

SDGs REPORT UNIVERSITAS MUHAMMADIYAH SEMARANG 2025

A University for the Excellence.


UNIVERSITAS MUHAMMADIYAH SEMARANG
UNIMUS
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UNIMUS
SUPPORTS SDGs


UNIMUS
GREEN CAMPUS

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REPORT SCOPE



This report presents Universitas Muhammadiyah Semarang (UNIMUS)'s commitment, initiatives, and contributions to the 17 Sustainable Development Goals (SDGs). The report covers activities and institutional practices across education, research and innovation, community engagement, campus operations, governance, environmental sustainability, and partnerships. It provides an overview of how UNIMUS integrates the SDGs into its academic and institutional activities and highlights key programs, achievements, and impacts contributing to sustainable development.

The scope encompasses UNIMUS's institutional policies, programs, activities, research outputs, community engagement initiatives, campus operations, and strategic partnerships that demonstrate direct or indirect contributions to the SDGs. Evidence is drawn from relevant university units, faculties, study programs, research and community service activities, and institutional programs within the reporting period.





OUR APPROACH TO SUSTAINABILITY

At Universitas Muhammadiyah Semarang (UNIMUS), sustainability is approached as an integrated institutional commitment that extends beyond environmental responsibility. We embed sustainable development principles across our core missions of education, research, community engagement, governance, and campus development, while aligning our actions with the Sustainable Development Goals (SDGs).

DRIVING CHANGE

Turning commitment into measurable action through programs, policies, and initiatives that address social, environmental, and institutional challenges.

CREATING IMPACT

Generating meaningful outcomes through education, research, innovation, community engagement, and institutional transformation.

BUILDING PARTNERSHIPS

Strengthening collaboration with government, communities, industry, academia, and international partners to accelerate sustainable development.

Rector's Foreword



Praise be to Allah SWT for His blessings and guidance, enabling Universitas Muhammadiyah Semarang (UNIMUS) to continuously strengthen its commitment to sustainable development. As a higher education institution, UNIMUS recognizes that universities have a strategic role in addressing global challenges and contributing to a more equitable, inclusive, and sustainable future. Our commitment to the Sustainable Development Goals (SDGs) is therefore integrated into our academic and institutional development.

At UNIMUS, the SDGs are translated into meaningful actions through education, research and innovation, community engagement, environmental stewardship, and responsible institutional governance. These efforts are strengthened through collaboration among the academic community, government, industry, communities, and other strategic partners. Through this collective approach, UNIMUS seeks not only to develop academic excellence but also to generate tangible and lasting impact for society and the environment.

This SDGs Report presents our ongoing efforts, achievements, and contributions toward sustainable development. More than a record of activities, this report represents our commitment to transparency, accountability, and continuous improvement. It also serves as a reflection of our journey and a foundation for strengthening future strategies in advancing sustainability across the University.

As we move forward, UNIMUS remains committed to embedding sustainability into every dimension of university life and to strengthening our contribution to the global SDGs agenda. We believe that meaningful transformation begins with collective commitment, consistent action, and a shared vision for the future.

"Building a sustainable future is not only about what we achieve today, but about the positive legacy we create for generations to come."

Prof. Dr. Masrukhi, M.Pd
Rector Universitas Muhammadiyah Semarang

INTRODUCTION

Universitas Muhammadiyah Semarang (UNIMUS) is a growing higher education institution committed to academic excellence, innovation, and meaningful contributions to society. Guided by the values of Muhammadiyah, UNIMUS integrates education, research, community engagement, and responsible governance to create positive and sustainable impact. Through its commitment to inclusivity, environmental sustainability, and the Sustainable Development Goals (SDGs), UNIMUS continues to strengthen its role as a university that contributes to a healthier, more equitable, and sustainable future.



DRIVING CHANGE



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Our commitment is reflected in continuous efforts to foster an inclusive learning environment, advance impactful research, empower communities, promote environmental responsibility, and strengthen partnerships. Through these efforts, UNIMUS seeks to contribute meaningfully to the achievement of the 17 Sustainable Development Goals (SDGs) while responding to local and global challenges.

We recognize that sustainability is a continuous journey that requires collective action, measurable progress, and strong collaboration. Therefore, UNIMUS remains committed to strengthening its sustainability practices, expanding its positive impact, and building a resilient institution for present and future generations.

SUSTAINABLE CAMPUS & GREEN INFRASTRUCTURE

Indicator	Progress
Green Open Space Management	UNIMUS has 191,656.08 m² of open/non-building area, representing 90.05% of the total campus area.
Integration of Infrastructure with Nature	The campus integrates green landscapes and open areas with academic, research, healthcare, residential, and supporting facilities.
Sustainable Campus Planning & Facilities	UNIMUS manages an integrated campus of 212,834 m², comprising 15 buildings with a total floor area of 105,442 m².
Efficient Land Use	The total building footprint is 21,177.92 m², equivalent to approximately 9.95% of the campus area, maintaining substantial non-building space.
Green Campus & Environmental Quality	Open areas include landscaped and tree-covered areas, pedestrian routes, internal circulation, courtyards, plazas, and other non-building spaces, supporting campus environmental quality.

GREEN OPEN SPACE



90.05% of the campus area is maintained as open/non-building space, supporting green landscapes, pedestrian circulation, outdoor activities, and environmental quality.

INTEGRATED CAMPUS & NATURE



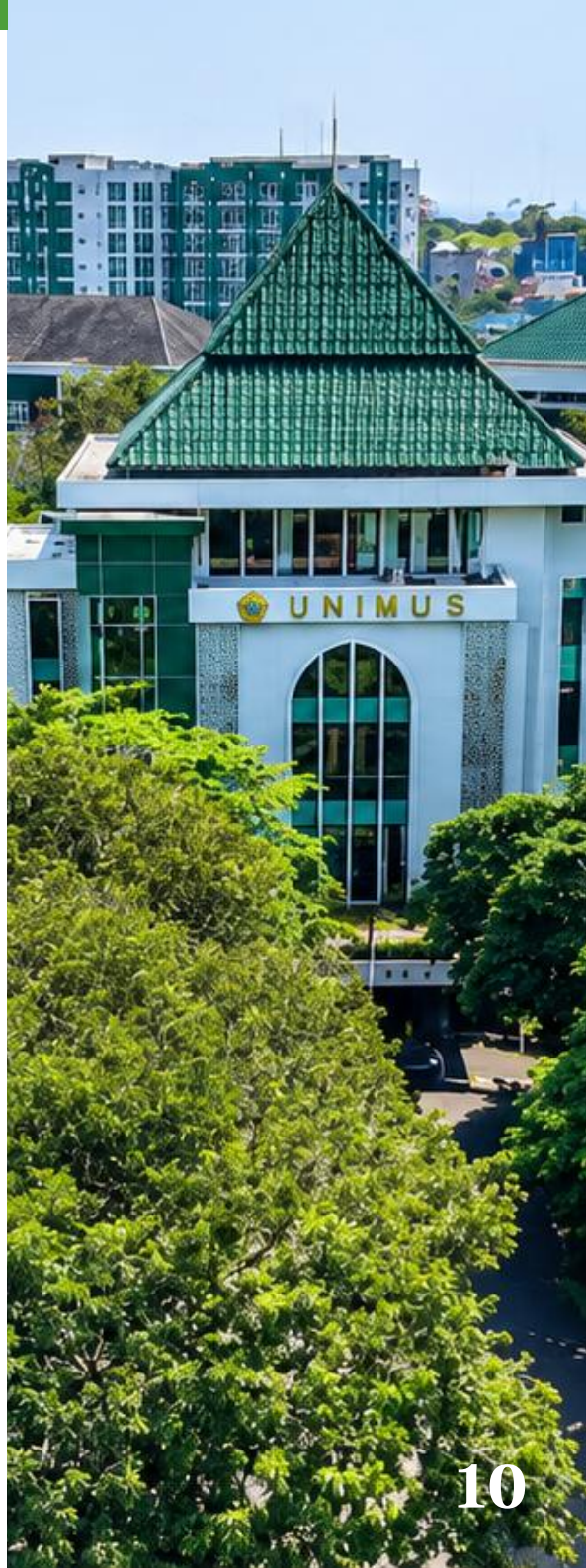
UNIMUS operates as an integrated 212,834 m² main campus comprising 15 buildings, with green landscapes and open areas incorporated into the campus environment.

EFFICIENT LAND USE



With a building footprint of only 9.95% of the campus area, UNIMUS maximizes the use of vertical and shared facilities while maintaining extensive non-building areas.



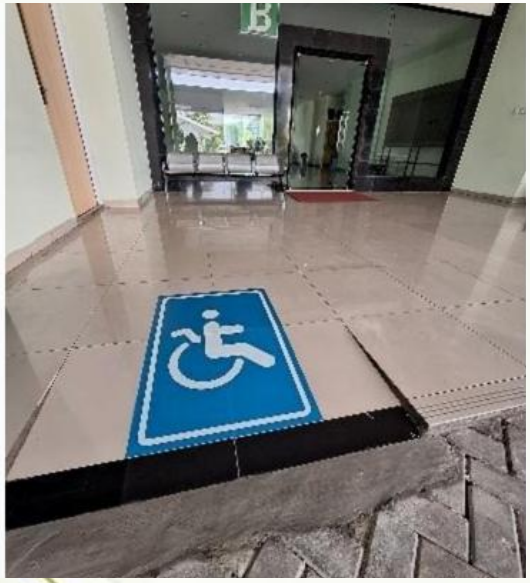


UNIMUS is committed to creating an inclusive and disability-friendly campus through the Disability Services Unit (ULD), established in 2025. The University provides accessible facilities and support, including designated parking areas, ramps, accessible pathways, wheelchairs, academic assistance, and disability support funding, enabling students with disabilities to participate more fully in academic life.

UNIMUS is also supported by a network of healthcare facilities, including RSGM UNIMUS, RS UNIMUS, and Klinik Pratama, providing accessible healthcare services for students, staff, and the wider community. These facilities strengthen the University's commitment to promoting health, well-being, and inclusive access to healthcare services.













UNIMUS implements an integrated water management system focused on water conservation, recycling, efficiency, and pollution control. The programs include extensive green open spaces and water-absorbing surfaces, rainwater infiltration reservoirs and infiltration wells, water-saving fixtures, digital water meters and monitoring systems, and the reuse of treated wastewater through WWTP and biofilter systems. Rainwater and treated wastewater are reused for non-potable purposes such as irrigation, gardening, and campus cleaning, while wastewater quality is monitored regularly and separate drainage systems are implemented across campus buildings.
Additionally, the document reports that 90.04% of the campus area is designated for water absorption, supported by green open spaces, permeable paving, and infiltration infrastructure.



WASTE SEGREGATION AND RESPONSIBLE WASTE MANAGEMENT

UNIMUS strengthens responsible waste management through the implementation of waste segregation practices across the campus environment. Waste is sorted into designated containers according to its type, supporting proper handling, recovery, and further processing. This initiative encourages the campus community to adopt responsible waste disposal habits and contributes to a cleaner, more organized, and environmentally sustainable campus as part of UNIMUS' Green Campus commitment.

ORGANIC WASTE

UNIMUS promotes sustainable organic waste management through an integrated composting and Black Soldier Fly (BSF) processing system. Organic waste is processed through segregation, shredding, and composting to produce ready-to-use compost, while BSF larvae are utilized to process organic waste into a valuable biological resource. These practices demonstrate UNIMUS' commitment to reducing organic waste, promoting resource recovery, and implementing circular economy principles on campus. Through environmentally responsible waste management, UNIMUS continues to strengthen its Green Campus initiatives and foster a cleaner, more sustainable campus environment.









WASTE MANAGEMENT

UNIMUS implements an integrated waste management system based on the principles of Reduce, Reuse, and Recycle (3R), including reducing plastic and paper consumption, reusing materials, recycling inorganic waste, treating organic waste through composting and eco-enzyme production, and managing hazardous waste separately and responsibly. These efforts are supported by the UNIMUS Waste Bank, waste collection and segregation facilities, collaboration with licensed third-party waste management providers, and educational initiatives that engage the academic community in promoting responsible consumption and production.



SUSTAINABLE MOBILITY & TRANSPORTATION

UNIMUS implements sustainable transportation through shared mobility, zero-emission vehicles (ZEVs), pedestrian-friendly infrastructure, and policies that reduce dependence on private fossil-fuel vehicles. The university provides shuttle services, bicycles, and e-bikes free of charge, while gradually reducing parking areas and restricting the use of fuel-powered vehicles on campus. These initiatives are supported by accessible pedestrian pathways, online classes, Car Free Day activities, and awareness campaigns promoting public transportation and walking. Together, these programs encourage low-emission mobility, improve accessibility, reduce commuting-related environmental impacts, and contribute to a healthier and more sustainable campus environment.



Shuttle Service
Free campus shuttle to reduce private vehicle use.



E-bikes
Electric bikes provided for a cleaner and more sustainable campus.



Bicycles
Bicycles available to support active and zero-emission mobility.



Car Free Day & Awareness
Activities and campaigns to promote public transportation and walking.

SUSTAINABLE CAMPUS

PEDESTRIAN-FRIENDLY CAMPUS INFRASTRUCTURE

Universitas Muhammadiyah Semarang (UNIMUS) is committed to creating an inclusive, safe, and welcoming campus environment for all, including people with disabilities.

This effort is realized through the provision of pedestrian pathways, ramps, handrails, barrier-free access, and accessible parking areas located in strategic locations close to the main buildings. These facilities enable the entire academic community, including people with disabilities, to move comfortably and independently across the campus.

The development of pedestrian-friendly infrastructure reflects UNIMUS's commitment to building a sustainable, inclusive campus that supports a healthier, more active, and environmentally friendly lifestyle.

Aligned with the SDGs

- 11 SUSTAINABLE CITIES AND COMMUNITIES
- 3 GOOD HEALTH AND WELL-BEING
- 10 REDUCED INEQUALITIES



Shaded Pedestrian Pathway
A comfortable and green pedestrian environment in the UNIMUS campus.



Accessible Building Entrance
Ramp access to support independent movement for wheelchair users.



Accessible Parking
Special parking area for people with disabilities in a strategic location close to the main buildings.



Campus Pedestrian Route
Pedestrian routes and ramp locations across the UNIMUS campus.



CREATING IMPACT

Universitas Muhammadiyah Semarang (UNIMUS) is committed to creating meaningful and measurable impact through the integration of education, research, innovation, and community engagement. By collaborating with communities, government institutions, industry, and international partners, UNIMUS translates knowledge and innovation into practical solutions that contribute to sustainable development and improve the well-being of society, leaving a lasting positive impact.

EDUCATION FOR SUSTAINABLE DEVELOPMENT

UNIMUS integrates sustainability principles into its academic curriculum by embedding **environmental, social, economic, ethical, and governance** perspectives across diverse study programs.

Through sustainability-related courses, students are equipped with the **knowledge, skills**, and **values** needed to understand complex challenges, develop responsible solutions, and contribute to sustainable development. This integration reflects UNIMUS's commitment to preparing graduates who are not only **academically competent**, but also **socially responsible** and capable of creating meaningful impact for society and the environment.









ENVIRONMENTAL
Climate action, biodiversity, water, waste, and sustainable resource management.

SOCIAL
Health, inclusion, community empowerment, equality, and social well-being.

ECONOMIC
Sustainable business, entrepreneurship, resource efficiency, and innovation.

317
SUSTAINABILITY-EMBEDDED COURSES
ACROSS UNIMUS STUDY PROGRAMS

ETHICAL & GOVERNANCE
Ethics, accountability, professional responsibllity, and good governance.

EDUCATION & INNOVATION
Transformative learning, research, problem solving, and innovation for sustainability.

CONTRIBUTION TO THE SDGs



ADVANCING GENDER EQUALITY

Universitas Muhammadiyah Semarang (UNIMUS) is committed to advancing gender equality by fostering an inclusive, equitable, and supportive academic and working environment for all members of the university community. This commitment is reflected in equal opportunities for women and men in education, employment, leadership, professional development, research, and community engagement. UNIMUS promotes a campus culture that respects equal rights and participation, while supporting women's academic and professional advancement across various institutional roles. Gender equality is also integrated into educational, research, and community service activities, enabling the university to contribute to greater awareness of gender equity and women's empowerment in society. Through these efforts, UNIMUS continues to strengthen an institutional environment where all individuals can participate, develop their potential, and contribute meaningfully regardless of gender.



