

PROGRAM AND ACHIEVEMENT REPORTS

# SUSTAINABLE DEVELOPMENT 2024



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### **PREFACE**



Assalamu'alaikum Warahmatullahi Wabarakaatuh

The Program Implementation Report and Activities related to the Sustainable Development Goals (SDGs) for the year 2024 has been successfully completed. This report aims to provide an overview of the wide range of programs and initiatives carried out by all members of Universitas Diponegoro in alignment with the 17 Goals of the Sustainable Development Goals.

As we are aware, the SDGs represent a global call to action initiated by the United Nations, urging every nation to take concrete steps toward ensuring peace, prosperity, and sustainability for people and the planet—now and in the future. Countries that have ratified this global agenda are encouraged to demonstrate strong commitment through actions and collaborations that advance the achievement of these goals.

Universitas Diponegoro reaffirms its commitment to supporting the implementation of the SDGs through continuous innovation, research, education, and community engagement. This effort also reflects UNDIP's dedication to contributing to Indonesia's national targets for SDG achievement.

It is our hope that this report provides valuable insights into UNDIP's diverse SDGs-related activities and becomes a source of inspiration for future collaborative actions toward a more sustainable world.

Wassalamu'alaikum Warahmatullahi Wabarakaatuh

Semarang, 1 January 2025 Rector

Prof. Dr. Suharnomo, S.E., M.Si.

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### INTRODUCTION

Sustainable Development Goals (SDGs) are programs that guide the development of countries in the world initiated by the United Nations (UN). This program was agreed upon by 193 countries and governments around the world through the document "Transforming Our World: the 2030 Agenda for Sustainable Development" at the 70th United Nations General Assembly in September 2015.

The SDGs have five basic principles that underlie the economic, social and environmental fields, namely: 1) People, 2) Planet (earth), 3) Prosperity, 4) Peace, 5) Partnership (cooperation) and 17 Goals and 169 Goals to achieve a better human life and the universe. The agreement of UN member countries on the SDGs has the consequence that countries in the world must implement the SDGs program to achieve the targets that have been set.

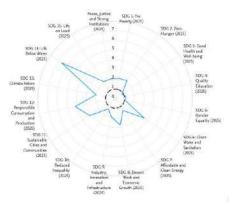
Universitas Diponegoro (UNDIP) as one of the Legal Entity State Universities in Indonesia has a vision of being an "excellent research university" (Utama and Ambariyanto, 2017), supported by the selection of Undip's Principal Scientific Pattern, namely Coastal Region Eco-development (Ambariyanto et al, 2017) strongly supports this. Regarding the University's Vision and Scientific Principles UNDIP is actively developing the SDGs program at the institutional level to support the Indonesian government in achieving all the goals that are targeted in the SDGs program. Sustainability is the basis for policy development at UNDIP, for that UNDIP developed UNITY (UNDIP Initiatives for Sustainability) (Ambariyanto et al, 2018).

Considering UNDIP is a higher education institution, UNDIP implement its policy to develop an advanced/modern, safe, and comfortable campus for the learning and teaching process (Utama, et al, 2017). Furthermore, in the process of implementing the program to achieve SDGs goals, all UNDIP stakeholders including lecturers, employees, students and the community around the campus are fully involved in accordance with their respective capacities.

The purpose of preparing this report is to provide an overview of the programs and achievements that have been carried out by UNDIP in 2024 in carrying out its role to support the achievement of the 17 SDGs goals.

### PUBLICATION BY SDGs

Publication output of Universitas Diponegoro from Sustainable Development Goals perspectives according from Scopus statistics can be seen in the relativity activity chart and bar chart.



The analysis shows that most activity in research and publication conducted related to SDG 14, SDG 12, SDG 6, SDG 11, and SDG 8.



The result inline with the realization of
Universitas Diponegoro vision to
become excellent research
university that focuses on the coastal
region eco development as part of UNDIP
contribution to the economy development of
Indonesia



# FFAIRS OF THE JAPAN EMBASSY

SEMARANG, 21 MARCH 2024





End poverty in all its forms everywhere



# UNDIP AWARDS KIP SCHOLARSHIPS TO 1,590 NEW STUDENTS ACROSS TWO WAVES

A total of 1,590 new students at UNDIP have been awarded KIP scholarships, with 1,346 students benefiting in the first wave and 244 in the second. The scholarships cover both tuition fees and living expenses, offering direct financial relief to students. This aid helps reduce the economic burden on recipients, enabling them to focus more fully on their studies without the distraction of financial stress. Many students rely on this support to manage their academic responsibilities, and the program plays a crucial role in fostering equal access to education.



UNDIP has collaborated with the Education and Culture Attaché of the Japanese Embassy in Indonesia to offer the MEXT scholarship, providing students the chance to study in Japan and fostering closer academic and cultural connections between the two countries. Additionally, UNDIP has launched the BSI Scholarship in partnership with Bank Syariah Indonesia (BSI) and the Ernst Mach Grant – ASEA-UNINET, broadening the range of financial aid available.

#### **ENHANCING ACCESSIBILITY: THE UNDIP CAMPUS BUS INITIATIVE**

The UNDIP campus bus service not only facilitates convenient transportation but also plays a significant role in promoting sustainability and reducing the carbon footprint of the university. By encouraging students and staff to use public transportation instead of personal vehicles, the bus service helps alleviate traffic congestion around the Tembalang campus. Additionally, the buses are equipped with eco-friendly technologies, contributing to UNDIP's commitment to environmental responsibility. The initiative reflects a broader effort to create a greener campus environment while fostering a sense of community among students and staff as they travel together.



publications until 2024 based on UN-SDGs keywords



**319**educational activities, researches, and community services

collaborations, either at local, regional, national, and international scale



# End poverty in all its forms everywhere



### ENCOURAGING DISCIPLINE THROUGH SAVING

Benedictus Krisna Putra, a student from UNDIP's Community Service Program, led an educational session on the importance of saving at the Elementary School 2 Wonosari. The session began with a discussion about the benefits of saving, highlighting how it teaches responsibility and financial management. The students showed great enthusiasm during the Q&A and then engaged in a hands-on activity, creating piggy banks from cardboard. This initiative aims to encourage students to appreciate saving and start the habit of setting aside a portion of their allowance at home.



# CELEBRATING 60 YEARS: FPP UNDIP COMMEMORATES ITS ANNIVERSARY WITH A SCHOLARSHIP

UNDIP's Faculty of Animal Science and Agriculture celebrated its 60th anniversary featuring Dr. (HC) Tjiu Thomas Effendy, S.E., M.B.A., President Director of PT. Charoen Pokphand Indonesia (CPI). He engaged with 50 scholarship recipients from various faculties and discussed feedback on the Charoen Pokphand Foundation Indonesia scholarship program. Dr. Effendy pledged to enhance opportunities for **UNDIP** highlighting the importance of collaboration between academia and industry in fostering future innovations.



## UNDIP RESPONDS TO CATASTROPHIC FLOODS IN DEMAK, CENTRAL JAVA

As the sorrow from the Grobogan flood disaster lingers, catastrophic flooding has struck the Demak region of Central Java due to a dam burst on the Kaliwulan River, followed by flooding from the Lusi River. Access to three areas—Undaan Kidul, Undaan Lor, and Tuak—has been cut off.. The Diponegoro Disaster Assistance Response Team (D-DART), composed of volunteers with various expertise, has been deployed to provide aid, including 200 family packages and 500 food boxes, in coordination with local leaders.



