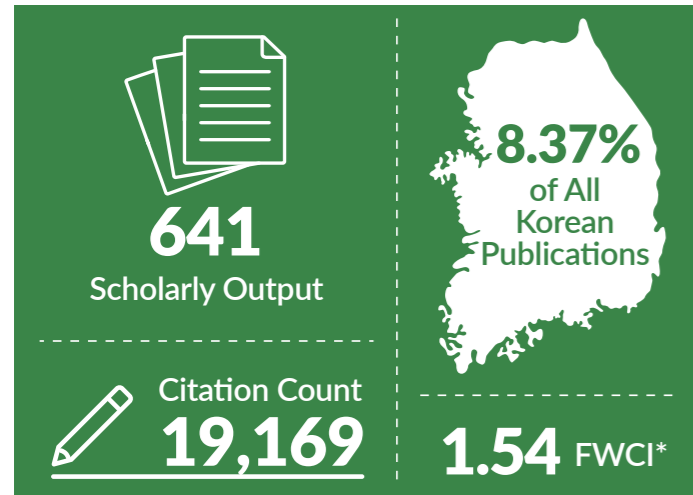


89 Electric Vehicle Chargers installed at 17 locations on the Seoul Campus



70% Respondents are willing to use sustainable modes of transport to combat climate change, even if it is inconvenient

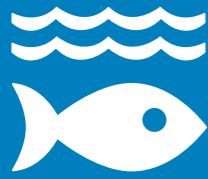
Survey of 952 respondents (survey period: May 20 to 29, 2024)



Data Period: 2018–2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact

14 LIFE BELOW WATER

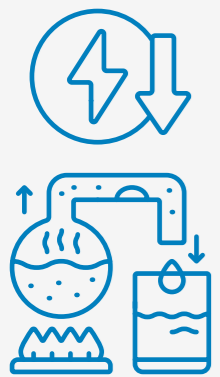


TO CONSERVE AND SUSTAINABLY USE THE OCEANS, SEAS, AND MARINE RESOURCES FOR SUSTAINABLE DEVELOPMENT

Korea University promotes the sustainable use of marine resources by conducting extensive research to develop novel technologies aimed at the conservation of the oceans and seas.

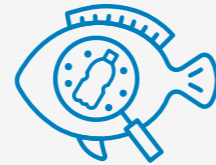
RESEARCH

Highlighted Research



Pilot Study of Emerging Low-Energy Seawater Reverse Osmosis (SWRO) Desalination Technologies for High-Salinity, High-Temperature, and High-Turbidity Seawater

A new pilot-scale SWRO desalination plant treats **100,000–200,000 m³/d** of seawater with a specific energy consumption of **3.11–3.13 kWh/m³** for the entire plant (all processes included) to produce water with a salinity of **200 mg/L** or less.



Marine Microplastics: Abundance, Ecotoxic Consequences, and Interactions

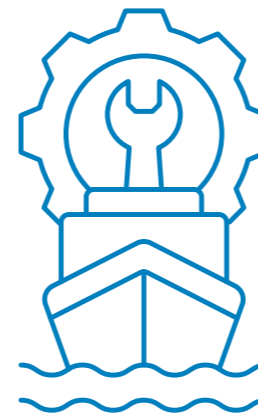
This chapter from the book *Energy, Environment, and Sustainability* provides a comprehensive update on oceanic microplastics and discusses their rising prevalence, role as contaminants, impact on marine life, and interactions with marine microbes.

KU strives to address the challenges related to SDG 14 through theoretical and practical approaches. The **Earth and Environmental Science Education and Research Group** and **Marine Environment Research Lab** are specialized in education and research related to SDG 14 in the field of natural science, while the **Center for Global Climate and Marine Governance** focuses on education and research aimed at achieving SDG 14 in the field of social sciences.