GENDER EQUALITY AND WOMEN IN LEADERSHIP

UNIMUS demonstrates its commitment to gender equality through strong female representation in institutional leadership, with women holding approximately 50% of leadership positions. This balanced representation reflects the university's commitment to equal opportunities and meaningful participation of women in decision-making and institutional development.



SOCIAL CONTRIBUTION & COMMUNITY ENGAGEMENT

UNIMUS strengthens its contribution to sustainable development through community engagement programs that connect academic knowledge, research, innovation, and community needs. Through community service, student-led initiatives, health programs, literacy activities, economic empowerment, and technology transfer, UNIMUS works collaboratively with communities and local partners to address social and economic challenges.

These initiatives are designed not only to provide short-term assistance, but also to **strengthen community capacity, promote self-reliance, and create sustainable solutions based on local needs and potential**. Across health, education, literacy, entrepreneurship, agriculture, and technology, UNIMUS continues to translate its academic expertise into meaningful social impact.





COMUNITY EMPOWERMENT


EDUCATION AND LITERACY



INNOVATION AND TECHNOLOGY

INTERNATIONAL COLLABORATION



Expanding Global Partnerships for Sustainable Academic Impact

UNIMUS is committed to fostering meaningful international partnerships that connect institutions, academics, students, and communities across countries. Through collaborative education, research, student mobility, cultural exchange, and community engagement, these partnerships contribute to a more inclusive, connected, and globally oriented academic environment.

Contribution to SDGs





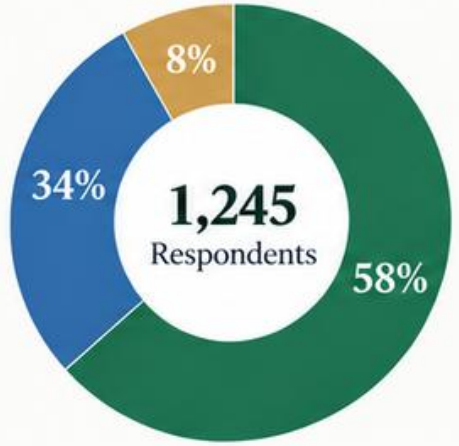
UNIMUS conducts the Sustainability Literacy Assessment once every academic year at the end of the academic year through the UNIMUS Sustainability website. The assessment evaluates students' and academic staff's understanding of sustainability and the Sustainable Development Goals (SDGs), providing valuable insights into strengths and areas for improvement. Through this regular assessment, UNIMUS remains committed to strengthening sustainability literacy, integrating sustainable development into education, and fostering an informed, responsible, and sustainability-oriented academic community

4 QUALITY EDUCATION

Sustainability Literacy Assessment

UNIMUS conducts an annual Sustainability Literacy Assessment to evaluate students' and academic staff's understanding of sustainability and the Sustainable Development Goals (SDGs).

Students

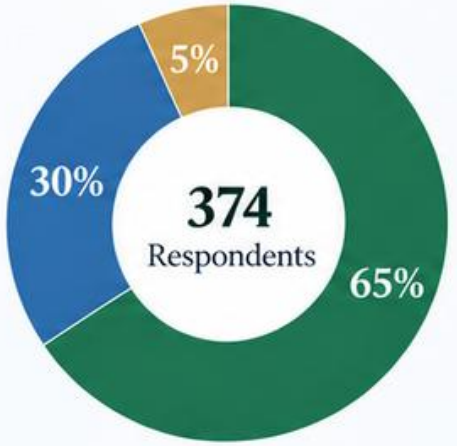


1,245
Respondents

11.2%
Participation Rate

15.8 / 20
(79%)
Average Score

Academic Staff



374
Respondents

85%
Response Rate

16.7 / 20
(83.5%)
Average Score

UNIMUS
Research Contributions to the SDGs

In 2025, UNIMUS research publications contributed across all 17 Sustainable Development Goals (SDGs), reflecting our commitment to addressing global challenges through impactful and sustainable research.

1 NO POVERTY	2 ZERO HUNGER	3 GOOD HEALTH AND WELL-BEING	4 QUALITY EDUCATION	5 GENDER EQUALITY	6 CLEAN WATER AND SANITATION
1 publications	7 publications	41 publications	0 publications	5 publications	3 publications
7 AFFORDABLE AND CLEAN ENERGY	8 DECENT WORK AND ECONOMIC GROWTH	9 INDUSTRY, INNOVATION AND INFRASTRUCTURE	10 REDUCED INEQUALITIES	11 SUSTAINABLE CITIES AND COMMUNITIES	12 RESPONSIBLE CONSUMPTION AND PRODUCTION
4 publications	5 publications	4 publications	4 publications	2 publications	5 publications
13 CLIMATE ACTION	14 LIFE BELOW WATER	15 LIFE ON LAND	16 PEACE, JUSTICE AND STRONG INSTITUTIONS	17 PARTNERSHIPS FOR THE GOALS	
3 publications	2 publications	2 publications	0 publications	4 publications	



UNIMUS
Community Services Contributions to the SDGs

Universitas Muhammadiyah Semarang (UNIMUS) actively translates its commitment to sustainability into meaningful community engagement through integrated health, environmental, educational, and empowerment initiatives. Community service programs provide health education, basic health screening, nutrition and stunting-prevention education, and capacity building for community health cadres. Environmental initiatives promote waste segregation, environmental cleanliness, tree and mangrove planting, recycling, renewable energy awareness, and sustainable water management.



HEALTH PROMOTION AND BASIC SCREENING



ENVIRONMENTAL ACTION



EDUCATION AND COMMUNITY EMPOWERMENT

Programs such as the Fostered Village initiative, Community Service in Tambak Lorok Village, Development Area, and environmental sustainability campaigns demonstrate UNIMUS's commitment to empowering communities while addressing local health, social, and environmental challenges. Through these initiatives, UNIMUS strengthens the role of students and academic communities as agents of sustainable development and contributes to the achievement of the Sustainable Development Goals (SDGs).





RECOGNITION

In 2025, Universitas Muhammadiyah Semarang (UNIMUS) received significant recognition for its achievements in institutional excellence and sustainability. UNIMUS was ranked 59th nationally and 2nd among private universities (PTS) in Central Java. Within the Muhammadiyah and Aisyiyah higher education network (PTMA), UNIMUS achieved 6th place nationally and 1st place in Central Java. These recognitions demonstrate UNIMUS' continued commitment to advancing sustainable campus development, strengthening institutional excellence, and creating meaningful and lasting impacts for society.

UI GreenMetric World University Rankings

UNIVERSITAS INDONESIA
Veritas, Probitas, Iustitia | Est. 1849

UI GreenMetric World University Rankings 2025

CERTIFICATE

This certificate is awarded to

Universitas Muhammadiyah Semarang, Jawa Tengah

as The 592nd World's Most Sustainable University in 2025 UI GreenMetric World University Rankings

5 December 2025

UI GREENMETRIC WORLD UNIVERSITY RANKINGS

Dr. Vishnu Juwono, S.E., MIA
Chairperson of UI GreenMetric

UNIMUS WUR UI GREEN MATRICS PERFORMANCE 2025

SI Setting & Infrastructure
Current: **975** Maximum: 1500
65.00%

WR Water
Current: **587.5** Maximum: 1000
58.75%

EC Energy & Climate Change
Current: **1295** Maximum: 2100
61.67%

TR Transportation
Current: **1312.5** Maximum: 1800
72.92%

WS Waste
Current: **875** Maximum: 1800
48.61%

ED Education & Research
Current: **1512.5** Maximum: 1800
84.03%

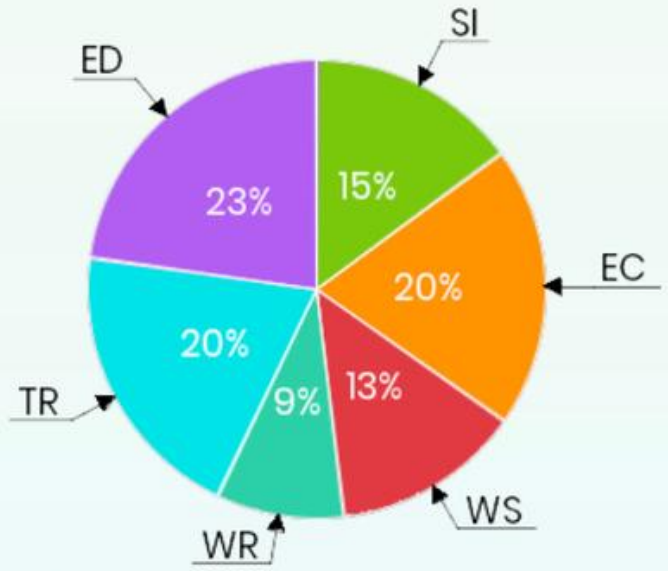


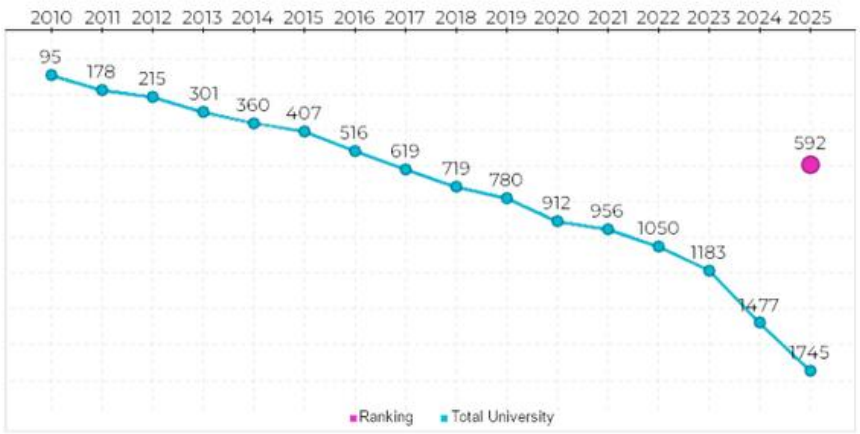
Figure 1.1 Category Score Contribution to Total Score

World Ranking

592

SI Ranking	EC Ranking	WS Ranking
605	711	868

WR Ranking	TR Ranking	ED Ranking
761	515	310



Country Ranking

59

SI Ranking	EC Ranking	WS Ranking
66	75	85

WR Ranking	TR Ranking	ED Ranking
73	52	52


UNIMUS
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REPORT 2025

SDG 1 NO POVERTY



SDGS 1

Universitas Muhammadiyah Semarang (UNIMUS) demonstrates its commitment to Sustainable Development Goal 1 (No Poverty) by promoting equitable access to higher education, supporting students from economically disadvantaged backgrounds, and contributing to community economic empowerment. This commitment is reflected not only in scholarship https://unimus.ac.id/beasiswa/ schemes and financial assistance for students in need, but also in initiatives that facilitate access to education, strengthen community capacity, and support sustainable livelihoods. Through community service programs, entrepreneurship development, vocational training, and partnerships with local communities and small enterprises, UNIMUS can contribute to improving economic resilience and expanding opportunities for vulnerable groups. These initiatives reflect the university's broader role in reducing socioeconomic inequalities and supporting inclusive and sustainable development.











Our Commitment to SDGS 1: NO POVERTY



In 2025, Universitas Muhammadiyah Semarang (UNIMUS) strengthened its commitment to Sustainable Development Goal 1 (No Poverty) through collaboration with Indonesia's Ministry of Social Affairs. This collaboration reflects the university's role in supporting national poverty alleviation efforts through community empowerment and village-based development initiatives. By leveraging its academic expertise, research capacity, and community service programs, UNIMUS seeks to contribute to the development of sustainable, data-driven interventions that address local socioeconomic challenges, improve community welfare, and expand opportunities for vulnerable populations. This initiative demonstrates UNIMUS's commitment to working with government institutions to support inclusive development and accelerate poverty reduction.

In addition, UNIMUS, through its Student Affairs Bureau and LazisMu, provided support for students affected by disasters in Sumatra and Aceh by preparing 1,000 food assistance packages and offering tuition fee relief to seven students facing severe difficulties. These initiatives reflect UNIMUS's efforts to strengthen social protection, improve community resilience, and maintain access to higher education for students experiencing economic hardship.These initiatives reflect our commitment to strengthening social protection, improving community resilience, and ensuring continued access to higher education for students experiencing economic hardship.



Our Commitment to SDGS 1: NO POVERTY

In 2025, Universitas Muhammadiyah Semarang (UNIMUS) demonstrated its commitment to Sustainable Development Goal 1 (No Poverty) by empowering local micro, small, and medium-sized enterprises (MSMEs) in Mangunharjo, Semarang. Through a community service program, UNIMUS supported the Berkah Mulia Abadi gazebo and wooden house business by introducing computer-aided design, CNC wood-cutting technology, and digital marketing strategies. These interventions aimed to improve production efficiency, strengthen business competitiveness, expand market opportunities, and support the potential creation of local employment. By applying academic expertise and technology to address challenges faced by local entrepreneurs, UNIMUS contributes to strengthening economic independence, promoting sustainable livelihoods, and creating opportunities for inclusive local economic development.





In 2025, our commitment to Sustainable Development Goal 1 (No Poverty) was reflected in the implementation of the Sekolah Perempuan Plus program in Kandangrejo Village, Grobogan Regency, led by the PPK Ormawa team of IMM Ahmad Dahlan, Universitas Muhammadiyah Semarang (UNIMUS). The program empowered rural women through practical entrepreneurship training in local food processing and makeup services, helping them develop marketable skills and explore opportunities for independent income generation. Participants were trained to produce value-added red onion products, including fried onions, onion sticks, and onion dumplings, while others developed practical makeup skills for potential service-based businesses. Through community-based skills development and entrepreneurship support, UNIMUS seeks to strengthen women's economic independence, encourage local microenterprise development, and create pathways toward more sustainable livelihoods.

SDG 1
NO POVERTY

UNIMUS RESEARCH HIGHLIGHT

Mapping Social Vulnerability to Support Targeted Poverty Alleviation



ABOUT THE RESEARCH

This study applies a Fuzzy Geographically Weighted Clustering (FGWC) approach optimized with the Artificial Bee Colony (ABC) algorithm to analyze social vulnerability across 119 districts and cities in Java, Indonesia. The research identifies regional differences in vulnerability, providing evidence for targeted and context-specific poverty alleviation and social protection strategies.

RESEARCH AT A GLANCE

119
districts and cities in Java analyzed

5
social vulnerability clusters identified (using ABC-FGWC)

KEY FINDINGS

1. Social vulnerability varies across districts and cities in Java.
2. Five clusters with different dominant vulnerability characteristics were identified.
3. The results can inform geographicalty targeted and context-specific poverty alleviation and social protection strategies.

SOCIAL VULNERABILITY MAP OF JAVA ISLAND

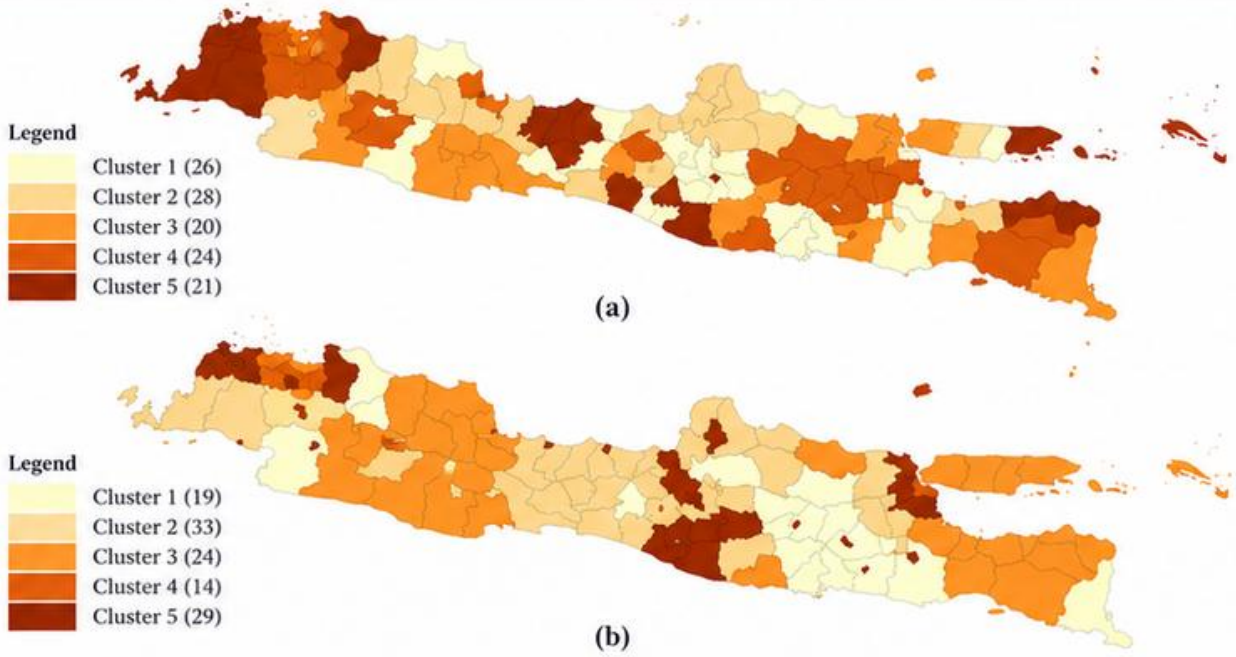


Figure 2. Social Vulnerability Map Based on: (a) FGWC Algorithm and (b) ABC-FGWC Algorithm.