### UNDIP'S DISASTER ASSISTANCE RESPONSE TEAM (D-DART)

The Diponegoro Disaster Assistance Response Team (D-DART) at UNDIP exemplifies the university's commitment to community service and disaster relief. Composed of dedicated volunteers with diverse expertise, D-DART is equipped to respond swiftly to emergencies, providing essential aid and support in times of crisis. This team plays a crucial role in mobilizing resources, coordinating logistics, and delivering assistance to affected communities. With a focus on both medical and non-medical support, D-DART not only addresses immediate needs but also fosters resilience and recovery among disaster victims.





End hunger, achieve food security and improved nutrition and promote sustainable agriculture



# INNOVATING FOOD WASTE MANAGEMENT SOLUTIONS

Students from UNDIP's Faculty of Engineering earned the Silver Prize and a Special Award at the 2024 Thailand Inventors Day for their efforts controlling biohydrogen production from food waste. This international event, part of the International Intellectual Property Invention, Innovation, and Technology (IPITEx), Exposition featured participants from 25 countries. Creating the BIOHIDROGENO app to address the growing food waste issue, the app utilizes Enhanced Methane Prediction the Algorithm (EMPA) to safely manage biohydrogen output.



Dr. Muflihatul Muniroh, FK UNDIP's Vice Dean for Academic and Student Affairs, emphasized the importance of utilizing local food resources to combat stunting in Indonesia. Dr. Karina highlighted the impact of malnutrition and unhealthy eating habits, advocating for a focus on healthy diets and local food. Prof. Diana addressed the challenges posed by environmental factors on food security and promoted the use of fresh ingredients over ultra-processed foods. The event aimed to inspire collaboration and action toward improving nutritional outcomes for children across the nation.



### **DISCUSSING FOOD SECURITY CHALLENGES AND STRATEGIES**

The event featured Prof. Ir. Vitus Dwi Yunianto, who emphasized that a nation can achieve self-sufficiency if it meets 90% of its food needs through domestic production. Minister of Agriculture Amran Sulaiman expressed optimism that Indonesia could reach food self-sufficiency by 2026, outlining three key stages: reducing imports, improving food production, and ultimately achieving self-sufficiency. Prof. Vitus highlighted the potential of utilizing 10 million hectares of swamp land to improve food production, Prof. Dr. Ir. Noverita Sprinse Vinolina, discussing agrotechnology's role in food security, Prof. Ir. Anang Mohamad Legowo, addressing sustainable food security, and Prof. Ir. Tri Winarni Agustini, focusing on blue economy optimization for food security in marine and fisheries sectors.



300 publications to 2024 based on UN-SDGs keywords



450 educational activities, researches and community services



237
collaborations at local, regional, national, and

international scale.



# End hunger, achieve food security and improved nutrition and promote sustainable agriculture



### SCIENTIFIC ORATION ON UTILIZING CORN AS ANIMAL FEED

Dean Prof. Sugiharto emphasized the faculty's commitment to producing innovations for national and global food Dr. Effendy highlighted security. Charoen Pokphand's initiatives to develop high-quality hybrid corn varieties and stressed the importance of engaging youth in agriculture through technology. The event drew stakeholders across various sectors, aiming to enhance collaboration in Indonesia's agricultural landscape, with a focus on advancing corn production for improved food security.



## INSIGHTS ON AQUACULTURE IN COASTAL AREAS FOR FOOD SECURITY

Chaired by Prof. Dr. Ir. Purwanto, the highlighted Indonesia's vast event maritime potential, with 70% of its territory being ocean and a significant fishing industry producing 6.43 million annually. Despite this. tons consumption of fish products remains low, underscoring the need for increased awareness and protein intake from aquaculture. Prof. Dr. Heri Sutanto emphasized the importance of research on mangrove utilization in aquaculture for enhancing food security.





### COLLABORATION WITH ACIAR TO BOOST INDONESIA'S DAIRY INDUSTRY

To meet Indonesia's goal of supplying 60% of its national milk demand by 2025, UNDIP has partnered with the Australian Centre for International Agricultural Research (ACIAR) on the "IndoDairy Project Phase 2," launched through a MoU signed by Rector Prof. Dr. Yos Johan Utama and ACIAR CEO Prof. Andrew Campbell. Running from 2023 to 2028, the project aims to enhance the smallholder dairy sector, addressing challenges like Foot and Mouth Disease (PMK) and Lumpy Skin Disease (LSD), which severely affect milk production.



#### **UNDIP FOOD TRUCK**

Providing free meals every Tuesday and Wednesday, the truck allows students to access nutritious food by simply showing their student ID. This initiative helps offer a diverse menu of fresh ingredients, including rice, side dishes, vegetables, and fruits to meet daily nutritional needs. By fueling students with healthy meals, the program enhances energy and focus, positively impacting academic performance. Students are encouraged to arrive early, bring their own containers to reduce plastic waste, and maintain cleanliness in the food truck area.







Ensure healthy lives and promote wellbeing for all at all ages



### **INNOVATIVE STIMULATION MODELS ENHANCE GROWTH** LOW BIRTH WEIGHT INFANTS

Zubaidah from UNDIP's Nursing Science Department is exploring stimulation models to enhance the growth of low birth weight (LBW) infants, who are at risk for growth and developmental delays. Her study, involving 78 parents and significant found their infants. improvements in weight, length, and head circumference at one, two, and three months corrected age for those receiving the stimulation package compared to a control group, though no differences were seen at 40 weeks postmenstrual age. This research highlights the effectiveness of the stimulation model in supporting LBW development, infants' growth and especially at three months corrected age.



UNDIP's Faculty of Engineering hosted a lecture by Prof. Morishima, a nanotechnology expert from Osaka University. Initiated by Mochammad Ariyanto, a recent Ph.D. graduate from Osaka University, the lecture focused on "Bio-inspired and Robotics," where Bio-hybrid Morishima shared his research biomedical robotics to enhance human life. During his visit, he also discussed potential academic collaborations between Osaka University and UNDIP with the faculty leadership. Dean Prof. Dr. Jamari expressed gratitude for Prof. Morishima's visit and hopes for continued collaboration in the future.

### MAMMOGRAPHY SERVICES AT NATIONAL DIPONEGORO HOSPITAL

The National Diponegoro Hospital and the Faculty of Medicine at UNDIP have officially launched a new mammography service to enhance breast cancer detection and care. The ceremony, led by Rector Prof. Dr. Suharnomo and attended by key figures, including Dr. Lydia Purna Widyastuti and Dr. Yan Wisnu Prajoko, emphasized collaboration among hospitals to improve education and services related to breast cancer, benefiting both the UNDIP community and the broader public.



based on UN-SDGs keywords



researches and community services



regional, national, and



# Ensure healthy lives and promote wellbeing for all at all ages



### HEALTH SCREENING INITITATIVES AT UNDIP

UPT Keselamatan, Kesehatan Kerja dan (K3L) partnered Lingkungan Puskesmas Bulusan Tembalang to conduct a health screening event, Posbindu PTM, on July 18, 2024, at the UNDIP Library. This initiative aimed to detect health issues among 127 employees through screenings for blood sugar, blood pressure, and body measurements. Bina Kurniawan, S.KM., M.Kes., emphasized that the routine program promotes preventive care and provides health insights, focusing on early detection rather than treatment.



# MENTAL HEALTH SCREENING AND TRAINING FOR ADOLESCENTS AT MA DARUT TAQWA

In response to rising mental health issues among teenagers, Community Service Team from the Faculty of Medicine at Universitas Diponegoro collaborated with MA Darut Tagwa Semarang to conduct a mental health screening and training session on July 18, 2024. Led by Ns. Sri Padma Sari, S.Kep., MNS., Ph.D., the event involved around 90 students and teachers, focusing on raising awareness about mental health and providing essential tools for well-being. The included program screenings identify early signs of mental health issues and educational talks on topics like stress management and anxiety. Participants expressed appreciation for the insights gained, and the event concluded with the distribution of mental health guides for teenagers to ongoing awareness promote support.