Professor Suh-Yong Chung received the **Service Merit Medal** from the **Ministry of Oceans and Fisheries** on **in June, 2023**, for his significant contribution to marine environment policies. His efforts include collaborating with an Indonesian agency on ocean carbon sequestration projects and participating in the signing of an **MOU** with the **Global Green Growth Institute**.



TEACHING AND LEARNING



KU offers the **Environmental Systems Engineering Laboratory Executive Program**, catering to professionals in shipping, shipbuilding, logistics, and fisheries.



The Korea University Maritime Law Center held the **2023 Korea University Maritime Law Specialist Course** in December, 2023. Now in its 15th year, this course brings together corporate and banking professionals, as well as academic society members, to deeply explore various maritime-related issues. This year's course attracted the attendance of over **200** experts from various fields, including **Samsung SDS, Korea Ocean Business Corporation, and KDB Bank**.



The **Korea University Research Institute of Korean Studies** and the **Korea University Maritime Law Center** collaborated with the **Korea Ocean Foundation** in July for the **Next-Generation Maritime Policy Leader Development Academy**.

The aim of this event was to enhance the understanding of the importance of maritime policies and to engage in maritime affairs.

4+ Extracurricular Activities Related to Life below Water

OPERATIONS



KU implements various campaigns to foster a sustainable marine ecosystem.

In **2021**, then-President **Jin-Taek Jung** led a university-wide relay campaign titled **“Save the Sea,”** raising awareness about marine debris. Building on this effort, in **2023**, **President Dong-One Kim**, encouraged by the **Seoul Mayor**, took on the **Bye Bye Plastic Challenge**. Through these initiatives, KU actively promotes reducing plastic and single-use items, and encouraging the use of reusable items at campus events.



190
Scholarly Output

Citation Count
5,547



5.11%
of All
Korean
Publications

1.49 FWCI*

Data Period: 2018–2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact



15 LIFE ON LAND



TO PROTECT, RESTORE, AND PROMOTE THE SUSTAINABLE USE OF TERRESTRIAL ECOSYSTEMS AND FORESTS, AND HALT BIODIVERSITY LOSS

Korea University strives to protect, restore, and promote the sustainable use of terrestrial ecosystems through pioneering research endeavors.

RESEARCH

Predicting the Impact of Climate Change on the Habitat Distribution of *Parthenium hysterophorus* around the World and in South Korea

Using a modeling approach, researchers predicted that, as a result of climate change, **21 countries**—including **South Korea**—are expected to transition from low to high suitability for the invasive weed *Parthenium hysterophorus* by **2081–2100**, posing a **threat** to native biodiversity.

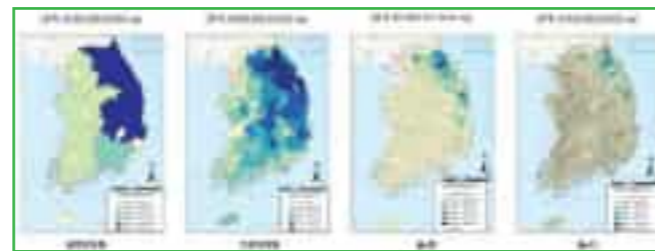
Modeling Phytoremediation of Heavy Metal Contaminated Soils Through Machine Learning

KU researchers used machine learning to identify that the size of the metal ion being absorbed and the type of plant significantly affect the efficiency of phytoextraction by hyperaccumulators, which are plants that can absorb heavy metals from soil.



Korea University OJEong Resilience Institute (OJERI), a leading research hub in

sustainability and resilience established in **2014**, focuses on critical areas such as waste management, water resilience, climate change adaptation, ecosystem sustainability, SDGs, and the water-food-energy nexus.



Carbon Absorption Map

The institute has developed a detailed **Carbon Absorption Map** in collaboration with the **Korea Forest Service** that identifies carbon absorption capacities at administrative unit levels, from metropolitan areas down to villages, allowing local governments and communities to make informed decisions for carbon neutrality initiatives.