CONTRIBUTION TO SDG 1

Identifies areas with different social vulnerability profiles.

Provides evidence to inform targeted poverty-alleviation and social protection policies.

Supports more equitable and data-informed regional development planning.

PUBLICATION

Fuzzy Geographically Weighted Clustering with Optimization Algorithms for Social Vulnerability Analysis in Java Island. BAREKENG: Journal of Mathematics and Its Application, 19(3), 1841–1852 (2025). | DOI: 10.30598/barekengvol19iss3pp1841-1852
https://ojs3.unpatti.ac.id/index.php/barekeng/article/view/16721



2 ZERO HUNGER

REPORT 2025

SDGS 2 ZERO HUNGER

Academic Programs Supporting Zero Hunger

UNIMUS contributes to food security and nutrition through multidisciplinary education and research. The Nutrition programme focuses on nutritional well-being and healthy diets, Agribusiness addresses agricultural systems and food supply chains, while Food Technology supports food processing, quality, safety, and innovation. Together, these academic programmes provide a foundation for advancing sustainable food systems and supporting the goals of SDG 2.


BACHELOR OF AGRIBUSINESS


BACHELOR OF NUTRITION


BACHELOR OF FOOD TECHNOLOGY



SDG 2: Zero Hunger

Promoting Sustainable Urban Farming

Universitas Muhammadiyah Semarang (UNIMUS), through the Agribusiness Student Association (HIMAGRI), promotes sustainable urban agriculture through the Urban Farming Training Programme (PLUF) 2025, held on 26 July 2025. The programme introduced students to hydroponic cultivation as a practical approach to growing healthy food in limited urban spaces. Participants received both theoretical instruction and hands-on training in growing media preparation, nutrient selection, and plant maintenance. The initiative aims to strengthen students' awareness and skills in sustainable food production, encourage small-scale urban farming, and contribute to future food security. This activity supports SDG 2 (Zero Hunger) by promoting sustainable agricultural practices and awareness of local food production.









SDG 2: Zero Hunger

Universitas Muhammadiyah Semarang (UNIMUS) fosters a culture of social care and food sharing through its Jumat Berkah initiative. Through the distribution of meals, this activity reflects a commitment to sharing food and extending support to others in the surrounding community. Beyond providing meals, the initiative encourages compassion, solidarity, and collective responsibility for the well-being of others. It aligns with Sustainable Development Goal 2 (Zero Hunger) by raising awareness of food access and the importance of community-based efforts to address food insecurity.

Jumat Berkah: A Campus Initiative for Food Sharing

COMMUNAL IFTAR: SHARING MEALS, STRENGTHENING SOLIDARITY

SDG 2: Zero Hunger

Universitas Muhammadiyah Semarang (UNIMUS) promotes togetherness and social solidarity through communal buka bersama (iftar) activities during Ramadan. By bringing members of the university community together to share meals, the activity fosters a sense of belonging, mutual care, and appreciation for the importance of food in bringing people together. This initiative reflects the values of SDG 2 (Zero Hunger) by highlighting food sharing, community engagement, and collective responsibility in supporting the well-being of others.



2 ZERO HUNGER

RESEARCH CONTRIBUTIONS TO

SDG 2: Zero Hunger

UNIMUS is committed to advancing research that supports food security, improved nutrition, and sustainable food systems for a healthier and more resilient society.

Through multidisciplinary research, UNIMUS addresses nutrition, sustainable agriculture, and climate-related challenges to strengthen food systems and support the achievement of SDG 2: Zero Hunger.

1 Stunting and Early Child Development

Izah et al. (2025). The Nigerian Health Journal.

This study investigated motor and social independence skills among stunted toddlers in Tegal City, Indonesia. The findings highlight the importance of early nutrition interventions to support optimal child development.

DOI: 10.71637/tnhj.v25i1.916



2 Female Athlete Nutrition and Health

Ulfa et al. (2025). Malaysian Journal of Nutrition.

A bibliometric analysis of the Female Athlete Triad Syndrome, mapping global research on energy availability, menstrual disorders, and bone mineral density in female athletes. The study provides valuable insights for nutrition and health promotion.

DOI: 10.3165/31-1/MJN.2024.0016



3 Sustainable Banana Farming for Food Security

(2025). International Journal of Dynamics in Nuclear Engineering.

This study assessed the environmental impacts of banana farming in the Special Region of Yogyakarta using Life Cycle Assessment (LCA). The results identify opportunities to reduce emissions and promote more sustainable agricultural practices.

DOI: 10.18280/ijdne.200117



4 Home-Based Management of Childhood Diarrhea

Mariyam et al. (2025). Journal of Liaquat University of Medical and Health Sciences.

A systematic review on mothers' practices in home-based management of diarrhea in children under five, including the use of oral rehydration solution, zinc supplementation, and continued feeding. The findings support efforts to prevent malnutrition and improve child health.

DOI: 10.36283/jlumhs/02



5 Forecasting Surface Temperature for Agricultural Resilience

Amri et al. (2025). Data and Metadata.

This research forecasted the surface temperature in Sragen Regency using a semiparametric regression approach based on penalized Fourier series. The findings provide important information for climate adaptation strategies, which are essential to maintaining agricultural productivity and food security.

DOI: 10.17504/dm.890/1212



6 Extreme Precipitation and Food Security in Southeast Asia

Kuswanto et al. (2025). Atmosphere.

This study analysed the response of Southeast Asia's extreme precipitation and dry periods to solar radiation management using GLENS simulations. The results provide insights into climate risks that may affect agricultural systems and water resources in the region.

DOI: 10.3390/atmos16060725





3 GOOD HEALTH AND WELL-BEING

REPORT 2025

SDGS 3: GOOD HEALTH AND WELL-BEING



ADVANCING HEALTH AND WELL-BEING

Universitas Muhammadiyah Semarang (UNIMUS) contributes to Sustainable Development Goal 3 through health-related education, research, community engagement, and collaboration with healthcare institutions. By preparing future health professionals and advancing evidence-based research, UNIMUS supports disease prevention, health promotion, and improvements in the quality of healthcare. These efforts reflect the university's commitment to promoting healthier communities and contributing to SDG 3: Good Health and Well-being.

3 GOOD HEALTH AND WELL-BEING

UNIVERSITAS MUHAMMADIYAH SEMARANG

Academic Programs Supporting Health and Well-being

UNIMUS provides comprehensive health education through multidisciplinary study programs that prepare competent health professionals, conduct impactful research, and engage in community service to promote healthier and more resilient communities.

Advancing research, improving health, empowering communities.

Faculty of Nursing and Health Sciences



The Faculty of Nursing and Health Sciences offers a range of health-related study programs to produce competent and compassionate health professionals who contribute to disease prevention, health promotion, and improved community well-being.

Bachelor of Nursing



Prepares professional nurses with clinical competence, leadership, and a commitment to community health.

Bachelor of Midwifery



Develops skilled midwives to support maternal, newborn, and reproductive health.

Bachelor of Nutrition



Focuses on nutrition science, community nutrition, and healthy diet promotion across the life span.

Diploma and Bachelor of Applied Medical Laboratory Technology



Prepares medical laboratory professionals with expertise in clinical laboratory examination, diagnostics, and research.

Bachelor of Physiotherapy



Develops physiotherapists to support mobility, functional independence, and quality of life.

Master of Nursing



Strengthens advanced nursing practice, research, and leadership in healthcare.

Faculty of Medicine



The Faculty of Medicine provides medical education that integrates biomedical sciences, clinical skills, research, and community-oriented learning to produce competent, ethical, and socially responsible physicians.

Bachelor of Medicine



Provides a comprehensive medical education to develop competent, ethical, and socially responsible physicians with a strong foundation in clinical practice and research.

Professional Medical Program



Provides clinical training to develop competent, ethical, and professional physicians.

Faculty of Dentistry



The Faculty of Dentistry provides dental education that combines clinical skills, biomedical sciences, research, and community service to produce competent dental professionals who promote oral health and overall well-being.

Bachelor of Dentistry



Prepares dental professionals with clinical competence in oral health care, preventive dentistry, and community oral health promotion.



Through education, research, and community engagement, UNIMUS prepares health professionals to create healthier communities and contribute to a better future for all.

Community Health and Prevention

Universitas Muhammadiyah Semarang (UNIMUS) supports healthier communities through health education, preventive services, community engagement, and collaborative outreach. By involving academic staff and students in health promotion and community-based initiatives, UNIMUS contributes to raising health awareness, encouraging healthy lifestyles, and strengthening early prevention of disease. These activities reflect the university's commitment to advancing public health and supporting Sustainable Development Goal 3: Good Health and Well-being.



HEALTH SCREENING FOR SCHOOL STUDENTS

UNIMUS, in collaboration with Tlogosari Kulon Community Health Center, organized free health screenings for school students in Semarang. The program provided basic health examinations to support early detection of potential health problems and promote healthy behaviors among young people.



NUTRITION EDUCATION FOR THE ELDERLY

UNIMUS postgraduate Nutrition students conducted a community service program using dragon fruit peel to support the health of older adults. The initiative combined nutrition education, health monitoring, and practical guidance on healthy diets to help improve the well-being of elderly community members.



FREE DENTAL EXAMINATIONS

The Faculty of Dentistry organized free dental examinations for the public during Car Free Day at Simpang Lima, Semarang. The activity provided oral health screening and education to raise public awareness of preventive dental care, proper oral hygiene, and the importance of maintaining good oral health.



HEALTH AND NUTRITION EDUCATION FOR CHILDREN WITH CANCER

UNIMUS conducted a nutrition education seminar for children with cancer and their families at the Indonesian Care for Cancer Kids Foundation (YKAKI) in Semarang. The program provided guidance on balanced nutrition and healthy lifestyle practices to support children's nutritional needs, treatment journey, and overall well-being.

Health Services and Partnership

UNIMUS Hospital







Provides hospital-based healthcare services while supporting clinical education, professional development, and collaboration in patient care.

UNIMUS Dental and Oral Hospital







Supports dental and oral healthcare, clinical training for dental students, and public awareness of oral health and preventive dentistry.

UNIMUS Clinic

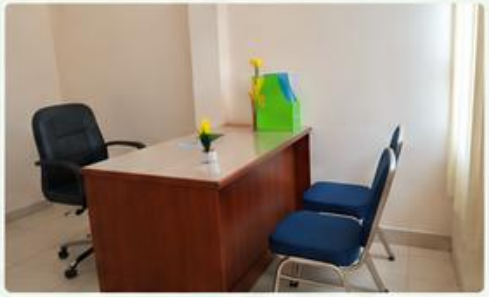






Supports primary healthcare and health promotion, providing opportunities to strengthen preventive care and community health services.

Mental Health and Counseling Services







Supports students' mental and emotional well-being through guidance and counseling services, helping them navigate academic challenges, personal development, and emotional concerns.



Through its hospital, clinic, and dental and oral hospital, UNIMUS connects education with healthcare delivery and community needs. These facilities demonstrate the university's commitment to strengthening healthcare services, developing future health professionals, and promoting better health outcomes in support of SDG 3.

Sport and Physical Facility

UNIMUS provides various sports and fitness facilities to support a healthy and active lifestyle for students and the academic community. These facilities encourage physical activity, teamwork, and well-being, aligning with Sustainable Development Goal 3.



Tennis Court

Supports recreational and competitive tennis activities for students and staff.



Volleyball Court

Used for regular training, student competitions, and recreational activities.



Basketball Court

Facilitates basketball training and competitions for students.



Futsal Court

Supports futsal activities, student leagues, and recreational sports.



Climbing Wall

Provides a safe space for rock climbing and outdoor sport training.



Gym

Equipped with various fitness equipment to support strength training, fitness, and a healthy lifestyle.

Research for Better Health

UNIMUS is committed to advancing knowledge through high-quality research that addresses current and future health challenges. Our research contributes to scientific development, evidence-based practices, and improved health outcomes for the community, in line with Sustainable Development Goal 3 (Good Health and Well-being).

41
Scopus-Indexed Publications
in 2025

UNIMUS produced 41 Scopus-indexed publications in 2025, reflecting our active contribution to global knowledge and health solutions.

Advancing research, improving health, empowering communities.



Key Areas of Health Research



Infectious Diseases

Bacterial, viral, and emerging infections, antimicrobial resistance (AMR), and infection control.



Clinical and Diagnostic Sciences

Hematology, clinical chemistry, microbiology, molecular diagnostics, and laboratory technology.



Non-Communicable Diseases

Metabolic disorders, cardiovascular health, cancer biomarkers, and chronic disease management.



Maternal, Child, and Public Health

Maternal and child health, nutrition, preventive health, and community health services.



Natural Products and Medical Innovation

Development of herbal products, biomaterials, and innovative diagnostic tools for better health outcomes.



4 QUALITY EDUCATION

REPORT 2025

SDGS 4: QUALITY EDUCATION

4 QUALITY EDUCATION

UNIVERSITAS MUHAMMADIYAH SEMARANG

Academic Programs Supporting Quality Education

UNIMUS is committed to providing quality, inclusive, and equitable education through academic programs that develop competent graduates, innovative learning environments, and lifelong learning opportunities, in line with Sustainable Development Goal 4 (Quality Education).



Academic Programs Related to Quality Education



Bachelor of English Language Education

Prepares future English teachers with strong language proficiency, pedagogical skills, and competencies for effective language learning and global communication.



Bachelor of Mathematics Education

Develops mathematics educators with strong analytical thinking, problem-solving skills, and innovative teaching methods to improve numeracy and mathematics education.



Bachelor of Chemistry Education

Combines chemistry knowledge with pedagogical skills and practical learning to prepare science educators who can improve the quality of chemistry and science education.



Teacher Professional Education Program (PPG)

Strengthens teachers' professional, pedagogical, social, and personal competencies to produce high-quality, ethical, and socially responsible educators.



Bachelor of English Literature

Enhances language proficiency, literary understanding, critical thinking, and cultural awareness, supporting broader educational development and lifelong learning.

Key Initiatives to Support Quality Education



Innovative Teaching and Learning

Implementation of student-centered learning, digital learning platforms, and innovative teaching methods.



Inclusive and Equitable Education

Equal access to education for all, including students with disabilities and underrepresented groups.



Student Development

Academic guidance, skill development, leadership training, and lifelong learning opportunities.



Educational Research and Innovation

Research and innovation to improve learning outcomes and advance education practices.

UNIMUS
UNIVERSITAS MUHAMMADIYAH SEMARANG

4 QUALITY EDUCATION

Inclusive and Equitable Education

UNIMUS provides accessible facilities to support the mobility and independence of students and visitors with disabilities. These include wheelchair-accessible entrances, designated parking areas, and accessible toilets, creating a safe, inclusive, and equitable learning environment for all.



Wheelchair-Accessible Entrance



Accessible Restroom



Designated Accessible Parking



Community Service for Quality Education

Through community service, UNIMUS contributes to expanding access to education and strengthening learning opportunities for various groups in society, including school students, youth, and community members.



01

Educational Outreach to School Students

UNIMUS lecturers conduct community service at SD/MI Al-Hikmah Semarang, providing interactive learning and character education for elementary students.



02

Student-Led Community Engagement

BEM KM UNIMUS organizes community service in Tambak Mulyo Semarang, including environmental education and hands-on activities such as waste management and urban greening.



03

Community Education and Skills Development

UNIMUS facilitates learning activities for the community, including educational workshops and practical training to enhance knowledge and skills.



04

Leadership Training and Youth Development

UNIMUS supports non-formal education through the Pelatihan Kader Paripurna Taruna Melati Utama and Regional Meeting IPM, fostering youth leadership and capacity building.