#### **DISCUSSIONS ON HERBAL MEDICINE**

The Academic Senate's Professor Council of Universitas Diponegoro held the 17th series of its "UNDIP's Professor Talk" webinar, focusing on "Optimizing the Use of Herbal Medicine Through Standardization and Education for Public Health." Opened by Prof. Dr. Denny Nugroho Sugianto, the event addressed the rising demand for herbal medicines as both an opportunity and a challenge. With expert presentations, the webinar aimed to educate the public on the benefits and risks of medicine, highlighting herbal importance of strict standardization and informed usage for safety and efficacy.



# UNDIP RESEARCHER DEVELOPS AFFORDABLE CANCER PREVENTION SOLUTIONS FROM NATURAL INGREDIENTS

Innovative research **UNDIP** at is spearheaded by Mohamad Endy Julianto, lecturer focused developing cancer chemopreventive agents from natural materials. In just six months, he has secured six patents, five and international copyrights, six publications. His team collaborates with industry partners to create products combining bioactive compounds from sources like ginger and citrus peels. Addressing the high costs chemotherapy, Endy aims to provide affordable treatment alternatives while overcoming challenges in extracting these compounds. Partnering with PT. Naturindo Fresh Kulon Progo, he hopes to release these products soon to benefit cancer patients.





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



# PROMOTING HIGHER EDUCATION IN PAIT VILLAGE

UNDIP students conducted an outreach program in Pait village, Pekalongan, to promote the importance of higher education. Targeting local PKK and members, Posyandu the initiative highlighted the benefits of university education, including better job prospects and improved life quality. The students also provided information on available scholarships and encouraged parental support for children's education, aiming to inspire the village's youth to pursue higher education for a brighter future.



#### TACKLING SCHOOL DROPOUTS

LAL UNDIP students in Madyogondo Village, launched a program Magelang, address school absenteeism conducting a door-to-door survey to collect data and identify causes such as economic challenges and access to education. Their work produced important documents like a Village Action Plan and the establishment of teams to support education in the area. This initiative which aims to improve school participation, showcases the power of collaboration students, the local government, and the community to tackle educational issues.



### PROMOTING THE IMPORTANCE OF EDUCATION IN KARANGKAJEN

UNDIP recently held a socialization event in Karangkajen Village, Secang District, Magelang Regency, to raise awareness about the importance of education and address school dropout issues. The event, focused on strategies to keep children in school, addressed challenges like economic difficulties, lack of parental awareness, and logistical barriers. Practical solutions were provided, including information on educational assistance, scholarships, and subsidies from government or private organizations. Local parents, teachers, and community leaders actively participated in discussions, understanding the long-term social and economic impacts of children not continuing their education. This initiative is part of UNDIP's efforts to empower communities through education and practical solutions.



165
publications to 2024
based on UN-SDGs
keywords



educational activities, researches and community services



**657** 

collaborations at local, regional, national, and international level



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



### ADDRESSING BULLYING IN BANGLARANGAN SCHOOLS

In Banglarangan Village, bullying among schoolchildren remains a significant issue, often driven by a lack of supervision and the societal acceptance of violence. UNDIP have initiated students educational programs to raise awareness about the harmful effects of bullying. Through workshops at Public Elementary Schools 01 and 02 Banglarangan, they educated children on the causes and consequences of bullying, including legal penalties such as imprisonment and fines. This initiative, aiming to instill anti-bullying values early, was positively received by the schools.



# STUDENT EXCHANGE PROGRAM IN COLLABORATION WITH MALAYSIAN UNIVERSITIES

UNDIP offers its students the opportunity to participate in a student exchange program with Malaysia, designed to promote cultural exchange and academic collaboration. This initiative allows students to experience a different educational system, broaden their global perspectives, and enhance their personal and professional growth.



## WELCOMING HIGHSCHOOL STUDENTS FOR AN UNDIP CAMPUS VISIT

the Faculty of Social and Political Sciences at UNDIP hosted high school students from Tangerang and Bekasi. The visit aimed to introduce students to the university's study programs and facilities. During the three-day event, FISIP representatives highlighted the faculty's academic excellence, international standards, and career opportunities. The visit included a performance, informative presentations, and а campus allowing students to interact with current FISIP students.



### KOREAN AND ITALIAN LANGUAGE CLASSES

UNDIP's Foreign Language Program offers Italian and Korean language classes to its students, enhancing their global competencies and awareness. This initiative is designed to broaden students' linguistic skills and cultural understanding. The classes cater to different proficiency levels, allowing students to engage with these both academically languages socially. By offering such programs, UNDIP encourages its students to explore international cultures, which is beneficial for both personal development and future career prospects in an increasingly globalized world.









Achieve gender
equality and
empower all women
and girls



# RUANG BICARA: SUPPORT FOR UNDIP'S ENGINEERING STUDENTS

Ruang Bicara, led by UNDIP's Faculty of Engineering students, offers a secure space for addressing issues such as sexual harassment, mental health, and initiationrelated problems. With support from the Student Counseling Body, Ruang Bicara committed to fostering awareness and access to help by providing consultations and support. Its team of 22 members operates across divisions like Counseling, Public Relations. and Project allowing Management, coordinated assistance. The program also actively promotes its services through outreach initiatives and plans to integrate digital platforms for improved support access.



# NYALA SETARA SEMINAR 2024: A SPOTLIGHT ON GENDER EQUALITY

UNDIP's Nyala Setara 2024 seminar, hosted by the Faculty of Law's Women Empowerment Division, brings together influential voices to foster dialogue on feminism and gender equality. This inperson event will feature expert speakers who offer insights into gender justice, covering both societal challenges and practical strategies to achieve equity. Attendees will participate in interactive discussions and workshops designed to deepen understanding and encourage advocacy in everyday life. The Nyala Setara seminar serves as a platform for students and the community to engage with critical gender issues, inspiring a collaborative approach toward a fairer, more inclusive future.



### **GIRL UP DIPONEGORO**

Girl Up Diponegoro is a nonprofit organization at UNDIP focused on empowering young women and advocating for gender equality. Part of the global Girl Up initiative, which was founded by the United Nations Foundation, Girl Up Diponegoro engages students and community members in discussions and programs aimed at improving opportunities and representation for women in Indonesia. The organization works on developing leadership skills, promoting education, and fostering a sense of social responsibility among young women, preparing them to advocate for change in politics, education, and healthcare.



publications to 2024 based on UN-SDGs keywords



educational activities, researches and community services



26
collaborations at local, regional, national, and international level



## Achieve gender equality and empower all women and girls



### TACKLING FORCED LABOUR AND **CLIMATE CHANGE IMPACT ON WOMEN** AND CHILDREN

UNDIP's Department of Urban and Regional Planning, in partnership with BRIN, Griffith University, and local NGOs, conducted a Stakeholder Forum to discuss findings from the KONEKSI Research Project on forced labor and climate change impacts on women and children. This research targets Indonesian policy and business responses to these issues, focusing on coastal communities affected by rising sea levels and labor exploitation. By highlighting real community experiences, the underscores the urgent need for inclusive policies that address the intersecting challenges of climate and labor exploitation in vulnerable areas.



### **COMMITMENT TO PREVENT AND** ADDRESS SEXUAL VIOLENCE ON **CAMPUS**

UNDIP's Sexual Violence Prevention Task Force (Satgas PPKS) held a Declaration and Socialization event at Engineering Hall to promote a safe campus environment. Attended by UNDIP leaders and student representatives, the event focused on education around sexual violence, reporting, and prevention strategies. Rector Prof. Dr. Suharnomo emphasized adherence to Pancasila values, while Task Force Chair Dr. Hastaning Sakti stressed UNDIP's role in setting a zero-tolerance standard for higher education.