Daily Wildfire Risk Map

OJERI has also created a **Daily Wildfire Risk Map** accessible on the OJERI website, in collaboration with the **Korea University Environmental Geographic Information Sciences/Remote Sensing Laboratory**, which uses artificial intelligence, satellite imagery, weather data, and human activity analysis to make both long-term (three-month) and short-term (three-day) predictions regarding wildfire hotspots in Korea.

TEACHING AND LEARNING

7+ Extracurricular Activities Related to Life on Land



ENGAGEMENT AND OUTREACH



The Korea University Institute for Sustainability actively supports communities impacted by climate change-related disasters.

Since the Naksan Temple fire in **2005**, the institute has been organizing annual tree-planting initiatives, such as the **Naksan Tree Care** volunteer activity, to restore the affected forest. The consistent commitment of the members towards the environment is demonstrated by the participation of over **100** people in the annual events.



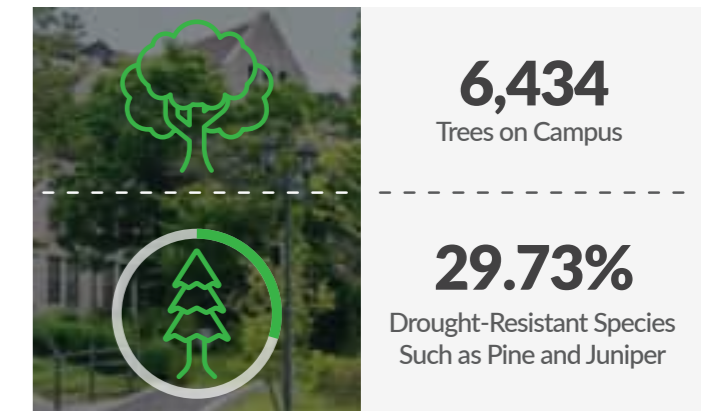
The Convergence Institute for National Unification held the **Implementation and Direction of Green Détente on the Korean Peninsula** symposium to mark the first anniversary of the Yoon Suk-yeol administration.

The event explored strategies to promote peace and prosperity between North and South Korea through environmental cooperation.

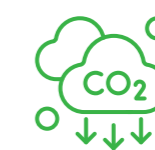
OPERATIONS

Sustainable Living Campus

KU selects and manages tree species and planting sites to create a sustainable environment on campus.



- Tree species and planting sites reviewed to minimize artificial watering
- The **Landscape Advisory Committee** monitors and improves the management and condition of the trees



KU will implement a **Land Use, Land Use Change, and Forestry** strategy as part of its **2045 Carbon Neutral Plan**.

By categorizing campus areas into settlements, forests, and cropland, KU aims to manage carbon offsets effectively.



226 Scholarly Output

Citation Count **6,569**



1.44 FWCI*

Data Period: 2018–2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact

16 PEACE, JUSTICE AND STRONG INSTITUTIONS



TO PROMOTE PEACEFUL AND INCLUSIVE SOCIETIES FOR SUSTAINABLE DEVELOPMENT AND PROVIDE ACCESS TO JUSTICE FOR ALL

Korea University aims to create unified, peaceful, and inclusive societies through groundbreaking research.

RESEARCH

Highlighted Research



Intergenerational Transmission of Intimate Partner Violence Among Women: Evidence from the 2017 Philippines National Demographic and Health Survey

Analysis of the **2017 Philippines National Demographic and Health Survey** shows that women who witnessed intimate partner violence (IPV) during childhood are more likely to experience and inflict IPV themselves, highlighting the importance of incorporating violence prevention into parenting and community programs to disrupt the cycle of intergenerational IPV.



Childhood Abuse and Cortical Gray Matter Volume in Patients with Major Depressive Disorder

This study reveals that patients with major depressive disorder who experienced childhood abuse, particularly sexual abuse, have significantly smaller cortical gray matter volumes compared to healthy controls.