Research Contribution to SDG 4: Quality Education

UNIMUS contributes to SDG 4 through research that supports inclusive, high-quality education and promotes lifelong learning opportunities.

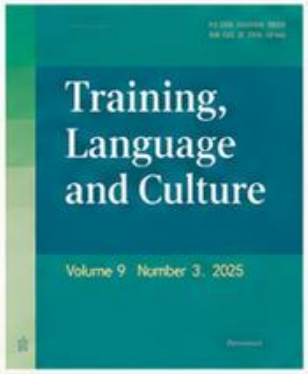
4 QUALITY EDUCATION

Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

2025 PUBLICATION

The Effects of Task-Based Learning on English Reading Motivation Among Vocational College Students

Huang Yu, Charanjit Kaur Swaran Singh, Dodi Mulyadi
Universitas Muhammadiyah Semarang, Indonesia



Journal
Training, Language and Culture

Volume, Issue, Pages
9(3), 2025, pp. 40–54

DOI
10.22363/2521-442X-2025-9-3-40-54

Contribution to SDG 4

This research contributes to SDG 4 by providing evidence that innovative, student-centered learning approaches, such as task-based learning, can enhance students' reading motivation and support the development of higher-order thinking skills. The findings inform more effective language education practices, helping to improve the quality of learning and promote meaningful, lifelong learning opportunities for students.





5 GENDER EQUALITY

REPORT 2025

SDGS 5: GENDER EQUALITY

Equal Opportunities in Education

5 GENDER EQUALITY

UNIMUS supports wider access to education through financial assistance for students from economically disadvantaged backgrounds and community-based initiatives that strengthen women's knowledge, skills, and participation in society.

WOMEN STARTING A DEGREE AT UNIMUS

2,584

Women starting a degree

Number of women who began undergraduate or graduate degree programmes.

602

First-generation women starting a degree

Number of women who began a degree and are the first in their family to attend higher education.



CONTRIBUTION TO SDG 5

By increasing women's participation in higher education, including first-generation students, UNIMUS supports gender equality and creates more opportunities for women to achieve their academic and professional goals.

UNIVERSITAS MUHAMMADIYAH SEMARANG

Women in University Leadership



UNIMUS is committed to promoting inclusive leadership and ensuring women's participation in university governance across all levels, from university leadership to faculties, study programmes, and university-level units.

53.14%

Female representation in university leadership

93 of 175 leadership positions are held by women at UNIMUS (in 2025).

DISTRIBUTION OF WOMEN IN UNIVERSITY LEADERSHIP (2025)

University level	1 of 5	**20.0%**
Faculty / School level	32 of 49	**65.3%**
Study Program level	40 of 74	**54.1%**
University-level units	20 of 47	**42.6%**

UNIMUS Initiatives
Supporting SDG 5: Gender Equality

Through collaboration, community engagement, and cultural initiatives, UNIMUS promotes gender equality and empowers women and girls in education, protection, and socio-economic development.

5 GENDER EQUALITY

Achieve gender equality and empower all women and girls







1 Protection of Women and Children

UNIMUS, together with the Religious Court of Semarang and the Central Java Provincial Government, signed a Memorandum of Understanding (MoU) to strengthen the protection of women and children.

Strategic collaboration to strengthen protection for women and children.

2 Women's Empowerment and Economic Independence

Sekolah Perempuan Plus, implemented by the PPK Ormawa IMM Ahmad Dahlan FTIK UNIMUS, provides practical skills, entrepreneurship, and digital marketing training for women in Kandangrejo.

48 women graduated in 2025.

3 Recognising Women's Contributions

UNIMUS celebrates Kartini Day with traditional Indonesian attire, honouring women's emancipation, cultural identity, and their contributions to creating a more equal and inclusive society.

Kartini Day celebrates women's emancipation, cultural identity, and equal opportunities.

Research Contributions to SDG 5: Gender Equality

UNIMUS publications contribute to gender equality by generating evidence that supports women's health, empowerment, and the prevention of gender-related challenges.

5 GENDER EQUALITY

Achieve gender equality and empower all women and girls.

01

Identifying the Reproductive Health Needs of Young Women: The GLOW (Girls Learning about Women's Health) Program Perspective

Universal Journal of Public Health (2025)

Contribution to SDG 5

Provides evidence to improve young women's reproductive health knowledge and empowerment, supporting informed decision-making and gender equality in health.

02

Effect of Health Education Interventions on Knowledge, Attitudes and Behaviour of Women Experiencing Infertility

Malaysian Journal of Nursing (2025)

Contribution to SDG 5

Supports women's health literacy, reduces stigma related to infertility, and promotes equal access to reproductive healthcare services.

03

The Perceptions of Husbands Regarding Early Marriage in Community Settings in Bengkulu, Indonesia: A Case-Control Study

Public Health of Indonesia (2025)

Contribution to SDG 5

Provides evidence to prevent early marriage and supports gender equality and the protection of girls' rights in families and communities.

04

Empowering Migrant Workers: The Development and Impact of the e-law Consult Application

Journal of Infrastructure, Policy and Development (2025)

Contribution to SDG 5

Enhances women's access to legal information, protects their rights, and supports economic and social empowerment, particularly for migrant workers.

05

Impact of IFRS 9 Applications and Earnings Management

International Journal of Economics and Finance Studies (2025)

Contribution to SDG 5

Supports transparent and accountable financial practices, which can contribute to creating equal economic opportunities for women's participation in the workforce.



REPORT 2025

SDGS 6: CLEAN WATER AND SANITATION

Water Recycling and Wastewater Treatment

Universitas Muhammadiyah Semarang (UNIMUS) supports sustainable water management through water conservation, wastewater treatment, and the potential reuse of treated water for non-potable purposes. Water management infrastructure, including infiltration areas and wastewater treatment facilities, forms part of the university's efforts to manage water resources responsibly and reduce environmental pollution. These initiatives support more efficient water use, responsible wastewater management, and a cleaner campus environment, contributing to the objectives of Sustainable Development Goal 6 (Clean Water and Sanitation).



Reservoir of Rainwater Infiltration of Universitas Muhammadiyah Semarang







Use of water-saving fixtures





Preparation of Infiltration Wells

Water Quality and Pollution Control

UNIMUS supports environmental protection through wastewater management and water pollution control initiatives. Wastewater treatment facilities, including biofilter systems and wastewater treatment plants (WWTP), help manage wastewater before its discharge into the environment. Regular wastewater quality monitoring and appropriate management of laboratory liquid waste are important components of responsible campus environmental management. These efforts contribute to the protection of water resources and support the objectives of Sustainable Development Goal 6 (Clean Water and Sanitation).



Installation of water meters and digital monitoring systems



Bio Filter of Universitas Muhammadiyah Semarang

Research Contributions to SDG 6: Clean Water and Sanitation

6 CLEAN WATER AND SANITATION

UNIMUS research published in 2025 addresses environmental sustainability through studies on hospital wastewater bioremediation, extreme precipitation, and agricultural environmental impacts. These publications contribute to scientific understanding of water-related challenges and support the broader goals of SDG 6.

01 2025

Development and Application of Hydrolytic Bacterial Microcapsules as Bioremediation Agent of Hospital Wastewater – A Case Report in Semarang

International Journal of Environmental Science and Development

Investigates the use of hydrolytic bacterial microcapsules for hospital wastewater bioremediation, supporting pollution prevention and improved wastewater management.



02 2025

Southeast Asia's Extreme Precipitation Response to Solar Radiation Management with GLENS Simulations

Environmental Research Communications

Analyzes extreme precipitation patterns in Southeast Asia using GLENS simulations, providing scientific insights into climate variability and water-related risks.



03 2025

Assessing the Environmental Impacts of Banana Farming in Yogyakarta Special Region Using Life Cycle Assessment (LCA)

Environmental Research Communications

Evaluates the environmental impacts of banana farming using Life Cycle Assessment (LCA), generating information relevant to sustainable agricultural practices and resource management.





7 AFFORDABLE AND CLEAN ENERGY

REPORT 2025

SDGS 7AFFORDABLE AND CLEAN ENERGY

Academic Programs
Supporting Clean Energy

7 AFFORDABLE AND CLEAN ENERGY

UNIMUS offers several academic programs that contribute to the development of clean energy technologies, energy-efficient systems, and sustainable infrastructure. Through education, research, and innovation, these programs equip students with the knowledge and skills needed to support the transition toward a more sustainable and low-carbon future, in line with Sustainable Development Goal 7 (Affordable and Clean Energy).



Electrical Engineering

Focuses on electrical power systems, renewable energy technologies, energy efficiency, and smart grid development.



Mechanical Engineering

Contributes to energy-efficient systems, thermal engineering, and energy conversion technologies to support clean and sustainable energy solutions.



Architecture

Supports energy-efficient building design through sustainable architecture, passive design strategies, and the optimal use of natural resources.



Civil Engineering

Contributes to sustainable infrastructure and resource-efficient construction practices, supporting resilient and low-carbon development.

Renewable Energy at UNIMUS

7 AFFORDABLE AND CLEAN ENERGY

Universitas Muhammadiyah Semarang (UNIMUS) promotes sustainable energy use through renewable energy infrastructure and energy-efficient building practices. The university utilizes solar-powered streetlights, a 2 kWp rooftop solar photovoltaic system at the Balai Latihan Kerja (BLK), and an off-grid solar power system at the campus gazebo. In addition, UNIMUS uses B20–B30 biodiesel in its generators to diversify energy sources. Smart building measures, including LED lighting and inverter air conditioning, further support energy efficiency and more sustainable campus operations. These initiatives reflect UNIMUS's commitment to advancing Sustainable Development Goal 7 (Affordable and Clean Energy).





Energy Efficiency and Conservation

7 AFFORDABLE AND CLEAN ENERGY

UNIMUS promotes energy efficiency through the use of LED lighting, inverter air-conditioning systems, and solar-powered outdoor lighting. According to the reported campus data, all 18,752 lighting units use LED technology, while 274 of 1,184 air-conditioning units are equipped with inverter technology. In addition, 25 of 78 outdoor lighting points use solar energy. These measures support more efficient campus operations and demonstrate ongoing efforts to improve energy management in line with Sustainable Development Goal 7 (Affordable and Clean Energy).



LED Lighting

18,752

lighting units use LED technology (100% of the reported lighting units).



Inverter Air-Conditioning

274

of 1,184 air-conditioning units use inverter technology (≈ 23%).



Solar-Powered Outdoor Lighting

25

of 78 outdoor lighting points use solar energy (≈ 32.1%).

Research Highlights on SDG 7 in 2025

7 AFFORDABLE AND CLEAN ENERGY

In 2025, UNIMUS lecturers and researchers conducted studies that contribute to Affordable and Clean Energy (SDG 7) through the development of renewable energy, energy-efficient technologies, and sustainable energy solutions.



01 Improving Grid Stability with Hybrid Renewable Energy and Green Hydrogen Storage: A Study of Karimunjawa Island

Mathematical Modelling of Engineering Problems, 2025

This study evaluated the integration of renewable energy sources and green hydrogen storage to support grid stability in island regions, contributing to sustainable and reliable electricity supply.



02 Integrated Techno-Economic-Environmental Assessment of a Photovoltaic, Wind Turbine, and Grid Hybrid System for 1300 VA Household Applications: A Case Study in Semarang City, Indonesia

ICHVEPS 2025, 2025

This study assessed the technical, economic, and environmental aspects of a hybrid photovoltaic–wind–grid system for household electricity, supporting the transition to cleaner and more sustainable energy use.



03 Igniting the Flame, Maximizing Energy: The Effectiveness of Nutmeg Oil as a Bioadditive in B20 Droplet Combustion

Mechanical Engineering for Society and Industry, 2025

This research investigated the use of nutmeg oil as a bioadditive in B20 fuel, showing potential for improved combustion characteristics and the utilization of local bioresources for cleaner energy production.



04 Fabrication and Testing of Epoxy Resin-Based Composites for Electrical Insulation Material Applications

Journal of Multidisciplinary Engineering Science and Technology, 2025

This study developed and tested epoxy resin-based composites for electrical insulation materials, contributing to the reliability and safety of electrical systems.



8 DECENT WORK AND ECONOMIC GROWTH

REPORT 2025

SDGS 8DECENT WORK AND ECONOMIC GROWTH

Academic Programs
Supporting Decent Work and Economic Growth

8 DECENT WORK AND ECONOMIC GROWTH

UNIMUS offers a variety of academic programs that contribute to decent work, entrepreneurship, innovation, and inclusive economic growth. These programs equip students with professional competencies and practical skills to meet the needs of the workforce and support Sustainable Development Goal 8 (Decent Work and Economic Growth).



01

Management

Develops managerial, entrepreneurial, and leadership competencies to prepare graduates for the dynamic workforce.



02

Accounting

Builds competencies in financial management, accountability, and business governance to support sustainable economic development.



03

Agribusiness

Supports the development of agricultural value chains, innovation in agro-industry, and community economic empowerment.



04

Informatics

Drives digital innovation, data-driven solutions, and technological advancements to enhance productivity and create new opportunities in the digital economy.



05

Mechanical Engineering

Contributes to industrial development through innovation in mechanical systems, energy efficiency, and production technologies.



06

Food Technology

Develops innovative and safe food products, strengthens the food industry, and creates opportunities for sustainable economic growth.

Entrepreneurship in Action:
Student Business Development at UNIMUS

8 DECENT WORK AND ECONOMIC GROWTH

UNIMUS provides various entrepreneurship initiatives to develop students' practical skills, creativity, and business competencies. These programs contribute to decent work, productive employment, and inclusive economic growth in line with SDG 8.



MAKAIRA Campus Coffee Truck

Provides hands-on entrepreneurship experience for students through a campus-based coffee truck, involving product development, business management, financial planning, and digital marketing.



UNIMUS Bakery

Supports student entrepreneurship through food production, product innovation, training, and sales. UNIMUS Bakery serves as a practical learning platform that strengthens industry-relevant skills and creates opportunities for future business development in the food sector.



Entrepreneur Festival: BMC Competition and Expo

Encourages students' entrepreneurial spirit through business model competitions and product exhibitions. The event involved student teams, showcasing diverse and innovative business ideas.

Research Highlights on SDG 8 in 2025

UNIMUS conducts research that supports decent work, innovation, and sustainable economic growth through solutions in health, food, technology, and community development. The following selected publications in 2025 demonstrate UNIMUS's contribution to SDG 8.

8 DECENT WORK AND ECONOMIC GROWTH

01



Integrative Clinical–Genomic Mapping of Virulence Biomarkers in Hypervirulent Klebsiella pneumoniae: A Foundation for Precision Medicine in Bronchopneumonia

Journal of Applied Biology & Biotechnology, 2025

Combines clinical and genomic data to identify virulence biomarkers for early detection of hypervirulent *K. pnemuoniae*, supporting improved healthcare services and reducing the economic burden of infectious diseases.

Contribution to SDG 8

Supports a healthy and productive workforce through improved diagnostic strategies, reducing healthcare costs and productivity losses due to severe infections.

02



Development of Eco-Friendly μPADs Based on Alkyl Polyglucoside for Total Cholesterol Screening Towards Degradable Diagnostic Kits

Biosensors and Bioelectronics, 2025

Introduces an environmentally friendly, low-cost diagnostic kit for cholesterol screening using biodegradable materials, enabling accessible and sustainable health screening.

Contribution to SDG 8

Promotes innovation and sustainable health technology, supporting productive workforces and new opportunities in the renewable diagnostic industry.

03



Global Research Trends in Acute Myeloid Leukemia and Acute Lymphoblastic Leukemia: A Bibliometric Analysis (1964–2024)

Heliyon, 2025

Analyzes global research trends to identify knowledge gaps and future directions in AML and ALL, providing evidence for strategic research development.

Contribution to SDG 8

Strengthens research capacity and knowledge innovation, supporting high-quality education, professional development, and a skilled workforce in the health sector.

04



SukunCare: In Vitro Antidiabetic Potential of Breadfruit (Artocarpus altilis) Peel Extract

Food Bioscience, 2025

Evaluates the antidiabetic activity of breadfruit peel extract, supporting the development of functional food products with potential for the local food industry.

Contribution to SDG 8

Supports innovation in functional food and natural product development, creating opportunities for sustainable economic growth in the food and nutraceutical sectors.

Research Highlights on SDG 8 in 2025

UNIMUS conducts research that supports decent work, innovation, and inclusive economic growth. The following selected publications in 2025 demonstrate UNIMUS's contribution to SDG 8.