### **CELEBRATING MOTHER'S DAY THROUGH** VIBRANT COMPETITIONS

In celebration of Mother's Day, the Dharma Wanita Persatuan (DWP) at the Faculty of Science and Mathematics (FSM) UNDIP held an engaging competition themed "Empowered Women for an Advanced Indonesia." The event, opened by Dean Prof. Dr. Widowati S.Si. M.Si, featured speeches from key figures, including the DWP Chairwoman Ibu Beta Noranita and committee head Ibu Waty Tony. Participants enjoyed various contests, such as fried rice creation competition spontaneous challenges, judged by a panel including the Dean and senior DWP members. The aim was to foster camaraderie among the DWP members and highlight the vital role of mothers in society. Dean Widowati emphasized the importance of unity among all staff and faculty, encouraging collaboration to elevate FSM on both national international stages.



#### ADVOCATING FOR ONLINE TRANSPORTATION STUDENT SAFETY

FISIP UNDIP's Wellness Unit (FWU) held a research dissemination event with Go-Jek, Grab, and Maxim, focusing on student safety in online transportation. A survey among 220 students found that 60% encountered mismatched driver or vehicle details, and 41.4% primarily used motorbike services, with cases of verbal and physical harassment reported. FISIP urged providers to enhance safety, while Go-Jek presented safety features like "Share Location" and an "Emergency Button" through #AmanBersamaGo-Jek. The event highlighted the importance of continued collaboration to ensure UNDIP is a safe zone for all students.





Ensure
availability and
sustainable
management of
water and
sanitation for all



#### **DESALINATING BRACKISH WATER INTO POTABLE WATER**

UNDIP's desalination technology has successfully transformed brackish water into clean, drinkable water for communities in Demak and Jepara, providing 200,000 liters of potable water daily. Developed by the university's LPPM, this technology addresses the pressing issue of clean water scarcity in coastal areas, especially those impacted by flooding. The project, part of UNDIP's broader efforts to combat poverty and improve public health, has been implemented in collaboration with local governments. With the aim of creating a sustainable solution, the initiative also seeks to enhance the quality of life for residents by ensuring reliable access to water.



# GROUNDWATER MAPPING FOR WONOHARJO VILLAGE

Muhammad Rhevnanda. UNDIP's Geological Engineering student, created detailed groundwater map Wonoharjo Village to improve drought management, involving manually wells measure surveying 16 to groundwater depth and quality, including pH, TDS, and conductivity levels. The compiled data was processed with ArcGIS, producing a comprehensive map intended to identify ideal locations for irrigation wells to mitigate the impact of dry seasons.



# IMPLEMENTING PLASTIC BOTTLE WATER FILTERS IN SENTING VILLAGE

Senting Village struggles with clean water shortages due to pollution from agriculture and households. compounded by limited infrastructure. In response, a training session was led to teach residents how to build simple water filters using plastic bottles, including guidance on clean water benefits, filter materials, and maintenance, with hands-on demonstrations.



623
publications to 2024
based on UN-SDGs
keywords



333 educational activities, researches and community services



193
collaborations at local, regional, national, and international level



### Ensure availability and sustainable management of water and sanitation for all



### ADDRESSING WATER AND SANITATION CHALLENGES IN **DEMAK**

Demak Regency has become a key site for UNDIP's community service projects, including four primary initiatives: 1) desalination to convert brackish water into potable water; 2) raised toilets to improve sanitation for impoverished residents impacted by frequent flooding; 3) stunting prevention programs; and 4) ecotourism, transforming tidal floods into tourist attractions. In addition to Demak, UNDIP's community service extends to other Central Java regencies, with future expansions planned through partnerships with government and private sectors. These efforts support UNDIP's mission to bring tangible benefits to Central Java's communities through improved water access and poverty reduction.



### **UNDIP LAUNCHES DESALINATION** TECHNOLOGY TO ADDRESS WATER **CRISIS IN JEPARA**

UNDIP's Rector, Prof. Dr. Suharnomo, inaugurated a new desalination facility at the Teluk Awur campus in Jepara, aimed at solving the clean water shortages in coastal Central Java. The project, a collaboration with the Jepara Regency includes Government. also development of community ponds and fish processing initiatives. Prof. Suharnomo emphasized that the technology supports UNDIP's Tri Dharma mission, offering both environmental and economic benefits to local communities. Additionally, UNDIP distributed 2 tons of farmed tilapia to nearby villages, promoting better nutrition and reinforcing its social commitment.



### \*\*\*\* RAINWATER HARVESTING IN **BANJARSARI**

UNDIP's students introduced а harvesting campaign rainwater Banjarsari to raise awareness about using rainwater for daily needs and reducing flooding. Many residents were unaware of the benefits, as rainwater was often discarded into gutters. The students provided educational materials and a detailed guide for building systems to collect and use rainwater, aiming to promote sustainability and environmental responsibility easing the burden on drainage systems.



### **SEMINAR ON WATER DEVELOPMENT PERSPECTIVES**

UNDIP's International Relations Department held a seminar on World Water Day 2024, discussing clean water access through a gender lens. Dr. Henny Rosalinda addressed the impact of waterrelated tasks on women in traditional societies with limited clean water access, like in NTT. Anjani Tri Fatharini focused textile industry's on the consumption and UNDIP's collaboration with Mardi Utomo to upcycle old textiles into useful products, supporting SDGs 12 and 13.







Ensure access to affordable, reliable, sustainable and modern energy for all



### TRANSFORMING COOKING OIL WASTE INTO AIRCRAFT FUEL

Anggun Puspitarini Siswanto, а Chemical Engineering lecturer at Universitas Diponegoro, is developing sustainable aircraft fuel from used cooking oil (jelantah). This bioavtur reduces emissions by 15% and offers a renewable alternative to fossil fuel. Using Fine Bubble Technology, the process minimizes pollution and boosts efficiency. conversion Anggun's research, funded by LPDP and BRIN, to reduce acid rain and aims dependence on imported oil, while fostering investment in renewable energy industries.

# © UNDIP'S VOCATIONAL SCHOOL MINI BIODIESEL PLANT

UNDIP's Vocational School students conducted a "heating up" test on the biodiesel mini plant equipment to ensure its readiness for sustainable biodiesel production. Guided by lecturers and students technicians, the worked together to verify the functionality of the equipment. This hands-on experience allowed the students to apply their theoretical knowledge to real-world processes, enhancing both their technical skills and understanding of biodiesel production.

# DEVELOPMENT OF TOFU WASTE BASED ELECTRICAL POWER SOURCE IN SUGIHMANIK VILLAGE

In Sugihmanik village, Grobogan, tofu production has grown rapidly, with around 30 SMEs generating large amounts of wastewater rich in protein. Since 2021, UNDIP has collaborated with the local government to address this issue. The project, led by Prof. Dr. Sri Hartini, has focused on designing a wastewater treatment facility (IPAL) for 22 tofu SMEs, which helps reduce water pollution and conserve water. Additionally, tofu waste is being recycled into organic fertilizer and nata de soya, while biogas from the treatment process is converted into energy for street lighting.



publications to 2024 based on UN-SDGs keywords



24 ducational activities, esearches and community services



collaborations at local egional, national, and other pational level



# Ensure access to affordable, reliable, sustainable and modern energy for all



# GEOTHERMINE: INNOVATING SUSTAINABLE ENERGY THROUGH BITCOIN MINING

Geothermine, a new startup launched by the Geothermal Cuan Maksimal team, optimizes Geothermal Power Plants (PLTP) integrating sustainable Bitcoin mining. This generates significant addresses the lengthy Break Even Point (BEP), and utilizes surplus energy to tackle the imbalance in electricity supply and demand. Comprised of Geophysics students from the 2021 Physics program, Geothermine recently won the "Most Popular Startup Idea" award in a national competition. With the slogan "Powering the Future with Clean Energy & Smart Investment," Geothermine aims to lead the way in clean energy and sustainable investment for a greener future.