KU is proud of dedicated research institutes, including the **Institute of Governmental Studies**, the **Peace & Democracy Institute**, the **Legal Research Institute**, and the **Institute of Cyber Security & Privacy**, with a strong focus on **Peace, Justice, and Strong Institutions**.

Towards a Unified Korea

The **Convergence Institute for National Unification** was established under President Dong-One Kim to focus on research and groundwork for Korean unification. The institute conducts research on various aspects of inter-Korean relations, including politics, economics, society, and culture.

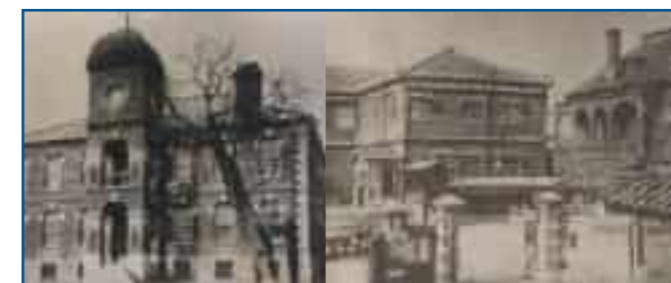
In **2023**, the institute hosted a symposium titled **The Current State and Quality Improvement Direction of North Korean Economic and Social Statistics**, where researchers shared insights from statistical studies on North Korea. These findings improved the quality of research and strengthened understanding between the two countries.

TEACHING AND LEARNING



KU is guided by the educational principles and motto of **Libertas, Justitia, and Veritas**. It is the only university in Korea and abroad that emphasizes justice as a core educational principle.

Since **2018**, KU has offered the unique **Libertas Justitia Veritas** course, designed as a common general elective for new students. This course explores intellectual reflections across three fields: **Humanities, Social Science, and Natural Science**. Through this course, students learn to think about individuals, society, and civilization in different ways.



The **Korea University School of Law**, with a history of **116** years, originated from **Bosung College**, which initially comprised two departments: **Specialized Study in Law** and **Specialized Study in Economics**. This marked the beginning of higher education in law.

College of Law Graduates



13,916 Total (as of August 2023)

124 Number of Graduates in 2023

KU produced the highest number of law school entrants in the country in 2023.



2023 Global Legal Forum

The Korea Legislation Research Institute hosted the **2nd Global Legal Forum of 2023**, themed **Global Norms and Challenges for Healthcare Data Sharing and Utilization**. This forum aimed to foster dialogue and the exchange of knowledge among legal experts, policymakers, and industry practitioners regarding global norms and the challenges of safeguarding healthcare data.

The Institute previously held the **1st Global Legal Forum**, which focused on **Global Agenda and Legal Challenges in the Space Sector**, addressing various issues related to the **2023 United Nations Committee on the Peaceful Uses of Outer Space**.



Joint Solutions for the Korean Peninsula



147

Scholarly Output



Citation Count
22,704



6.22%
of All Korean Publications

19.53 FWCI*

Data Period: 2018–2022, Data Source: SciVal, as of June 4, 2024

*FWCI: Field-Weighted Citation Impact

The **Korea Legislation Research Institute**, in collaboration with the **Ministry of Government Legislation** and the **Korean Association for Unification Law**, hosted an academic conference on the **UN SDGs and the Improvement of Environmental Legislation in North and South Korea**.

- Legislative strategies for environmental cooperation between North and South Korea
- Research on laws related to inter-Korean relations and unification
- Published a dictionary of North Korean legal terms
- Gathered stakeholders from academia, industry, research, and government

The **Korea University Institute for Political Research** has created platforms for discussion on a wide range of topics, including democracy, market economy, political polarization, basic income, gender issues, and declining birth rates. These discussions take place through seminars, academic conferences, and policy forums aimed at government officials, academic experts, and students.