8 DECENT WORK AND ECONOMIC GROWTH

01



Empowering migrant workers: the development and impact of the e-law consult application

Clio. Revista de Historia, Ciencias Humanas y Pensamiento Critico, 2025

Develops and evaluates an e-law consult application to provide accessible legal consultation for migrant workers, supporting the protection of workers' rights and fair employment opportunities.

Contribution to SDG 8

Supports decent work by improving access to legal support for migrant workers, enhancing protection of labour rights, and promoting fair and secure employment.

02



Can competitive strategy be used as a measure of sustainable development in foodservice?

BIO Web of Conferences, 2025

Analyzes how competitive strategy can serve as an indicator for sustainable development in the foodservice industry, providing insights for business resilience and long-term growth.

Contribution to SDG 8

Promotes innovation and sustainable business practices in the foodservice sector, supporting productive employment, entrepreneurship, and economic growth.

03



Performance Assessment of Tea Plantation-Based Tourism Village Management: A Case Study of Nglinggo Tourism Village, Kulon Progo, Yogyakarta

E3S Web of Conferences, 2025

Evaluates the management performance of a tea plantation-based tourism village, providing recommendations to strengthen local economic development and sustainable tourism.

Contribution to SDG 8

Contributes to inclusive and sustainable economic growth through the development of local tourism, creating employment opportunities and empowering local communities.

04



Assessing the Environmental Impacts of Banana Farming in Yogyakarta Special Region Using Life Cycle Assessment (LCA)

International Journal of Design and Nature and Ecodynamics, 2025

Evaluates the environmental impacts of banana farming using Life Cycle Assessment (LCA), providing insights for more efficient and sustainable agricultural practices.

Contribution to SDG 8 (indirect)

Supports sustainable and efficient agricultural production, which can contribute to long-term economic growth and resilience in the agricultural sector, with potential for job creation.



9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

REPORT 2025

SDGS 9INDUSTRY, INNOVATION, AND INFRASTRUCTURE

Academic Programs Supporting SDG 9

UNIMUS offers academic programs that contribute to industry, innovation, and infrastructure through engineering, technology, and digital development. These programs provide knowledge and skills that support research, innovation, and sustainable industrial development.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

01



Electrical Engineering

Develops expertise in electrical systems, electronic technology, and innovative technical solutions to support industrial development and smart infrastructure.

02



Mechanical Engineering

Focuses on mechanical engineering, manufacturing technology, and industrial process development to support innovation and sustainable industry.

03



Civil Engineering

Contributes to infrastructure development through research on construction materials, structural design, and sustainable built environment.

04



Architecture

Supports the design of functional, resilient, and sustainable built environments that enhance the quality of infrastructure and urban spaces.

05



Informatics

Develops digital technologies, software solutions, and information systems to support innovation, industry transformation, and digital infrastructure.

06



Food Technology

Supports food product innovation, processing technology, and improved production processes to enhance industrial capacity and sustainable food systems.

Industry, Innovation and Partnerships at UNIMUS

UNIMUS strengthens industry, innovation, and infrastructure through strategic partnerships with national and international institutions and industry, supporting research, technology development, and talent preparation for a sustainable future.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE



Calowry Inc., Canada

Visit and initiation of international collaboration on research and development of meso fiber-based products for the food industry.



40 DUDI Partners through the CURVE Concept

Establishment of 40 industry partners to strengthen university-industry collaboration, support innovation, and develop a more adaptive and sustainable education ecosystem.



PT Dedomena (Oracle Partner)

Informatics partnership to develop digital technology, strengthen IT talent, and support innovation in line with industry needs.



Bakrie Center Foundation

Partnership with Bakrie Center Foundation to support education, research, and innovation in the field of technology and human resource development.



Institut Teknologi dan Bisnis AAS

Collaboration in education, research, and capacity building to support innovation and the development of a competitive workforce for industry.

Research Highlights at UNIMUS (2025)

Research contributions to industry, innovation, sustainable technology and evidence-based development.

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

Build resilient infrastructure, promote inclusive and sustainable industrialization, and foster innovation.

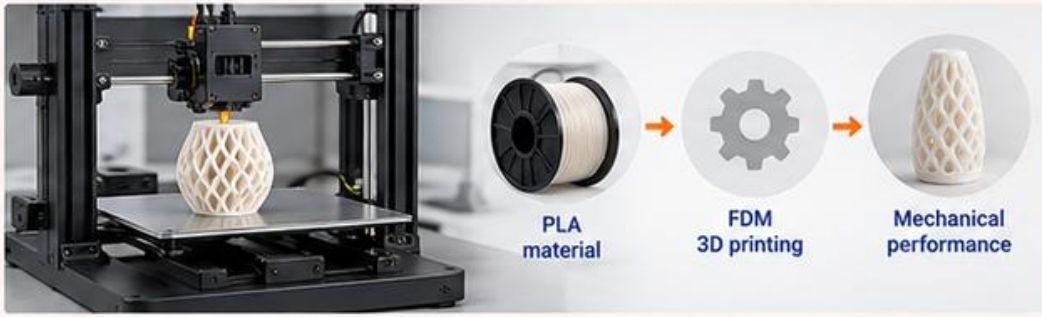
01 Assessing the Environmental Impacts of Banana Farming in Yogyakarta Special Region Using Life Cycle Assessment (LCA)

Life Cycle Assessment identifies environmental impacts across banana cultivation and distribution, informing more sustainable agricultural practices.



02 A Review of Factors Affecting the Mechanical Performance of PLA in FDM 3D Printing

Reviews material properties and printing parameters that affect the mechanical performance of 3D-printed PLA products.



03 A Data-Driven Comparison of Linear Mixed Model and Mixed Effects Regression Tree Approaches for Dairy Productivity Analysis

Compares statistical modelling approaches for analysing and predicting dairy productivity using farm survey data.



04 Fabrication and Testing of Epoxy Resin-Based Composites for Electrical Insulation Material Applications

Tests epoxy composites reinforced with rice husk ash and silane for electrical insulation applications.



SDG 9 relevance varies by study; the dairy productivity paper is a supporting data-innovation contribution, while advanced materials and 3D printing are more directly linked to technological innovation. The banana farming LCA is primarily an environmental sustainability contribution.



10 REDUCED INEQUALITIES

REPORT 2025

SDGS 10: REDUCED INEQUALITIES

Policy Commitment to Disability Inclusion

10 REDUCED INEQUALITIES

Disability Policy



UNIVERSITAS MUHAMMADIYAH SEMARANG
SURAT KEPUTUSAN REKTOR
Nomor: 610/UNIMUS/SK.PP/2024

TENTANG
KEBIJAKAN DISABILITAS
DI LINGKUNGAN UNIVERSITAS MUHAMMADIYAH SEMARANG

REKTOR UNIVERSITAS MUHAMMADIYAH SEMARANG,

Menimbang : a. bahwa setiap warga negara berhak memperoleh pendidikan yang layak dan tanpa diskriminasi;
b. bahwa penyandang disabilitas memiliki hak yang sama untuk memperoleh akses pendidikan tinggi yang bermutu;
c. bahwa Universitas Muhammadiyah Semarang berkomitmen mewujudkan kampus yang inklusif dan ramah disabilitas;
d. bahwa untuk menjamin pemenuhan hak penyandang disabilitas diperlukan kebijakan khusus yang terarah dan berkelanjutan;
e. bahwa berdasarkan pertimbangan sebagaimana dimaksud dalam huruf a, b, c, dan d, perlu menetapkan Surat Keputusan Rektor tentang Kebijakan Disabilitas di lingkungan Universitas Muhammadiyah Semarang.

Mengingat : 1. Undang-Undang Nomor 12 Tahun 2012 tentang Pendidikan Tinggi;
2. Undang-Undang Nomor 8 Tahun 2016 tentang Penyandang Disabilitas;
3. Undang-Undang Nomor 20 Tahun 2003, tentang Sistem Pendidikan Nasional;
4. Keputusan Mendikbud Nomor: 139/D/O/1999, tentang Pendirian Universitas Muhammadiyah di Semarang;
5. Keputusan PP Muhammadiyah Nomor: 433/KEP/I.0/D/2023 tentang Pengangkatan Rektor Universitas Muhammadiyah Semarang Masa Jabatan 2023-2027

MEMUTUSKAN:

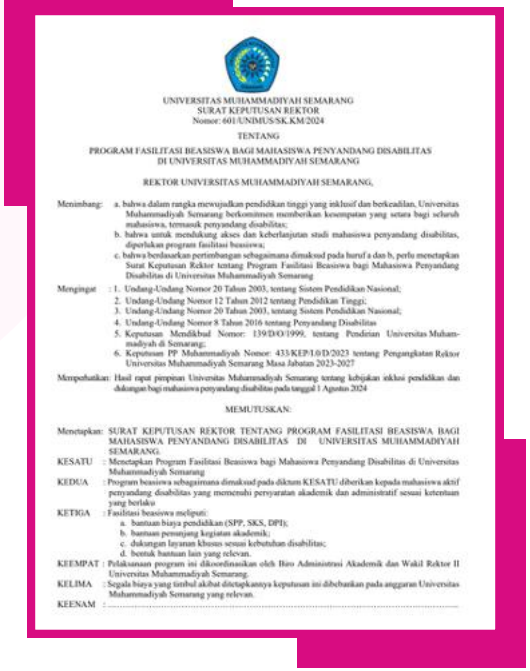
Menetapkan : SURAT KEPUTUSAN REKTOR UNIVERSITAS MUHAMMADIYAH SEMARANG TENTANG KEBIJAKAN DISABILITAS DI LINGKUNGAN UNIVERSITAS MUHAMMADIYAH SEMARANG.

KEBIJAKAN DISABILITAS
DI LINGKUNGAN UNIVERSITAS MUHAMMADIYAH SEMARANG.

Pasal 1

Definisi
1. Penyandang Disabilitas adalah setiap orang yang mengalami keterbatasan fisik, intelektual, mental, dan/atau sensorik dalam jangka waktu lama.
2. Aksesibilitas adalah kemudahan yang disediakan untuk penyandang disabilitas guna mewujudkan kesamaan kesempatan.
3. Layanan Disabilitas adalah bentuk dukungan yang diberikan untuk memenuhi kebutuhan khusus penyandang disabilitas.

Scholarship Policy



UNIVERSITAS MUHAMMADIYAH SEMARANG
SURAT KEPUTUSAN REKTOR
Nomor: 601/UNIMUS/SK.KM/2024

TENTANG
PROGRAM FASILITASI BEASISWA BAGI MAHASISWA PENYANDANG DISABILITAS
DI UNIVERSITAS MUHAMMADIYAH SEMARANG

REKTOR UNIVERSITAS MUHAMMADIYAH SEMARANG,

Menimbang: a. bahwa dalam rangka mewujudkan pendidikan tinggi yang inklusif dan berkeadilan, Universitas Muhammadiyah Semarang berkomitmen memberikan kesempatan yang setara bagi seluruh mahasiswa, termasuk penyandang disabilitas;
b. bahwa untuk mendukung akses dan keberlanjutan studi mahasiswa penyandang disabilitas, diperlukan program fasilitasi beasiswa;
c. bahwa berdasarkan pertimbangan sebagaimana dimaksud pada huruf a dan b, perlu menetapkan Surat Keputusan Rektor tentang Program Fasilitasi Beasiswa bagi Mahasiswa Penyandang Disabilitas di Universitas Muhammadiyah Semarang

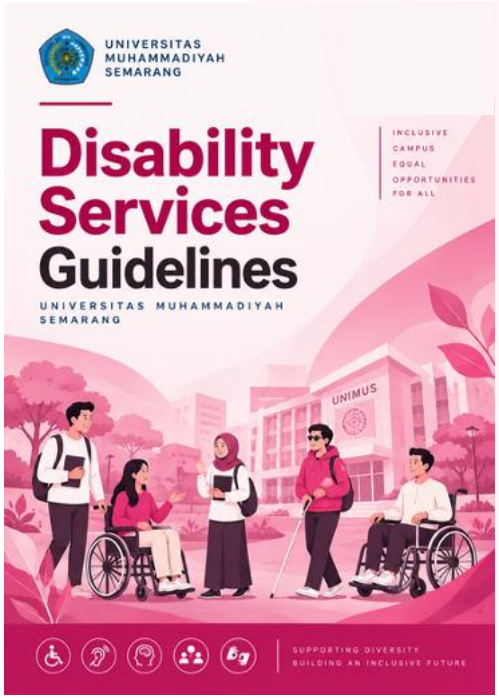
Mengingat : 1. Undang-Undang Nomor 20 Tahun 2003, tentang Sistem Pendidikan Nasional;
2. Undang-Undang Nomor 12 Tahun 2012 tentang Pendidikan Tinggi;
3. Undang-Undang Nomor 20 Tahun 2003, tentang Sistem Pendidikan Nasional;
4. Undang-Undang Nomor 8 Tahun 2016 tentang Penyandang Disabilitas
5. Keputusan Mendikbud Nomor: 139/D/O/1999, tentang Pendirian Universitas Muhammadiyah di Semarang;
6. Keputusan PP Muhammadiyah Nomor: 433/KEP/I.0/D/2023 tentang Pengangkatan Rektor Universitas Muhammadiyah Semarang Masa Jabatan 2023-2027

Memperhatikan: Hasil rapat pimpinan Universitas Muhammadiyah Semarang tentang kebijakan inklusi pendidikan dan dukungan bagi mahasiswa penyandang disabilitas pada tanggal 1 Agustus 2024

MEMUTUSKAN:

Menetapkan: SURAT KEPUTUSAN REKTOR TENTANG PROGRAM FASILITASI BEASISWA BAGI MAHASISWA PENYANDANG DISABILITAS DI UNIVERSITAS MUHAMMADIYAH SEMARANG.
KESATU : Menetapkan Program Fasilitasi Beasiswa bagi Mahasiswa Penyandang Disabilitas di Universitas Muhammadiyah Semarang
KEDUA : Program beasiswa sebagaimana dimaksud pada diktum KESATU diberikan kepada mahasiswa aktif penyandang disabilitas yang memenuhi persyaratan akademik dan administratif sesuai ketentuan yang berlaku
KETIGA : Fasilitasi beasiswa meliputi:
a. bantuan biaya pendidikan (SPP, SKS, DPI);
b. bantuan pemenjang kegiatan akademik;
c. dukungan layanan khusus sesuai kebutuhan disabilitas;
d. bentuk bantuan lain yang relevan.
KEEMPAT : Pelaksanaan program ini dikoordinasikan oleh Biro Administrasi Akademik dan Wakil Rektor II Universitas Muhammadiyah Semarang.
KELIMA : Segala biaya yang timbul akibat ditetapkannya keputusan ini dibebankan pada anggaran Universitas Muhammadiyah Semarang yang relevan.
KEENAM :

Disability Services Guideliness



Universitas Muhammadiyah Semarang (UNIMUS) demonstrates its commitment to reducing inequalities through institutional policies that support disability inclusion and access to higher education. The university's disability policy and service guidelines provide a framework for promoting an inclusive, accessible, and non-discriminatory learning environment. In addition, its scholarship policy supports efforts to expand educational opportunities and access to financial assistance. Together, these policy frameworks reflect UNIMUS's commitment to fostering equitable opportunities for students from diverse backgrounds, in alignment with Sustainable Development Goal 10: Reduced Inequalities.

Disability Support Facilities at UNIMUS

10 REDUCED INEQUALITIES

Accessible spaces for a more inclusive and barrier-free campus environment.



01 | **Accessible Entrance**

Barrier-free entrance design to facilitate safe and independent access for all.



02 | **Designated Accessible Parking**

Reserved parking area for people with disabilities to ensure easier and safer access to campus facilities.



03 | **Accessible Toilet Facilities**

Toilet facilities equipped with handrails and accessible design to support the needs of people with disabilities.



04 | **Disability-Accessible Toilet Signage**

Clear and visible signage to identify accessible toilet facilities.

These disability support facilities reflect UNIMUS's commitment to creating an inclusive, accessible, and equitable learning environment for all students.

Research Highlights 2025
Supporting SDG 10

Selected UNIMUS publications in 2025 that contribute to reducing inequalities and promoting inclusive and equitable opportunities.

10 REDUCED INEQUALITIES

Reduce inequality within and among countries

01 Empowering migrant workers: the development and impact of the e-law consult application

2025 | Journal of Open Innovation: Technology, Market, and Complexity


Clío
Revista de Historia, Ciencias Humanas y Pensamiento Crítico
Sección: Artículo científico | 2025, julio-diciembre, año 5, No. 10, 400-421
Empowering migrant workers: the development and impact of the e-law consult application
Dian Ratu Ayu Uswatun Khasanah
Correo: dian.khasanah@ecampus.ut.ac.id
Orcid: https://orcid.org/0000-0001-6735-7301

Improves access to legal consultation for migrant workers, supporting the protection of vulnerable groups and reducing social and legal inequalities.