### COLLABORATION ON NUCLEAR ENERGY INITIATIVES WITH BRIN

UNDIP's Center for Plasma Research Team (CPR-TEAM) collaborated with the National Research and Innovation Agency (BRIN) to discuss collaborations on nuclear centered on nuclear fusion and fission, with a focus on ongoing research at the International Thermonuclear Experimental Reactor (ITER). Muhammad Nur, CPR-TEAM founder and UNDIP physics professor, noted Indonesia's strong engineering workforce and stressed the importance of utilizing their expertise. The conversation also addressed the potential of small modular reactors to meet Indonesia's energy needs, especially given its many islands.



### CONVERTING PLASTIC WASTE INTO FUEL OIL IN UJUNGGEDE VILLAGE

Plastic waste is a significant environmental issue, especially in densely populated areas. In Ujunggede Village, Pemalang, plastic waste accumulates at the integrated waste management site (TPST), and local residents often burn it, causing harmful environmental effects. To address this, students from UNDIP introduced pyrolysis technology to convert plastic waste into fuel oil. This process involves a simple machine that heats plastic in the absence of oxygen, producing fuel oil as a valuable alternative energy source. The students also designed a more efficient pyrolysis machine and trained local staff on its operation and maintenance.



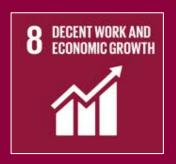




#### **BIODIESEL PLANT DEVELOPMENT VISIT**

UNDIP's Vocational School welcomed representatives from the Central Java Micro, Small, and Medium Enterprises Development Agency (LP UMKM) and PT Kaltim Bumi Energi Etam to discuss establishing a biodiesel plant. Khafid Sirotudin from LP UMKM presented plans to convert used cooking oil into biodiesel for local businesses. Heru Hussodo from PT Kaltim expressed interest in collaborating with UNDIP, known for its expertise in biodiesel research.





Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

### SEAWEED FARMING PROGRAM **EMPOWERS KEMUJAN VILLAGE**

UNDIP's community development program, involving students from multiple faculties, supports the cultivation of Kappaphycus sp. in Kemujan Village, Karimunjawa. This initiative, part of the "Strengthening Key Commodities for Community" program, addresses challenges including the 'ice-ice' disease and aims to improve production and market access through training digital and marketing.



#### UNDIP JOB FAIR 2024: **BRIDGING** TALENT WITH OPPORTUNITIES

The UNDIP Job Fair 2024 offers an excellent platform for students and alumni to connect with top companies seeking fresh talent. Organized by UNDIP, the event aims to bridge the gap between academia and industry, providing job seekers with direct access to leading employers across various sectors. This fair is an opportunity for participants to explore career prospects, attend workshops, and gain valuable insights from professionals, enhancing their chances of securing employment.



#### UNDIP STUDENTS BOOST ONLINE SALES FOR UMKM IN PENGGARIT VILLAGE

UNDIP students successfully launched the "Optimizing Online Sales for UMKM" program in Penggarit Village, Pemalang, aimed at helping local micro, small, and medium enterprises (UMKM) tap into e-commerce platforms. The program was carried out in two stages: the first focused on assisting UMKM with setting up and managing e-commerce accounts, while the second provided in-depth marketing strategies through a 52-page booklet. This initiative has helped businesses, such as AdaraHijab, thrive in the digital marketplace, with ongoing support to ensure their continued success.





educational activities researches and community services



collaborations at local, regional, national, and

international level



Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all



# 2024 UNDIP CAREER DAYS CONNECTS GRADUATES WITH CAREER OPPORTUNITIES

UNDIP's Faculty of Engineering, collaboration with Level 7 Indonesia, hosted UNDIP Career Days to connect UNDIP graduates, especially those from the Faculty of Engineering, with potential employers. With 37 participating national companies, both and international, the career fair showcased opportunities not only in engineering but also in banking, investment, and other sectors.



# UNDIP STUDENTS BOOST MARKETING SKILLS FOR WOMEN'S ECONOMIC GROUPS

UNDIP students from the Industrial Engineering program led a session on the Marketing Mix 4P for the Women's Economic Community and Women Farmers' Group in Sidorejo. workshop focused on improving product marketing through better strategic distribution, pricing, promotional tactics, including using social media platforms like Instagram and WhatsApp. By applying these strategies, the groups aim to increase product sales and economic welfare.



# UNDIP AND BRIN COLLABORATE TO TACKLE INFLATION THROUGH FOOD PRODUCTION

UNDIP's Faculty of Animal Science and Agriculture and the BRIN have teamed up explore how sustainable production systems can help reduce inflation. The research, led by Prof. Sugiharto of UNDIP and Dr. Nugroho Adi Sasongko of BRIN, focuses on evaluating the economic impact of food production systems, identifying strategies to curb inflation, and ensuring food security. This collaboration aims to develop effective will solutions that contribute economic stability and sustainability in Indonesia's food sector.





### UTILIZATION OF THE SISTER PROGRAM FOR UNDIP FACULTY CAREER DEVELOPMENT

UNDIP's Professor Council organized a webinar focused on the SISTER system, which records and integrates faculty activities for career development. Prof. Edy Rianto emphasized the importance of tracking faculty progress through SISTER, which consolidates data on teaching, research, and community service. Prof. Purwanto explained how SISTER supports faculty by documenting their qualifications, publications, and achievements, streamlining the process for promotions and career advancement. Experts discussed how faculty can use the system to enhance their career progression.





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



# INTERNATIONAL CONFERENCE ON ENVIRONMENTAL AND INDUSTRIAL INNOVATION SYSTEMS 2024

UNDIP's 9th International Conference on Environmental and Industrial Innovation Systems (ICENIS) focuses on innovative strategies for sustainable industry, infrastructure, and technology in support of the SDGs. Keynote speakers from leading global institutions will address solutions for renewable energy, climate change, and advancements in industrial systems, emphasizing the role of innovation in creating a sustainable future. The conference aims to foster cross-disciplinary collaboration and provide a platform for researchers and practitioners to present their latest findings. It serves as a vital space for developing actionable solutions to global challenges in industry and infrastructure.



### FIRE TRUCK INNOVATION FOR ENHANCED SAFETY

UNDIP has introduced a mini fire truck, modifying a three-wheeled Viar motorcycle with a water tank and pump. This vehicle is designed to quickly tackle fires in narrow or hard-to-reach areas, reducing fire risks on campus and nearby communities. Dr. Warsito Kawedar, UNDIP's Vice Rector, highlighted that this innovation reflects the university's commitment to workplace safety and offers a model for other institutions to improve safety awareness. The fire truck will be used not only on campus but also in surrounding areas to aid in fire risk mitigation. Through this initiative, UNDIP aims to demonstrate how innovation can enhance safety and sustainability.