- Additionally, to promote high-quality education within the community, the institute conducts lectures on subjects such as democracy, national security, and civil society through the **Companion Citizen University** at the **Seongbuk Village Center for Citizen Education**, serving local residents.



- In June, KU signed an agreement with the **Korea Internet & Security Agency** for the **2023 Personal Data Protection Innovation Talent Development Project** to advance innovation in the field of personal data protection.

KU established the world's first **School of Cybersecurity** in **2000**, during the early days of cyberspace. Following the **7.7 DDoS Attack** and the increasing need for national responses to cyberattacks, the university collaborated with the **Ministry of National Defense** to launch the **Cyber Defense Department** in **2012**. In **2021**, KU enhanced its cybersecurity education by establishing the **Department of Smart Security** to develop specialized engineers in software and artificial intelligence security.

38+ Extracurricular Activities Related to Peace, Justice and Strong Institutions



- KU has signed an **MOU** with the **Korea Coast Guard** to strengthen maritime scientific investigation capabilities and infrastructure.

Through this agreement, the university aims to enhance the training of cybersecurity professionals and to further advance joint research, academic exchanges, and forensic advisory services to the government.

OPERATIONS

KU has several key committees to uphold research integrity and ethical standards under the **Research Ethics Center**.



Ethics Charter

Provides ethical guidelines for faculty, staff, and students.



Research Integrity Commission

Addresses research ethics and misconduct.



Institutional Review Board

Ensures the rights, safety, and welfare of human research subjects and human-derived materials such as embryos and embryonic stem cell lines.



Institutional Animal Care and Use Committee

Reviews the ethics and validity of animal research.



Institutional Biosafety Committee

Assesses the safety and impact of research involving genetically modified organisms and pathogens.

KU operates several reporting systems through **KU Ombuds**, including:

- **Compliance Violation Reporting:** For reporting violations of laws, regulations, and university policies by staff
- **Anti-Bribery Reporting:** For reporting improper requests or bribery involving university members
- **Human Rights Violation Reporting:** For issues related to sexual harassment, abuse of power, workplace bullying, discrimination based on nationality, disability, and other human rights concerns
- **Research Misconduct Reporting:** For reporting fraud or misuse of research funds
- **Student Researcher Grievance Counseling:** A platform for addressing concerns of student researchers

These systems ensure confidentiality and strive to maintain transparency and trust among university members.



The **Presidential Council on JEDI and Sustainability** oversees the institution's **ESG** management and **SDG** implementation

The Council fosters a collaborative environment by bringing together **diverse stakeholders**, including administrators, students, and community members, to tackle challenges and explore opportunities related to sustainability.

17 PARTNERSHIPS FOR THE GOALS




TO STRENGTHEN THE MEANS OF IMPLEMENTATION AND REVITALIZE THE GLOBAL PARTNERSHIP FOR SUSTAINABLE DEVELOPMENT

Korea University promotes the global partnership for sustainable development by conducting collaborative research and outreach programs.


RESEARCH

International Research Network


(QS* World University Rankings 2024)



350.2
Partners (QS)



42.6
Locations (QS)



45.65 International Research Network Index (QS)

Data Period: 2018–2022, Data Source: SciVal, as of June 4, 2024

*QS: Quacquarelli Symonds

TEACHING AND LEARNING



● KU has provided a **Master's Degree** program for government officials from developing countries, funded by the **Korea International Cooperation Agency (KOICA)**.

Since **2007**, KU has educated over **287** students in both theoretical and practical aspects through this program. According to a survey conducted by KU, most of the students have successfully promoted and applied Korean expertise in developing policies in their home countries.



KU with support from **KOICA**, provides capacity-building training for officials from the **Cambodian Ministry of Foreign Affairs**.



● **40+ Cambodian officials** trained at KU since **2022**.



● KU co-hosted the **6th Global Conference: ESG Management & Sustainability** in collaboration with the **Association of Pacific Rim Universities** and the **International ESG Association** in November, 2023.