02 The perceptions of husbands regarding early marriage in community settings in Bengkulu, Indonesia: a case-control study

2025 | BMC Public Health


PHI PUBLIC HEALTH OF INDONESIA
The Perceptions of Husbands Regarding Early Marriage in Community Settings in Bengkulu, Indonesia: A Case-Control Study

Addresses early marriage, a form of social vulnerability, and highlights gender and social inequalities that limit equal opportunities in society.

03 Hopes, fears, and expectations of Indonesian young couples in the pre-marital process: a socio-ecological perspective

2025 | BMC Psychology


Research Paper
Hopes, Fears, and Expectations of Indonesian Young Couples in the Pre-marital Process: A Socio-ecological Perspective

Explores the perspectives of young couples in the pre-marital process, providing insights into social factors that influence equality and opportunity in family and community contexts.

04 Assessing bilateral trade performance of ASEAN fresh fish commodities

2025 | Journal of Aquatic Food Product Technology


Assessing Bilateral Trade Performance of ASEAN Fres
Commodities
View PDF | Full text | Export | Save to list
Document | Impact | Cited by (1) | References (39) | Similar documents

Provides evidence on trade performance to support more equitable economic opportunities and reduce regional disparities within ASEAN.



11 SUSTAINABLE CITIES AND COMMUNITIES

REPORT 2025

SDGS 11: SUSTAINABLE CITIES AND COMMUNITIES

Sustainable Campus & Green Infrastructure

Supporting SDG 11: Sustainable Cities and Communities

11 SUSTAINABLE CITIES AND COMMUNITIES

Make cities and human settlements inclusive, safe, resilient and sustainable.



Indicator	Progress & Contribution to SDG 11
Green Open Space Management	191,656.08 m^2 of open/non-building area (90.05% of campus area).
Integration of Infrastructure with Nature	Integration of green landscapes and open areas with academic, research, healthcare, and residential facilities.
Sustainable Campus Planning & Facilities	15 buildings with a total floor area of 105,442 m^2.
Efficient Land Use	Building footprint of 21,177.92 m^2 (9.95% of campus area).
Green Campus & Environmental Quality	Open and green areas, pedestrian routes, internal circulation, and plazas to support a livable and inclusive campus.



01 Accessible Green and Open Spaces

Well-maintained green areas and pedestrian pathways for a healthy, inclusive, and active campus life.



02 Sustainable Campus Infrastructure

Integrated campus with 15 buildings and extensive green landscapes.



03 Safe and Inclusive Mobility

Pedestrian routes and barrier-free design for safe, inclusive, and accessible mobility.



04 Environmental Management

Waste segregation, green landscaping, and proper environmental management for a cleaner and more sustainable campus environment.

Waste Management for a Sustainable Campus

Supporting SDG 11: Sustainable Cities and Communities

11 SUSTAINABLE CITIES AND COMMUNITIES

Make cities and human settlements inclusive, safe, resilient and sustainable.

01 Waste Segregation and Responsible Waste Management

UNIMUS implements waste segregation through color-coded bins to ensure proper handling, recovery, and further processing of campus waste.



02 Organic Waste Management and Composting

UNIMUS promotes sustainable organic waste management through an integrated composting system to produce high-quality organic fertilizer for campus green areas.



03 Integrated Waste Management System

UNIMUS implements an integrated waste management system based on the principles of Reduce, Reuse, and Recycle (3R), including collaboration with licensed third-party waste management providers.



Through responsible waste management and a circular economy approach, UNIMUS contributes to a cleaner, healthier, and more sustainable campus environment, in support of **SDG 11: Sustainable Cities and Communities.**

Pedestrian-Friendly Campus Infrastructure

Supporting SDG 11: Sustainable Cities and Communities

11 SUSTAINABLE CITIES AND COMMUNITIES

Make cities and human settlements inclusive, safe, resilient and sustainable.

01 Shaded Pedestrian Pathway

A comfortable and green pedestriant environment that encourages walking and supports a healthy, active lifestyle.



02 Accessible Building Entrance

Ramp access to support independent movement for wheelchair users.



03 Accessible Parking

Special parking area for people with disabilities in a strategic location close to the main building.



04 Campus Pedestrian Routes

Pedestrian routes and ramp locations across the UNIMUS campus to ensure safe and accessible mobility for all.



Alignment with SDG 11

- Provide safe, accessible, and inclusive public spaces.
- Support the mobility of people with disabilities.
- Create a greener, healthier, and more livable campus environment.
- Build inclusive and sustainable campus communities.

UNIVERSITAS MUHAMMADIYAH SEMARANG

Research Supporting

SDG 11: Sustainable Cities and Communities

Evidence-based contributions to healthier, safer, and more sustainable communities

11 SUSTAINABLE CITIES AND COMMUNITIES

Make cities and human settlements inclusive, safe, resilient and sustainable.

01 Barriers to Exclusive Breastfeeding: A Phenomenological Study of Mothers and Healthcare Professionals

Journal of Education and Health Promotion, 2025



Key Findings

Identified multifactorial barriers to exclusive breastfeeding, including personal, social, workplace, and healthcare system-related factors, from the perspectives of mothers and healthcare professionals.

Relevance to SDG 11

Highlights the need for supportive and inclusive community and urban environments, such as family-friendly public spaces, workplaces, and healthcare facilities, to enable healthy living for mothers and children in cities.

02 Development and Application of Hydrolytic Bacterial Microcapsules as Bioremediation Agent of Hospital Wastewater: A Case Report in Semarang

International Journal of Environmental Science and Development, 2025



Key Findings

Developed bacterial microcapsules using alginate for bioremediation of hospital wastewater. The application resulted in a significant reduction of key pollutants, including ammonium, BOD, COD, and phosphate.

Relevance to SDG 11

Contributes to a cleaner and healthier urban environment through improved management of hospital wastewater, supporting safe, resilient, and sustainable cities.

These research outcomes demonstrate UNIMUS's contribution to building healthier, safer, and more sustainable communities, in support of **SDG 11: Sustainable Cities and Communities**.



12 RESPONSIBLE CONSUMPTION AND PRODUCTION

REPORT 2025

SDGS 12RESPONSIBLE CONSUMPTION AND PRODUCTION

Policy Commitment to Responsible Consumption and Production at UNIMUS



KEPUTUSAN REKTOR
UNIVERSITAS MUHAMMADIYAH SEMARANG
Nomor : 603/UNIMUS/SK.PG/2024
tentang
KONSERVASI ENERGI
DI LINGKUNGAN UNIVERSITAS MUHAMMADIYAH SEMARANG

DENGAN RAHMAT ALLAH SUBHANAHU WA TA'ALA
REKTOR UNIVERSITAS MUHAMMADIYAH SEMARANG

Menimbang
Mengingat
MEMUTUSKAN:
Menetapkan : KEPUTUSAN REKTOR UNIVERSITAS MUHAMMADIYAH SEMARANG TENTANG KONSERVASI ENERGI DI LINGKUNGAN UNIVERSITAS MUHAMMADIYAH SEMARANG.
KESATU :
KEDUA :
Ditetapkan di : Semarang
Pada tanggal : 24 Shafar 1446 H / 29 Agustus 2024 M
Rektor,
Prof. Dr. Masrukhi, M.Pd.
Salinan disampaikan kepada Yth.:
1. Badan Pembina Harian
2. Para Dekan dan Ka Lembaga
3. Para Ka UPT dan Ka Biro



KEPUTUSAN REKTOR
UNIVERSITAS MUHAMMADIYAH SEMARANG
Nomor : 610/UNIMUS/SK.PG/2024
tentang
PEMBATASAN KEMASAN MAKANAN DAN MINUMAN
YANG MENGADUNG BAHAN BERBAHAYA DAN BERACUN (B3)
DI LINGKUNGAN UNIVERSITAS MUHAMMADIYAH SEMARANG

DENGAN RAHMAT ALLAH SUBHANAHU WA TA'ALA
REKTOR UNIVERSITAS MUHAMMADIYAH SEMARANG

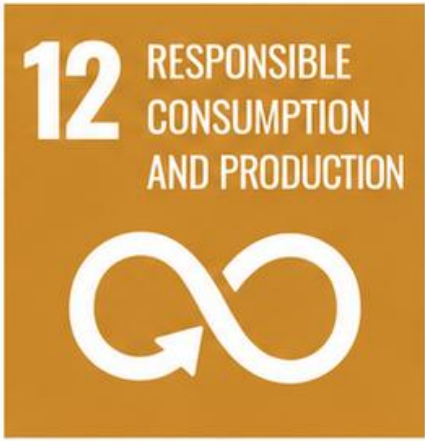
Menimbang
Mengingat
MEMUTUSKAN:
Menetapkan : KEPUTUSAN REKTOR UNIVERSITAS MUHAMMADIYAH SEMARANG TENTANG PEMBATASAN KEMASAN MAKANAN DAN MINUMAN YANG MENGADUNG BAHAN BERBAHAYA DAN BERACUN (B3) DI LINGKUNGAN UNIVERSITAS MUHAMMADIYAH SEMARANG.
KESATU :
KEDUA :
KETIGA :
KEEMPAT :
Ditetapkan di : Semarang
Pada tanggal : 24 Shafar 1446 H / 29 Agustus 2024 M
Rektor,
Prof. Dr. Masrukhi, M.Pd.
Salinan disampaikan kepada Yth.:
1. Badan Pembina Harian
2. Para Pejabat Struktural Unit



KEPUTUSAN REKTOR
UNIVERSITAS MUHAMMADIYAH SEMARANG
Nomor : 225/UNIMUS/SK.PG/2024
tentang
KEBIJAKAN GREEN CAMPUS
DI LINGKUNGAN UNIVERSITAS MUHAMMADIYAH SEMARANG

REKTOR UNIVERSITAS MUHAMMADIYAH SEMARANG

Menimbang
Mengingat
MEMUTUSKAN:
Menetapkan : KEPUTUSAN REKTOR UNIVERSITAS MUHAMMADIYAH SEMARANG TENTANG KEBIJAKAN GREEN CAMPUS DI LINGKUNGAN UNIVERSITAS MUHAMMADIYAH SEMARANG
PERTAMA :
KEDUA :
1. Pengelolaan energi yang efisien dan berkelanjutan
2. Pengurangan penggunaan plastik sekali pakai dan kertas (zero waste policy).
3. Penggunaan transportasi ramah lingkungan di area kampus.
4. Penghijauan dan pengelolaan ruang terbuka hijau
5. Pengelolaan limbah padat dan cair secara bertanggung jawab
6. Penerapan sistem digitalisasi administrasi untuk mengurangi konsumsi sumber daya.
7. Edukasi dan kampanye berkelanjutan tentang perilaku ramah lingkungan di lingkungan universitas.
KETIGA :
KEEMPAT :
Ditetapkan di : Semarang
Pada tanggal : 17 Jumadil Awal 1446 H / 19 November 2024 M
Rektor,
Prof. Dr. Masrukhi, M.Pd.
Salinan disampaikan kepada Yth.:
1. Para Wakil Rektor
2. Para Dekan dan Ka Lembaga
3. Para Ka UPT dan Ka Biro



Universitas Muhammadiyah Semarang (UNIMUS) demonstrates its commitment to Sustainable Development Goal 12 (Responsible Consumption and Production) through institutional policies that promote sustainable resource use and responsible waste management. The Green Campus Policy encourages reducing single-use plastics and paper, improving waste management, and adopting digital administrative systems. The policy on restricting food and beverage packaging containing hazardous substances promotes environmentally friendly packaging and recycling, while the Paperless Policy supports reducing paper consumption through digital administration, academic activities, and document archiving. Together, these policies provide an institutional framework for fostering more sustainable consumption practices and reducing environmental impacts across the university.

Waste Management for a Sustainable Campus

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

01 Waste Segregation and Responsible Waste Management

UNIMUS implements waste segregation practices through color-coded bins to ensure proper handling, recovery, and further processing of campus waste.



Color-coded waste bins are placed across the campus to facilitate waste segregation at the source.

02 Organic Waste Management and Composting

UNIMUS promotes sustainable organic waste management through an integrated composting system using Black Soldier Fly (BSF) technology to produce high-quality organic fertilizer.



Processed organic waste using Black Soldier Fly (BSF) technology.



Final compost product used as organic fertilizer for campus green areas.





Integrated composting facility for organic waste from campus activities

03 Integrated Waste Management System

UNIMUS implements an integrated waste management system based on the principles of Reduce, Reuse, and Recycle (3R), including reduction of plastic and paper consumption, reuse of materials, recycling of inorganic waste, organic waste treatment through composting and eco-enzyme production, and management of hazardous waste in a safe and responsible manner.



Creative reuse of recyclable materials for educational and awareness activities.



Student involvement in organic waste processing.



Mechanical processing of inorganic waste for recycling.

UNIMUS
UNIVERSITAS MUHAMMADIYAH SEMARANG

INTEGRATED WASTE MANAGEMENT PROGRAM

ENERGY SAVING, A GREENER EARTH, A MORE BENEFICIAL UNIMUS

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

ENVIRONMENTAL BENEFIT

Reduce the use of natural resources and conserve the environment.

ECONOMIC BENEFIT

Cost savings from renewable energy and income from recyclables.



WASTE SOURCES AT UNIMUS
(e.g., classrooms, academic buildings, laboratories, dormitories)

WASTE COLLECTION AND SEGREGATION
(e.g., organic, inorganic, hazardous waste)



ORGANIC WASTE MANAGEMENT
(e.g., food waste, yard waste)

INORGANIC WASTE PROCESSING
(e.g., plastic, paper, metal)



BIOGAS DIGESTER

BIOGAS

LIQUID AND SOLID ORGANIC FERTILIZER



RECYCLING CENTER

INDUSTRIAL RAW MATERIALS

HANDICRAFT PRODUCTS

INCINERATION WITH ENERGY RECOVERY
(e.g., non-recyclable waste)



ELECTRICITY AND HEAT FOR CAMPUS

FUEL FOR CAMPUS KITCHEN



CAMPUS AGRICULTURE AND GREEN AREAS



UTILIZATION AT UNIMUS CAMPUS

ELECTRICITY AND HEAT



WASTE-TO-ENERGY PLANT (PLTSa)

A SAFER UNIMUS

Modern facilities, positive reputation, innovation support, and research opportunities.

EDUCATION AND RESEARCH

Students learn about new environmentally friendly technologies and support innovation research.

TOWARDS A SUSTAINABLE, GREEN, AND INDEPENDENT CAMPUS

UNIMUS
UNIVERSITAS MUHAMMADIYAH SEMARANG

Community Engagement 2025

Actions for Responsible Consumption and Production

UNIMUS in Collaboration with Communities for a Sustainable Environment

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Our Commitment

UNIMUS is committed to promoting responsible consumption and production through community-based programs that encourage efficient resource use, waste reduction, and the adoption of circular practices. By engaging students, lecturers, and local communities, UNIMUS develops practical solutions for waste management and strengthens environmental awareness to build a cleaner and more sustainable environment.

Empowering Communities for Sustainable Practices



1 Plastic Waste to Eco-Paving

Kedungdowo, Boyolali 2025

Students of the UNIMUS community service program (KKN) introduced and applied the processing of plastic waste into paving blocks. The activity involved local residents and provided hands-on training on sorting, processing, and utilizing non-organic waste as construction material.

Contribution to SDG 12

Supports the reduction of plastic waste through material recovery and reuse, and promotes a circular economy at the community level.



2 Climate Village Program and Digital Waste Bank

Purwosari, Demak 2025

The PPK Ormawa IMM Asy-Syifa UNIMUS launched the Climate Village Program in Purwosari Village, integrating environmental education, a digital waste bank through the PUSAKA application, household waste recycling, and community empowerment.

Contribution to SDG 12

Encourages responsible waste management, improves resource utilization through a digital waste bank, and fosters sustainable consumption and production practices in the community.



3 Capacity Building on Waste Management

MLH PWM Jawa Tengah, Pati 2025

IMM Asy-Syifa UNIMUS conducted a learning visit to the MLH PWM Jawa Tengah to enhance knowledge and skills in waste management, including organic waste processing and composting technology with minimal water use.