# GIIAS AT UNDIP'S MULADI DOME: SHOWCASING INNOVATION AND SUSTAINABILITY

The Gaikindo Indonesia International Auto Show (GIIAS) will take place at UNDIP's Muladi Dome, focusing on sustainable mobility and innovative technologies. Supported by BP-UBIKAR, the event highlights UNDIP's commitment to SDGs through eco-friendly solutions. The exhibition will feature UNDIP's Business Incubator and Innovation Exhibition, showcasing student startups and faculty research in sustainable automotive technologies.





educational activities, researches and community services



50

ollaborations at local, egional, national, and aternational level



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



#### MARLIN SPACE: A SOCIAL HUB

The Faculty of Fisheries and Marine Science (FPIK) at UNDIP has introduced Marlin Space, a modern café created in collaboration with alumni, located next to the faculty canteen. Offering both airconditioned indoor seating and a stylish outdoor area, Marlin Space features a diverse menu of affordable drinks and snacks, along with strong Wi-Fi for students to study or socialize. Open daily from 9 AM to 9 PM, Marlin Space aims to foster connections within the academic community, providing vibrant а environment for creativity and collaboration.



## TRANSFORMATION OF WATER HYACINTH INTO HEXAGONAL CERAMICS

UNDIP has innovatively turned water hyacinth, previously seen as a nuisance, into Hexagonal Ceramic Interlocks (Hexara Ceramics), a soundproof material that reduces noise by up to 90%. This eco-friendly initiative, developed by a collaborative team from Architecture and Chemical Engineering, utilizes cellulose extracted from water hyacinth to create interlocking tiles that require no adhesives for installation. Already implemented in various buildings, Hexara Ceramics highlights UNDIP's commitment to sustainability.



## IKATEKA UNDIP HOSTS 2024 ANNUAL MEETING ON GREEN INDUSTRY

UNDIP'S Chemical Engineering Alumni Association (IKATEKA) collaborated with the Indonesian Engineers Association's Chemical Engineering Board (BKKPII) for the 2024 Annual Meeting at the Muladi Dome featuring 24 industrial exhibitions including a Green Industry Conference and planting activities. Vice Rector Wijayanto highlighted the vital role of chemical engineers in advancing green industry solutions, aiming to foster collaboration among universities, industry practitioners, and the government.





# INAUGURATION OF UNDIP'S ART CENTER TO FOSTER CULTURAL GROWTH

UNDIP's newly inaugurated Art Center aims to be a central hub for cultural activities, enhancing the university's cultural reputation and supporting studies on Pangeran Diponegoro. The building was officially opened by UNDIP's rector and faculty leaders, with performances by FIB's Gambang Semarang group. The center will host cultural events and collaborations with local industries, serving as a space for both academic and community-driven cultural initiatives.







Reduce inequality within and among countries



# UNDIP GIFTS ELECTRIC WHEELCHAIR TO SUPPORT CHILDREN WITH AUTISM IN LASM

UNDIP has implemented a significant Research, Development, and Application (RPP) program to assist children with autism in Lasem, Rembang. Led by researchers Dr.Eng. Munadi, Prof. Dr. Jamari, and Prof. Dr. M. Tauvigirrahman, the team developed an electric wheelchair with a strap holder, designed to help children with autism and controlled via joystick or smartphone. In collaboration with the UNDIP Mechanical Engineering Faculty, **Biomechanics** Engineering & Research Centre (UBM-ERC), and industry partner Reinutech, the project aims to support families like Udin's, helping overcome challenges children communication and social interaction.



### UNDIP'S STUDENT BODY SURVEY ON DISABILITY RIGHTS EVALUATIONS WITHIN CAMPUS

UNDIP has conducted a survey to assess disability rights and accessibility focusing for campus, on areas improvement in inclusion and infrastructure. The survey highlights the university's commitment to creating an accessible educational environment for all students, ensuring equal opportunities for those with disabilities. Results will inform future initiatives to enhance campus accessibility and support UNDIP's dedication to inclusivity. The findings will also guide efforts to foster a more supportive and equitable environment for students with disabilities.



# RAISING AWARENESS OF THE DANGERS OF STUDENT BRAWLS AT WONOKERTO ELEMENTARY SCHOOL

UNDIP student, Shella Amelia Putri, conducted an educational program for fifth and sixth-grade students at Wonokerto Elementary School, highlighting the serious dangers of student brawls. With fights becoming a concerning trend in local schools, the initiative aimed to help children understand the risks of injury, trauma, and the broader negative impacts on education. By addressing these dangers, the program sought to promote peaceful conflict resolution and create a safer, more positive environment for the students' development.



**181** publications to 2024 based on UN-SDGs keywords



262
educational activities,
researches and
community services



193

collaborations at local, regional, national, and international level



# Reduce inequality within and among countries



#### **GOTA SCHOLARSHIP ACCEPTANCE**

**UNDIP** has officially accepted the Beasiswa Gerakan Orang Tua Asuh (GOTA) scholarship program from Pamapersada Nusantara, designed to assist students facing disabilities and hardships. economic The provides financial support for students pursuing their D4/S1 degrees, ensuring that they can complete their education burden of without the financial constraints. The scholarship specifically targets students from the Faculty of Animal Science and Agriculture, Faculty of Science and Mathematics, and the Vocational School, who demonstrate the potential but lack resources to continue their studies.



### **UNDIP SCHOLARSHIP AND OPPORTUNITIES FOR PAPUA STUDENTS**

Dami and Anton, two students from Papua. received Affirmative Action scholarships, which provided them with access to higher education at UNDIP. Anton, from Jayapura, initially struggled with the differences between Semarang and Papua but found comfort in the diverse and supportive environment at UNDIP. His goal is to become an entrepreneur in the livestock industry. Similarly, Dami, from Nabire, Papua, and strength encouragement orientation during her at UNDIP, motivated by the support of new friends. Dami, too, aspires to contribute to Papua's development through a career in livestock entrepreneurship. Both students encourage their peers in Papua to pursue similar opportunities through Affirmative Action scholarship.



### **ICOCAS 2024: A GLOBAL COLLABORATION ON CULTURE AND SUSTAINABILITY**

UNDIP hosted the 2nd International Conference on Culture and Sustainable Development (ICOCAS), bringing together global experts and 115 presenters to discuss cultural pressing sustainability issues. The conference provided a platform for advancing research, fostering collaboration, highlighting the importance of cultural preservation and innovation in today's world.



### **DISASTER RELIEF EFFORTS IN** RESPONSE TO DEMAK FLOODS

UNDIP quickly mobilized its disaster response team following severe flooding in Demak, Central Java, caused by a breached levee. The Diponegoro Disaster Assistance Response Team (D-DART), led by faculty and students, provided aid to the affected communities, delivering 200 packages, 500 meals, additional support through a central kitchen in Kedung Waru Kidul. The team also coordinated with local authorities to distribute aid across the impacted areas of Undaan Kidul, Undaan Lor, and Tuak, ensuring that flood victims received timely assistance.







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



#### **ENHANCING UNDIP FACULTY SAFETY AND HEALTH COMPETENCY**

UNDIP is committed to improving employee competency in Occupational Health and Safety through certification programs. A refreshment training was held for 69 participants from various UNDIP units, in collaboration with the Central Java Labor and Transmigration Office, Semarang Fire Department, and Semarang PMI. This training aimed to update and strengthen knowledge in safety practices, with a focus on emergency response, workplace inspection, and first aid. The event, which included practical sessions, emphasized the importance of creating a safe and healthy campus environment, striving for a zero-accident culture at UNDIP.



### **UNDIP RUN 2024**

The 2024 UNDIP run, held to celebrate the university's 67th anniversary, saw 2,500 participants in the 5K and 10K races at the UNDIP Tembalang campus. Organized by the UNDIP Alumni Association (IKA UNDIP) in collaboration with the university, the event embraced the theme "Unity in Diversity," highlighting solidarity and Indonesia's diverse spirit. UNDIP Rector Prof. Dr. Suharnomo praised the strong participation and expressed hope for even more participants in future editions. With a total prize pool of IDR 134 million, the event featured a scenic route through the campus, encouraging a healthier lifestyle among students, staff, alumni, and the public.