The conference gathered over **100** global experts, including leading researchers and key figures from the top **10** universities, to discuss critical topics such as climate change, soil and groundwater remediation, and renewable energy.



The **CAMPUS Asia Plus Program** contributes to advancing SDG 17 through academic and practical cooperation among partner universities in **Japan, China, Thailand, and Laos**.

It aims to nurture regional risk management experts to contribute to addressing the global risks manifested in the SDGs through partnership.



● KU hosts the **Korea University International Summer School** annually, attracting over **3,000** students from around the world.

The program offers a wide range of courses and outreach activities, including those focused on sustainability, allowing students to gain insights into South Korea's strategies for a sustainable society. It also includes participation from students from developing countries.

KU has strengthened its partnership with the **United Nations Development Programme (UNDP) Seoul Policy Center (USPC)**. As a partner, the university contributed to USPC's **Korea launch of 2021/22 HDR** in Seoul in **September 2022**, with the Ministry of Foreign Affairs of the Republic of Korea and UNDP's Human Development Report Office.

Since the **Korea University Graduate School of International Studies** signed an **MOU** with USPC in **2002**, it has diversified its partnerships to focus on sustainability. In **2023**, the Korea University Graduate Program Specialized in **Carbon Sink** signed a **Statement of Intent** with **USPC**.



KU, in collaboration with the Korea Green Campus Council, hosted the Asia Sustainable Campus Network (ASCN) 2023 conference in November 2023

Faculty and students from **16** universities across Korea, China, Japan, and Thailand participated in the event, themed **Path to SDGs and Carbon Neutrality**, engaging in discussions and sharing ideas on green campus energy-saving campaigns and social economy projects.

150+ Extracurricular Activities Related to Partnerships for the Goals

ENGAGEMENT AND OUTREACH



KU is the host university of the Sustainable Development Solutions Network (SDSN) Korea

Like the United Nations SDSN, it focuses on finding practical solutions to implement the SDGs and the **Paris Climate Agreement**. SDSN Korea emphasizes external cooperation, academic projects, and nurturing future generations. By **2022**, it has educated **890** students through the SDGs Academy, trained **211** young SDGs leaders, developed **751** young SDGs innovators, and identified **68** community-based SDGs solutions.



고려대학교 지속가능원
KU Institute for Sustainability

The Korea University Institute for Sustainability is actively involved in various international cooperation initiatives to address global social and environmental challenges.

These programs aim to foster cross-cultural collaboration, enhance students' problem-solving skills, and promote sustainability.



● **Vision Education Camp in Cambodia**

KU in collaboration with **Cambodia Friendream**, organized volunteer building projects to improve living conditions for underprivileged Cambodian families. Over seven days of volunteer work, they built a house for one family.

2023 Vietnam Da Nang Dong A University X Korea University Online PBL Program

Students from both universities collaborated to develop innovative solutions for challenges such as child obesity, air pollution, and plastic waste.

Student Activities for Sustainability



● **11th Asian Students Environment Platform (ASEP)**

KU students participated in ASEP 2023, held online in August 2023.

Hosted by the **AEON Environmental Foundation** in **Japan**, the event gathered students from **10** countries, including **Association of Southeast Asian Nations, Japan, China, and Korea**, to discuss global environmental challenges and solutions. Students collaborated and presented their findings in the **Cluster** metaverse, a virtual space that simulates a shared physical environment.

| **OPERATIONS**



Global Partnership with 876 Universities in 95 Countries

Among **95** countries, **24** are from low-income and middle-income countries.

KU acknowledges the climate change crisis and its responsibility to find solution. Consequently, the university is expanding its active participation in both domestic and international activities by joining various international networks. KU is actively involved in sustainability-related university networks such as the **U7 Alliance, ISCN Network, HESI Network, IARU, and IUCA.**



71 MOUs Related to the SDGs Signed in 2023






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