Contribution to SDG 12

Strengthens community and student capacity in sustainable waste management and supports the application of environmentally friendly processing methods.



4 Community Engagement in Waste Utilization

Kedungdowo, Boyolali 2025

UNIMUS students worked together with local residents to increase awareness on waste sorting and to utilize non-organic waste, including plastic, into useful products such as paving blocks. The program received positive responses from the community.

Contribution to SDG 12

Promotes responsible consumption through waste sorting and reuse, reduces environmental pollution, and supports local initiatives for sustainable waste utilization.

UNIMUS
UNIVERSITAS MUHAMMADIYAH SEMARANG

Research Highlights 2025

Advancing Responsible Consumption and Production

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

Our Commitment

UNIMUS is committed to advancing responsible consumption and production through impactful research that promotes efficient resource use, sustainable production systems, and environmentally sound waste management. By generating evidence-based solutions, UNIMUS contributes to minimizing environmental impacts, optimizing resource utilization, and supporting the transition towards more sustainable and circular practices in line with the principles of SDG 12.



1 Assessing the Environmental Impacts of Banana Farming in Yogyakarta Special Region Using Life Cycle Assessment (LCA)

International Journal of Design and Nature and Ecodynamics (2025)
DOI: 10.18280/ijdne.200117

Contribution to SDG 12

This study applies Life Cycle Assessment (LCA) to evaluate the environmental impacts of banana production, providing scientific evidence to support more efficient resource use, reduced environmental burden, and the development of more sustainable agricultural practices.



2 Strategic Decision-Making: Linking Corporate Choices, Social Responsibility, and Environmental Accounting in Waste Management

Social Sciences and Humanities Open (2025)
DOI: 10.1016/j.ssaho.2025.101404

Contribution to SDG 12

This research explores the relationship between corporate decision-making, social responsibility, and environmental accounting in waste management, highlighting how organizations can integrate environmental considerations into strategic choices to achieve more responsible and efficient resource management.



3 Performance Assessment of Tea Plantation-Based Tourism Village Management: A Case Study of Nglinggo Tourism Village, Kulon Progo, Yogyakarta

E3S Web of Conferences (2025)
DOI: 10.1051/e3sconf/202566501043

Contribution to SDG 12

This study evaluates the management of a tea plantation-based tourism village, providing insights into sustainable tourism practices that can optimize local resource use, minimize environmental impacts, and support more responsible and sustainable consumption and production in the tourism sector.



13 CLIMATE ACTION

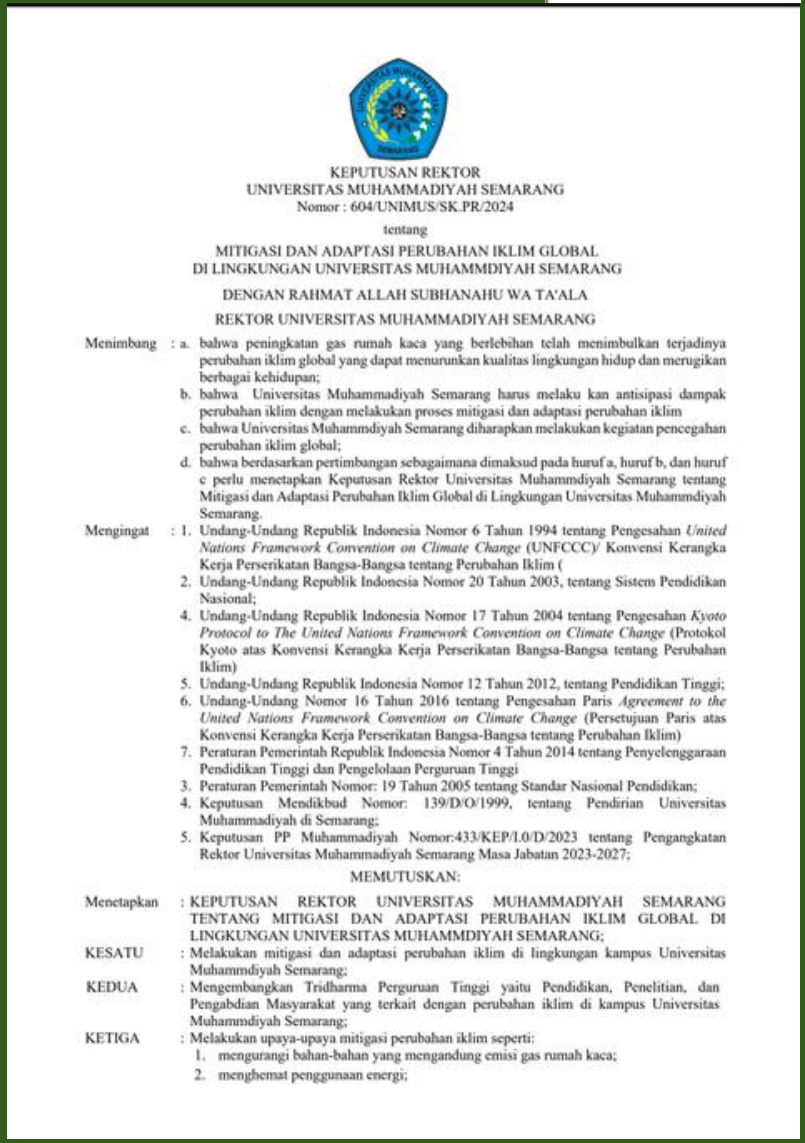
REPORT 2025

SDGS 13: CLIMATE ACTION

Institutional Policy Commitment to Climate Action

13 CLIMATE ACTION

Universitas Muhammadiyah Semarang (UNIMUS) demonstrates its institutional commitment to climate action through Rector's Decree No. 604/UNIMUS/SK.PR/2024 on Global Climate Change Mitigation and Adaptation. The policy integrates climate-related initiatives into the university's education, research, and community engagement activities. It promotes greenhouse gas emission reduction, energy conservation, the use of renewable energy, responsible waste management, efficient transportation, greening initiatives, and biodiversity conservation. Climate adaptation measures include tree planting, expanding green spaces, rainwater infiltration wells and biopores, water conservation, and health protection. Through this policy framework, UNIMUS seeks to strengthen climate change mitigation and adaptation across its campus and academic community.



KEPUTUSAN REKTOR
UNIVERSITAS MUHAMMADIYAH SEMARANG
Nomor : 604/UNIMUS/SK.PR/2024

tentang

MITIGASI DAN ADAPTASI PERUBAHAN IKLIM GLOBAL
DI LINGKUNGAN UNIVERSITAS MUHAMMDIYAH SEMARANG

DENGAN RAHMAT ALLAH SUBHANAHU WA TA'ALA

REKTOR UNIVERSITAS MUHAMMADIYAH SEMARANG

Menimbang : a. bahwa peningkatan gas rumah kaca yang berlebihan telah menimbulkan terjadinya perubahan iklim global yang dapat menurunkan kualitas lingkungan hidup dan merugikan berbagai kehidupan;
b. bahwa Universitas Muhammadiyah Semarang harus melaku kan antisipasi dampak perubahan iklim dengan melakukan proses mitigasi dan adaptasi perubahan iklim
c. bahwa Universitas Muhammdiyah Semarang diharapkan melakukan kegiatan pencegahan perubahan iklim global;
d. bahwa berdasarkan pertimbangan sebagaimana dimaksud pada huruf a, huruf b, dan huruf c perlu menetapkan Keputusan Rektor Universitas Muhammdiyah Semarang tentang Mitigasi dan Adaptasi Perubahan Iklim Global di Lingkungan Universitas Muhammdiyah Semarang.

Mengingat : 1. Undang-Undang Republik Indonesia Nomor 6 Tahun 1994 tentang Pengesahan *United Nations Framework Convention on Climate Change* (UNFCCC)/ Konvensi Kerangka Kerja Perserikatan Bangsa-Bangsa tentang Perubahan Iklim (
2. Undang-Undang Republik Indonesia Nomor 20 Tahun 2003, tentang Sistem Pendidikan Nasional;
4. Undang-Undang Republik Indonesia Nomor 17 Tahun 2004 tentang Pengesahan *Kyoto Protocol to The United Nations Framework Convention on Climate Change* (Protokol Kyoto atas Konvensi Kerangka Kerja Perserikatan Bangsa-Bangsa tentang Perubahan Iklim)
5. Undang-Undang Republik Indonesia Nomor 12 Tahun 2012, tentang Pendidikan Tinggi;
6. Undang-Undang Nomor 16 Tahun 2016 tentang Pengesahan Paris *Agreement to the United Nations Framework Convention on Climate Change* (Persetujuan Paris atas Konvensi Kerangka Kerja Perserikatan Bangsa-Bangsa tentang Perubahan Iklim)
7. Peraturan Pemerintah Republik Indonesia Nomor 4 Tahun 2014 tentang Penyelenggaraan Pendidikan Tinggi dan Pengelolaan Perguruan Tinggi
3. Peraturan Pemerintah Nomor: 19 Tahun 2005 tentang Standar Nasional Pendidikan;
4. Keputusan Mendikbud Nomor: 139/D/O/1999, tentang Pendirian Universitas Muhammadiyah di Semarang;
5. Keputusan PP Muhammadiyah Nomor:433/KEP/I.0/D/2023 tentang Pengangkatan Rektor Universitas Muhammadiyah Semarang Masa Jabatan 2023-2027;

MEMUTUSKAN:

Menetapkan : KEPUTUSAN REKTOR UNIVERSITAS MUHAMMADIYAH SEMARANG TENTANG MITIGASI DAN ADAPTASI PERUBAHAN IKLIM GLOBAL DI LINGKUNGAN UNIVERSITAS MUHAMMDIYAH SEMARANG;

KESATU : Melakukan mitigasi dan adaptasi perubahan iklim di lingkungan kampus Universitas Muhammdiyah Semarang;

KEDUA : Mengembangkan Tridharma Perguruan Tinggi yaitu Pendidikan, Penelitian, dan Pengabdian Masyarakat yang terkait dengan perubahan iklim di kampus Universitas Muhammdiyah Semarang;

KETIGA : Melakukan upaya-upaya mitigasi perubahan iklim seperti:
1. mengurangi bahan-bahan yang mengandung emisi gas rumah kaca;
2. menghemat penggunaan energi;

UNIMUS
UNIVERSITAS MUHAMMADIYAH SEMARANG

Academic Programs
Contributing to Climate Action (SDG 13)

13 CLIMATE ACTION

UNIMUS promotes interdisciplinary climate action by connecting education, research, and community engagement across various academic fields. Through relevant study programs, UNIMUS contributes to climate change mitigation and adaptation, ecosystem conservation, and the development of more sustainable practices.



1 S1 Kesehatan Masyarakat

Contributes to climate action through community-based mangrove planting, environmental education, and public health initiatives that strengthen community resilience to climate-related risks, particularly in coastal areas.



2 S1 Agribisnis

Contributes to climate action through forest conservation programs such as the Educational Waqf Forest, plant protection practices, and sustainable agricultural initiatives that enhance ecosystem resilience and promote environmentally friendly land use.



3 S1 Ilmu Kelautan

Contributes to climate action through coastal and marine ecosystem conservation, including mangrove restoration and biodiversity protection, which support climate change adaptation and enhance the resilience of coastal environments.



4 S1 Rekayasa Elektro

Contributes to climate action through research and innovation in renewable energy systems, including photovoltaic and wind turbine hybrid systems, which support emission reduction, energy efficiency, and the transition to a low-carbon society.

ENERGY, CARBON AND CLIMATE CHANGE

I. UNIMUS CAMPUS PROFILE SUMMARY

No.	Campus Profile and Land Parameters	Value	Unit	Data Source / Reference
1	Total Academic Community (Students + Staff)	**14,458.0**	People	UNIMUS Demographic & Land Data
2	Total Campus Area	**10.6**	Hectares (Ha)	UNIMUS Demographic & Land Data
3	Green Open Space (GOS) / Vegetation Area	**2.1**	Hectares (Ha)	UNIMUS Demographic & Land Data
4	Campus Green Open Space Percentage	**20.1%**	%	GOS Ratio

	Indicator	Value	Unit	Scope / Category	Data Source / Methodology
1	Total Scope 1 Emissions (Transportation & Operational Fuel)	**33.66**	ton CO_2eq/year	Scope 1	Direct Emissions from Campus Fleet
2	Total Scope 2 Emissions (Building Electricity)	**3,614.49**	ton CO_2eq/year	Scope 2	Indirect Emissions from PLN Electricity
3	Total Scope 3 Emissions (Campus Community Commuting)	**295.25**	ton CO_2eq/year	Scope 3	Indirect Emissions from Commuting
4	Total Scope 2 Energy Consumption	**15,965.85**	Gigajoule (GJ)	Scope 2	kWh to GJ Conversion
5	Total Renewable Energy Production (RE)	**454.95**	ton CO_2eq/year	Energy (RE)	PLN Electricity Substitution
6	Renewable Energy Production	**2,009.61**	Gigajoule (GJ)	Energy (RE)	kWh to GJ Conversion
7	**TOTAL CARBON FOOTPRINT (SCOPE 1, 2, 3)**	**3,488.45**	**ton CO_2eq/year**	**Scope 1, 2, 3**	**Total Campus Baseline Carbon Footprint**
8	Total Campus Carbon Stock	**8.20**	ton C	Carbon Stock	SNI 7724:2019
9	Potential CO_2 Absorption Equivalent (Carbon Offset)	**30.09**	ton CO_2eq	Carbon Absorption	SNI 7724:2019, Indonesian Wood Atlas, Jilid IV, i-Tree USDA, UGM Bamboo Model, Chave/Kettering Equation
10	**CARBON STOCK**	**30.09**	ton CO_2eq	Carbon Stock	-
11	**CARBON BALANCE / DIFFERENCE (CARBON OFFSET)**	**−3,458.36**	ton CO_2eq	Carbon Balance	Absorption – Total Baseline Emissions
12	CARBON EMISSIONS PER CAPITA	**0.241**	ton CO_2eq/person/year	Per Capita	THE SDG 13 Indicator
13	**UNIMUS CAMPUS CARBON NEUTRALITY STATUS**	**EMISSION SURPLUS (Offset Required)**	-	-	Carbon Balance Assessment

Universitas Muhammadiyah Semarang (UNIMUS) has established a baseline carbon assessment to monitor campus energy use, carbon emissions, carbon absorption, and progress toward carbon neutrality in accordance with SNI 7724:2019. With an academic community of 14,458 students and staff across 10.6 hectares of campus area, including 2.1 hectares of green open space (20.1%), the assessment recorded emissions from Scope 1, Scope 2, and Scope 3 of 33.66, 3,614.49, and 295.25 ton CO2eq/year, respectively, resulting in a total baseline carbon footprint of 3,488.45 ton CO2eq/year and per-capita emissions of 0.241 ton CO2eq/person/year. The campus also recorded 454.95 ton CO2eq/year from renewable energy production and an estimated potential CO_2 absorption of 30.09 ton CO2eq. Based on the calculated carbon balance, UNIMUS currently has an emission surplus of 3,458.36 ton CO2eq, indicating the need for carbon offset measures and further actions to reduce emissions, increase renewable energy utilization, and strengthen carbon sequestration as part of its pathway toward a more sustainable and carbon-neutral campus.

UNIMUS
UNIVERSITAS MUHAMMADIYAH SEMARANG

Climate Action 2025

Building a Resilient and Low-Carbon Future

13 CLIMATE ACTION

Our Commitment

UNIMUS is committed to supporting climate action through education, research, and community-based initiatives that enhance climate resilience, protect ecosystems, and promote environmentally sustainable practices. By engaging students, lecturers, and local communities, UNIMUS contributes to climate change mitigation and adaptation in line with the principles of SDG 13.

- Ecosystem Conservation
- Emissions Reduction
- Sustainable Practices
- Community Resilience



1 Mangrove Planting for Coastal Ecosystem Conservation

Semarang 2025

Faculty of Public Health (FKM) UNIMUS conducted a mangrove planting action to protect coastal ecosystems, reduce abrasion risk, and increase community awareness on the importance of marine and coastal conservation.

Contribution to SDG 13

Supports climate change adaptation by protecting coastal ecosystems, reducing the risk of abrasion and extreme weather impacts, and enhancing ecosystem resilience.



2 Educational Waqf Forest for Environmental Conservation

Semarang 2025

UNIMUS held a soft launching of the Educational Waqf Forest as a form of integration between Islamic values and environmental conservation, aiming to increase green open spaces and long-term ecosystem sustainability.