# UNDIP'S PROFESSOR TALKS: STRENGTHENING NASIONALISM THROUGH ARTS

UNDIP's Academic Senate Professor Council hosted a webinar on strengthening nationalism through arts appreciation. The event, opened by Prof. Dr. Denny Nugroho Sugianto, emphasized the importance of preserving Indonesia's cultural values through art. Prof. Dr. Abdul Rohman highlighted the webinar's relevance to Indonesia's independence anniversary, discussing challenges and strategies for implementing nationalistic values through the arts.





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educational activities, researches and community services



109 aborations at loca

regional, national, and international level



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



### FINDINGS ON THE IMPORTANCE OF URBAN PARKS

Dr. Intan Muning Harjanti from UNDIP highlights the significance of urban parks as essential green spaces that foster social integration and nature interaction. Her research on optimizing active urban parks in Semarang identifies additional influential variables, including service scale, attractions, location tags, and user reviews, especially the impact of social media. These findings can guide Semarang's government contribute to theoretical developments in urban planning.



### UNDIP'S LPPM PROVIDES AID TO FLOOD-AFFECTED AREAS

UNDIP's Research and Community Service Institute (LPPM) provided aid to flood-affected areas, particularly at Asshodiqiyah Islamic boarding school in Semarang. This initiative, part of the university's commitment to education, research, and community service, involved the Logistics and Field Team from LPPM, led by Prof. Suherman and Prof. Rahayu. The distribution included essential supplies and was well-received by the boarding school's leadership. Suharnomo expressed support for LPPM's efforts and announced a free medical service event at Asshodigiyah, aiming to assist both students and nearby residents with health checks and necessary medications.



### ELECTRO TECH SUMMER INSTITUTE (ETSI) 2024

UNDIP's Department of Electrical Engineering organized the Electro Tech Summer Institute (ETSI) 2024, bringing together students from prestigious Malaysian universities, including Multimedia Universiti Teknologi MARA, University. and Nottingham University Malaysia. Attendees engaged in lectures, site visits to PLN Semarang and the CBIOM3S Laboratory, and explored local culture in Semarang and Yogyakarta.



### OPTIMIZING ECOTOURISM POTENTIAL IN PENGGARIT VILLAGE

UNDIP students collaborated with Penggarit village, Pemalang, to boost local tourism by developing sustainable ecotourism packages. By leveraging the area's natural beauty and cultural heritage, they introduced activities like fruit-picking and goat farming tours while promoting the village's unique traditions and cuisine. Through training and marketing efforts, the program helped enhance local tourism management, offering promising economic growth despite challenges in resources and financial planning.









Ensure sustainable consumption and production patterns

### ♥□ ECO-ENZYME: A SUSTAINABLE **SOLUTION FOR WASTE MANAGEMENT**

In Silirejo Village, UNDIP students introduced eco-enzyme, an innovative solution that transforms organic waste into a multifunctional product. By fermenting fruit peels, vegetable scraps, and food leftovers, eco-enzyme can be used as a natural cleaner, organic fertilizer, and pest repellent. Led by Moshka Dewi Azzahra, the initiative empowered local residents, particularly the PKK women, with the knowledge to produce eco-enzyme at home. This program not only reduces waste but also promotes environmental consciousness and offers a practical, cost-effective way to manage household waste.



### FISH RE-STOCKING IN CEPOKO **VILLAGE, SRAGEN**

UNDIP released fish fry into Cepoko village, Sragen's water reservoir, as part of an environmental initiative aimed at addressing overfishing environmental degradation. The program promotes aquatic ecosystem restoration fish sustainable populations, and ensuring food security for the local community. Students also educated residents on the reservoir's potential as a valuable resource, encouraging them to actively participate in its preservation. This initiative not only helps boost local fish stocks but also raises awareness about the broader importance maintaining natural resources for future generations.



#### TRANSFORMING WOOD DUST INTO NUTRIENT-RICH PLANTING MEDIUM

In Dukuh Ngasinan, Watubonang village, UNDIP student Fatharik Kurnia Ramadhan introduced an innovative method to turn wood dust waste into valuable organic planting media. Fatharik showcased how wood dust, combined with organic waste like vegetable and fruit scraps, can be fermented into a nutrient-rich growing medium. This eco-friendly process makes the medium ideal for plant growth by providing essential nutrients, maintaining good root aeration, and reducing chemical fertilizer use. The demonstration sparked interest among local residents to apply the media to their own crops.



keywords

publications to 2024 based on UN-SDGs



educational activities,



RESPONSIBLE CONSUMPTION AND PRODUCTION

# Ensure sustainable consumption and production patterns



### **UNDIP'S ZERO WASTE LIFESTYLE INITIATIVE IN TEGALDOWO VILLAGE**

UNDIP students initiated a Zero Waste Lifestyle program to address the growing plastic waste issue in Tegaldowo village, Central Java. The program aimed to reduce single-use plastic consumption by educating local residents about the environmental impacts of waste. Activities included distributing leaflets on waste management and promoting the use of reusable shopping bags and sorting waste. Participants also received tote bags to encourage eco-friendly habits.



### **WONSIBAT: NATURAL MOSQUITO** REPELLENT TO COMBAT DENGUE **IN WONOSEGORO**

UNDIP's community service team has introduced WONSIBAT, a natural mosquito repellent spray made from organic ingredients like lemongrass and orange to combat dengue fever Wonosegoro village. The students have actively educated the community on preventing mosquito breeding and making the product at home. This initiative has reduced dengue cases and raised awareness about healthy living, with potential for future development and expansion to other areas facing similar challenges.



### TRANSFORMING PLASTIC **BOTTLES INTO ART**

UNDIP students introduced a creative recycling project to the women of PKK RT 11 in Srebegan Village, Klaten, focusing on the reuse of plastic bottles. Guided by Chaerunisa Yunika Ningrum, the participants learned to craft Ikebana-style flower arrangements using recycled materials. This activity not only fostered creativity but also addressed local waste issues, encouraging participants to repurpose plastic waste into beautiful decor, potentially for sale or home use, while promoting environmental awareness.



### TRANSFORMING KITCHEN **WASTE INTO FERTILIZER**

UNDIP students conducted a workshop in Pagergunung Village, Pemalang, showing local women how to convert kitchen waste into organic liquid fertilizer. With organic comprising over 40% of the region's waste, the initiative taught residents to ferment scraps into a nutrient-rich fertilizer that enhances soil quality and plant growth. The participants were eager to apply it in their own gardens and were encouraged to produce it for personal or commercial use.











Take urgent action to combat climate change and its impacts



### **UNDIP'S EFFORTS TO REDUCE CARBON FOOTPRINT**

In 2024, UNDIP has implemented measures such as free campus buses and the availability of over 1,000 bicycles to encourage more sustainable modes of transport and thus decrease the campus' carbon footprint. These efforts are part of the university's commitment to reducing greenhouse gas emissions and promoting sustainability



### SUSTAINABLE WASTE MANAGEMENT IN **BANYUPUTIH VILLAGE**

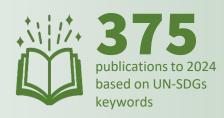
UNDIP students introduced an ecofriendly solution to tackle household organic waste in Banyuputih Village, collaborating with the local Women's Farming Group. The program was held to teach the community how to convert organic waste into ferment. These ferments, made from kitchen waste, can be used as natural cleaners, fertilizers, and pest repellents, benefiting both the environment and the economy. The program aims to reduce waste, promote sustainable practices, and fostering longterm recycling habits.