Contribution to SDG 13

Contributes to climate change mitigation through reforestation efforts, carbon sequestration, and the development of sustainable green spaces.



3 Plant Protection Practical Training at Bertani Agro Farm

Semarang 2025

Students participated in practical training on plant protection at Bertani Agro Farm to improve knowledge and skills in sustainable agricultural practices and to support climate-resilient food production systems.

Contribution to SDG 13

Supports climate-resilient agriculture by promoting sustainable plant protection practices, maintaining crop productivity, and strengthening food security.



4 Tree Planting and Mangrove Conservation by AMM UNIMUS

Semarang 2025

AMM UNIMUS organized a tree planting and mangrove conservation activity as a form of environmental care and student contribution to climate change mitigation and coastal ecosystem preservation.

Contribution to SDG 13

Enhances climate change adaptation by restoring mangrove ecosystems, protecting coastal areas, and increasing environmental awareness among students and the community.



5 Medicinal Plant (TOGA) Training for Community Empowerment

Semarang 2025

IMM UNIMUS conducted training on family medicinal plants (TOGA) to encourage community self-reliance, promote the use of environmentally friendly herbal plants, and strengthen community resilience to climate-related health risks.

Contribution to SDG 13

Contributes to climate change adaptation by promoting the use of local herbal plants, strengthening community resilience, and supporting healthy and sustainable living environments.

Acting for a Safer, Greener, and More Resilient Tomorrow

UNIMUS | SEMARANG | INDONESIA

Research Highlights 2025
Contributing to Climate Action (SDG 13)

13 CLIMATE ACTION

Our Commitment

UNIMUS is committed to climate action through education, research, and community engagement, guided by Rector's Decree No. 604/UNIMUS/SK.PR/2024 on Global Climate Change Mitigation and Adaptation. The policy integrates climate-related iniitatives into education, research, and community service, and promotes emission reduction, energy conservation, renewable energy, responsible waste management, green campus practices, and ecosystem conservation.



1 Integrated Techno-Economic-Environmental Assessment of a Photovoltaic, Wind Turbine, and Grid Hybrid System for 1300 VA Household Applications: A Case Study in Semarang City, Indonesia

ICHVEPS (2025)
DOI: 10.1109/ICHVEPS66913.2025.11351049

Contribution to SDG 13

Provides evidence for low-carbon energy solutions through the evaluation of a domestic hybrid renewable energy system, supporting the transition to cleaner and more sustainable energy use.



2 Assessing the Environmental Impacts of Banana Farming in Yogyakarta Special Region Using Life Cycle Assessment (LCA)

International Journal of Design and Nature and Ecodynamics (2025)
DOI: 10.18280/ijdne.200117

Contribution to SDG 13

Evaluates the environmental impacts of banana production, providing scientific evidence to improve sustainable agricultural practices and reduce climate-related environmental burdens.



3 Uncovering the Brittle Star's Genetic Diversity from Kalimantan and Bali

IOP Conference Series: Earth and Environmental Science (2025)
DOI: 10.1088/1755-1315/1496/1/012025

Contribution to SDG 13

Provides insights into marine biodiversity that can support ecosystem conservation and climate change adaptation in coastal and marine environments.



14 LIFE BELOW WATER

REPORT 2025

SDGS 14: LIFE BELOW WATER

Academic Program Supporting SDG 14 Life Below Water

14 LIFE BELOW WATER

UNIMUS supports the conservation and sustainable use of marine and coastal ecosystems through education, research, and community engagement. The S1 Ilmu Kelautan program contributes to generating knowledge, promoting sustainable practices, and strengthening community resilience for healthier oceans and coastal environments.

S1 Ilmu Kelautan

Marine Science

Contributes to SDG 14 through marine and coastal ecosystem research, conservation of marine biodiversity, and monitoring of ocean and coastal environments. This program supports the development of scientific knowledge for sustainable management of marine resources.







Key Initiatives for SDG 14

Life Below Water

Education, Research, and Collaboration for Marine Conservation

14 LIFE BELOW WATER

UNIMUS is committed to the conservation and sustainable use of marine and coastal ecosystems through academic programs, international collaboration, research, and community engagement. These initiatives contribute to generating knowledge, promoting sustainable practices, and strengthening community resilience for healthier oceans and coastal environments.

01 International Summer Course on Marine Ecology and Biosystematics 2025



UNIMUS, in collaboration with Universitas Diponegoro and the National University of Singapore, organized an international summer course to enhance academic capacity and practical skills in marine research. The program included field and laboratory activities using eDNA and ARMS methods to study marine ecology and biodiversity.

02 Collaboration with Reef Check Indonesia



UNIMUS established a collaboration with Reef Check Indonesia to strengthen research, education, community engagement, and capacity building in coral reef conservation and climate change mitigation. The initial activity included a public lecture on coral reefs and climate change, followed by discussions on future collaboration in marine conservation programs.

RESEARCH HIGHLIGHT

SDG 14: LIFE BELOW WATER

Uncovering the Brittle Star's Genetic Diversity from Kalimantan and Bali

Nursalim et al. | 2025 | *IOP Conference Series: Earth and Environmental Science*

FOCUS

Molecular identification and genetic diversity of brittle stars (*Ophiuroidea*), benthic organisms important to coral reef food webs.

METHOD

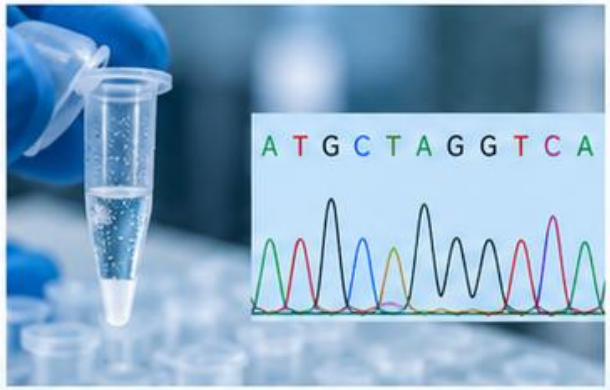
Mitochondrial COI gene sequencing and comparison with NCBI reference data.

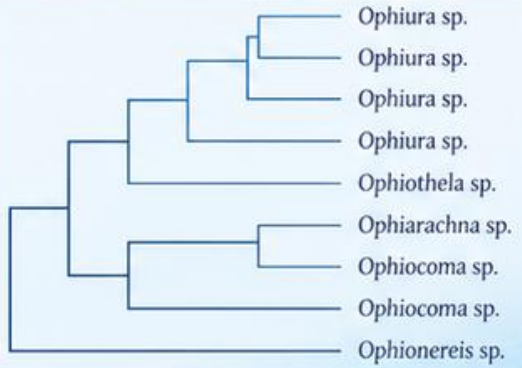
STUDY OVERVIEW

8 samples collected from Bali and Kalimantan; 5 successfully sequenced.

SDG 14 RELEVANCE

Provides biodiversity knowledge that can support marine species identification and conservation planning.







REPORT 2025

SDGS 15: LIFE ON LAND

UNIMUS
UNIVERSITAS MUHAMMADIYAH SEMARANG

SDG 15
LIFE ON LAND

15 LIFE ON LAND

S1 Agribisnis

Contributes to the sustainable management of land resources, agriculture, and biodiversity conservation through education, research, and community engagement.



SDG 15:
LIFE ON LAND

Protecting Terrestrial Ecosystems at UNIMUS

15 LIFE ON LAND

UNIMUS contributes to the protection, restoration, and sustainable use of terrestrial ecosystems through education, community engagement, and green campus initiatives. These efforts support biodiversity conservation, sustainable land management, and environmental awareness.

01 Educational Waqf Forest

1 September 2025 | UNIMUS Campus

Launched in collaboration with LHKP PP Muhammadiyah and LATIN. A roughly 3,000 m² campus waqf site is being developed as a green educational space and living laboratory for conservation, agroforestry and environmental learning. Initial tree planting included sengon, avocado and trembesi.



02 Community Compost Training

August 2025 | Ringinarum, Kendal

Himatepa UNIMUS conducted a community training to turn organic waste into compost and promote more environmentally responsible farming. The program strengthens community capacity in sustainable waste management and supports healthier terrestrial ecosystems.



03 Greening and Campus Vegetation

Tree planting, green-space development and land stewardship support environmental awareness and terrestrial ecosystem care. A greener campus contributes to biodiversity conservation, improved air quality, and a healthier learning environment for the UNIMUS community.



Illustrative visuals; initiative details based on UNIMUS institutional publications.

SDG 15:
LIFE ON LAND

Research Contributions at UNIMUS



01 Development and Application of Hydrolytic Bacterial Microcapsules as Bioremediation Agent of Hospital Wastewater — A Case Report in Semarang

International Journal of Environmental Science and Development
2025, 16(1): 7–15

This study developed alginate-based microcapsules containing hydrolytic bacterial consortia for the bioremediation of hospital wastewater. The application of the microcapsules effectively reduced ammonia (77%), BOD (57%), COD (44%), and phosphate (55%), demonstrating their potential as an environmentally friendly approach to wastewater treatment.

02 Strategic decision-making: Linking corporate choices, social responsibility, and environmental accounting in waste management

Social Sciences & Humanities Open
2025, 11: 101404

This study examines the relationships between environmental accounting, waste management, corporate decision-making, and corporate social responsibility (CSR) in Surakarta. The results show a significant positive relationship, with corporate decision-making acting as a key mediator in the link between environmental practices, waste management, and CSR initiatives. The findings highlight the importance of strategic decision-making in driving sustainable business practices.



REPORT 2025

SDGS 16: PEACE,JUSTICE,STRONG INSTITUTION

SDG 16:
PEACE, JUSTICE AND STRONG INSTITUTIONS



Supports peaceful, inclusive, and just societies through education, research, community engagement, and transparent and accountable institutional governance, in line with ethical values and integrity.

01 Strengthening Integrity and Character

Pra Baitul Arqom bagi Dosen dan Tenaga Kependidikan

Program pembinaan nilai-nilai Al-Islam dan Kemuhammadiyahan untuk memperkuat integritas, profesionalisme, dan kepemimpinan. Pada tahun 2025, kegiatan ini diikuti oleh 376 peserta.



02 Inclusive Education for Equal Access

Unit Layanan Disabilitas (ULD)

Berkomitmen menciptakan lingkungan kampus yang inklusif melalui pembentukan Unit Layanan Disabilitas (ULD) yang menyediakan layanan pendampingan, aksesibilitas, dan dukungan pembelajaran bagi mahasiswa dengan disabilitas.



03 Creating a Safe and Respectful Campus

Layanan PPKPT

Memiliki layanan Pencegahan dan Penanganan Kekerasan di Perguruan Tinggi (PPKPT) untuk menciptakan lingkungan kampus yang aman, bebas dari kekerasan seksual, perundungan, diskriminasi, dan intoleransi.



04 Transparent and Participatory Governance

Organisasi Kemahasiswaan

Mendorong partisipasi mahasiswa dalam tata kelola institusi melalui Senat Mahasiswa (SEMA) dan Badan Eksekutif Mahasiswa (BEM KM) sebagai wadah aspirasi, representasi, dan kolaborasi untuk membangun kampus yang demokratis, akuntabel, dan berintegritas.



Transparent and Accountable Governance

16 PEACE, JUSTICE AND STRONG INSTITUTIONS

UNIMUS is committed to implementing good university governance through clear policies, ethical conduct, and accountable mechanisms to ensure integrity, transparency, and a corruption-free environment.

01 GRATIFICATION CONTROL

Rector's Decree
No. 579/UNIMUS/SK.PP/2024

Provides guidelines for controlling gratification in the university environment to realize good governance that is clean, transparent, and free from corruption, collusion, and nepotism.

02 WHISTLEBLOWING SYSTEM

Rector's Decree
No. 606/UNIMUS/SK.PP/2024

Establishes a mechanism for receiving, processing, and following up on reports of alleged violations within the university, providing a safe, confidential, and accountable reporting process.

03 CONFLICT OF INTEREST GUIDELINES

Provides principles and procedures for identifying, disclosing, preventing, and managing conflicts of interest to maintain integrity, fairness, and public trust in university governance.



17 PARTNERSHIPS FOR THE GOALS

REPORT 2025
SDGS 17 PARTNERSHIPS FOR THE GOAL

SDG 17 | RESEARCH HIGHLIGHTS 2025

UNIVERSITAS MUHAMMADIYAH SEMARANG

Collaborative research with national and international partners to advance knowledge, strengthen research capacity, and contribute to the Sustainable Development Goals.

17 PARTNERSHIPS FOR THE GOALS

Selected Collaborative Research in 2025

01 Hypervirulent Klebsiella pneumoniae in Bronchopneumonia Patients



Integration of clinical and genomic analysis to map virulence biomarkers for precision detection of hypervirulent *K. pneumoniae*.

Partners: Multi-center collaboration (6 hospitals) – national network

Contributes to: 3 GOOD HEALTH AND WELL-BEING · 17 PARTNERSHIPS FOR THE GOALS

02 Rising Burden of Antimicrobial Resistance (AMR) in the Elderly



Retrospective analysis of 520 samples (≥60 years) to identify AMR patterns and risk factors.

Partners: Clinical laboratory network (Single-center, Indonesia)

Contributes to: 3 GOOD HEALTH AND WELL-BEING · 17 PARTNERSHIPS FOR THE GOALS

03 Gut Microbiome and Metabolic Health



Exploration of gut microbiome modulation to establish colonization resistance against multidrug-resistant *K. pneumoniae*.

Partners: International academic collaboration (in preparation/ongoing)

Contributes to: 3 GOOD HEALTH AND WELL-BEING · 12 RESPONSIBLE CONSUMPTION AND PRODUCTION · 17 PARTNERSHIPS FOR THE GOALS

04 Anemia Biomarker Development using BYMIO qPCR Kit



Development of molecular diagnostics for anemia screening with potential application in clinical and community settings.

Partners: Research and innovation collaboration with kit development partner (national/international)

Contributes to: 3 GOOD HEALTH AND WELL-BEING · 17 PARTNERSHIPS FOR THE GOALS

05 SUKUNCARE: Antidiabetic Extract from Breadfruit (Artocarpus altilis) Skin



In vitro study of antidiabetic potential to support development of functional foods and herbal-based products.

Partners: Interdisciplinary collaboration (academia – research partner)

Contributes to: 3 GOOD HEALTH AND WELL-BEING · 12 RESPONSIBLE CONSUMPTION AND PRODUCTION · 17 PARTNERSHIPS FOR THE GOALS

06 Bibliometric Analysis of Acute Myeloid and Acute Lymphoblastic Leukemia (1964–2024)



Mapping global research trends, key contributors, and collaboration networks to support future research directions.

Partners: Global research network (Scopus-indexed publications)

Contributes to: 4 QUALITY EDUCATION · 17 PARTNERSHIPS FOR THE GOALS

SDG 17 | PARTNERSHIPS FOR THE GOALS

UNIVERSITAS MUHAMMADIYAH SEMARANG

UNIMUS strengthens global and national partnerships to advance education, research, innovation, and community engagement.

17 PARTNERSHIPS FOR THE GOALS

International Academic Partnerships

01



Chulalongkorn University, Thailand

Strengthening collaboration in nutrition-related education and research, including academic visits, student and staff exchange, and joint activities in the field of nutrition.

02



Kanda University of International Studies, Doshisha University, and Chiba University, Japan

Establishment of academic collaboration to support student and staff exchange, research collaboration, and capacity building.

03



International Community Service, Sekolah Indonesia Jeddah, Saudi Arabia

Implementation of international community service by the Faculty of Dentistry (FKG UNIMUS) at Sekolah Indonesia Jeddah.

National Academic Partnerships

01



Universitas Muhammadiyah Kendari

Strategic collaboration to support education, research, and community service, including support for the development of the Faculty of Dentistry.

02



Universitas PGRI Semarang (UPGRIS)

Partnership between the Faculty of Economics and Business to enhance education through seminars, guest lectures, joint research, and student entrepreneurship development.

03



Universitas Duta Bangsa Surakarta

Collaboration covering curriculum development, joint research, lecturer and student exchange, MBKM program, and community service.

Recognition of International Collaborstion



M. Yusuf, Ph.D.

Outstanding International Collaboration Figure Award

Vice Rector IV of Universitas Muhammadiyah Semarang, M. Yusuf, Ph.D., received the Outstanding International Collaboration Figure Award in recognition of his significant contributions to advancing international cooperation in higher education.

The award was presented during an international seminar organized by Institut Teknologi AAS Indonesia on 31 July 2025 in Karanganyar, Central Java, Indonesia.