### **ENCOURAGING GREEN DIGITAL LITERACY**

In celebration of World Environment Day, the Djarum Foundation's Environmental Service hosted an event titled "Green Digital Literacy Towards a Sustainable Future" at UNDIP's Prof. Soedarto Building. The event, attended by 700 students, featured UNDIP Rector Prof. Dr. Ir. Suharnomo, M.Sc., media activist Haryo Damardono, and youth environmental advocate Jerhemy Owen. The discussion aimed to inspire Generation Z, the dominant online user group in Indonesia, to use their digital literacy to address pressing issues like climate change and environmental degradation.







educational activities. researches and community services



collaborations at local, regional, national, and international level



# Take urgent action to combat climate change and its impacts



### UNDIP HOSTS MANGROVE RESTORATION SEMINAR WITH PT FREEPORT INDONESIA

PT Freeport Indonesia (PTFI) participated in a national seminar on mangrove restoration at UNDIP, focusing on the crucial role of mangroves in coastal ecosystems and climate change mitigation. PTFI has rehabilitated 1,100 hectares since 2004, with experts emphasizing the importance of local contractor involvement and addressing degradation before rehabilitation efforts. The seminar also launched a book on mangroves in Mimika, enriching knowledge of Indonesia's mangrove biodiversity.





### PROMOTING CLIMATE ACTION IN PUBLIC HEALTH

UNDIP's Faculty of Public Health hosted its 6th Summer Course Program 2024 online, focusing on climate change adaptation in public health. Dean Dr. Budiyono emphasized the importance of community participation, with 50 participants from 17 countries engaging in discussions led by The course aims to enhance experts. understanding of public health responses to climate change, aligning with SDG goals for sustainable health and environmental practices. Participants expressed enthusiasm for exploring new insights and strategies to address the impacts of climate change on public health.





#### **UNDIP'S CARBON OFFSET INITIATIVES**

In 2024, UNDIP is implementing a Roadmap Towards Net Zero Emission, focusing on renewable energy, waste management improvements, and public awareness campaigns to reduce carbon emissions. These efforts align with SDG 13, emphasizing climate action, and involve collaborations aimed at addressing climate challenges. Furthermore, UNDIP is actively engaged in initiatives such as community-based environmental education programs, biodiversity conservation projects, and partnerships with local organizations to foster sustainable practices within the community.



### **ICOPH-TCD 2024**

UNDIP's Faculty of Public Health (FKM) hosted the 5th International Conference on Public Health for Tropical and Coastal Development (ICOPH-TCD 2024) online from July 30 to 31, 2024. The conference focused on "Climate-Sensitive Health Risks in Coastal Living Environments," featuring speakers from the Ministry of Health and various universities. It attracted 235 participants from several countries and emphasized the need for integrated strategies to tackle climate change, pollution, and malnutrition, promoting collaboration in public health initiatives.





Conserve and sustainably use the Oceans, seas and marine resources for sustainable development



# DISCUSSION OF MARITIME LAW ENFORCEMENTS

The Center for Law, Constitution, and Pancasila Studies at UNDIP's Faculty of Law held a discussion on maritime law enforcement in response to changes in Law No. 32/2014 on Maritime Affairs. Experts from UNDIP and other institutions discussed topics such as the role of law enforcement at sea, marine resource protection, and the impact of geographical and legal challenges, highlighting the need for stronger regulations, sustainable resource management, and clear institutional responsibilities to address illegal fishing, smuggling, and marine environmental degradation.



# AKALIN: EDUCATING MARINE CONSERVATION TO STUDENTS IN SUKOHARJO

UNDIP's community service team launched the "AKALIN (Ayo Kenali Laut Indonesia)" program at the 01 Nguter Elementary School to raise awareness about Indonesia's marine biodiversity. The program included lessons on protected marine species, edible marine life, and conservation efforts, followed by a creative coloring activity to help students better understand marine life and the importance of preserving the ocean ecosystem.



# EDUCATING ELEMENTARY STUDENTS ON MARINE LIFE TO FOSTER MARINE ECOSYSTEM PROTECTION

UNDIP students conducted marine education sessions for elementary school students in Pesucen Village, introducing them to marine biodiversity through activities like coloring, videos, and games. The program aimed to teach students about marine life, its habitats, and the importance of preserving ocean ecosystems. The initiative received positive responses from teachers and the local community for its engaging and educational approach to environmental awareness.





**317**educational activities, researches and community services



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collaborations at local, regional, national, and

international level



# Conserve and sustainably use the Oceans, seas and marine resources for sustainable development



# ITroSCO 2024: ADVANCING MARINE SUSTAINABILITY THROUGH GLOBAL COLLABORATION

UNDIP's 6th International Tropic Summer Course (ITroSCO) 2024 wrapped up online on August 30 after ten days of activities involving 65 participants from 13 countries. The event focused on enhancing international collaboration for marine sustainability, as emphasized by Dean Prof. Agus Trianto. Future editions are planned to be in-person for a more immersive experience. Participants praised insights gained from expert-led sessions, and awards were given to notable contributors. ITroSCO aims to strengthen global partnerships for marine ecosystem preservation moving forward.



## MARINE SUSTAINABILITY SUMMER COURSE

UNDIP, in collaboration with Universiti Tun Abdul Razak and the University of Waterloo, hosted the Summer Course "Voices From Coastal Communities: Securing Small-Scale Fisheries Vulnerability to Viability (V2V) Approach" from October 3 to 8, 2024. The event attracted over 100 participants and featured discussions led by experts on the relationships between vulnerability, viability, and social-ecological transitions in fisheries. The course also included field activities aimed enhancing collaboration in marine sustainability.



### ADVOCATING FOR ECO-PHILANTHROPY IN FISHERIES MANAGEMENT

Prof. Dr. Ir. Sutrisno Anggoro, a prominent figure in the Faculty of Fisheries and Marine Sciences at UNDIP, delivered his farewell oration titled "Eco-Philanthropic Approaches in Hydrobiology Sustainable Fisheries Management" during the recent Purna Adi Cendekia ceremony. He highlighted the essential role of hydrobiology in enhancing fisheries and aquaculture while advocating for the integration of eco-philanthropy to balance scientific advancements with ethical responsibilities toward environmental and human welfare. Prof. Sutrisno emphasized the need for a multidisciplinary approach sustainable ensure fisheries management practices and cautioned against the potential misuse of technology in this field.





## CONTRIBUTING TO UNDERWATER ECOSYSTEM DAMAGE ASSESMENT IN GILI TRAWANGAN

UNDIP experts, in collaboration with BRIN, are assisting the Kupang National Marine Conservation Area (BKKPN) in assessing the economic losses from coral reef damage caused by PT Tiara Cipta Nirwana's drilling activities at Gili Trawangan. UNDIP's involvement, led by professors, is focused on calculating the ecological impact of the seawater desalination pipe installation. This assessment is a critical part of the ongoing investigation, which could lead to administrative sanctions against the company, including coral reef rehabilitation. The findings will be discussed internally, and results are set to influence the enforcement of environmental protection measures by the government.





Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



# UNDIP'S TREE PLANTING COLLABORATION WITH DJARUM FOUNDATION

To celebrate its 67th Dies Natalis, UNDIP held a tree planting event with the Bakti Lingkungan Djarum Foundation (BLDF), where over 500 students planted 405 saplings around the campus. Rektor Prof. Suharnomo praised the initiative, noting UNDIP's 4th place in Asia and 2nd nationally for sustainability according to the rankings. GreenMetric emphasized that green a campus promotes happiness and health. Students received training on tree care, reinforcing environmental sustainability. Additionally, funds from the Padma Run 2024 supported this initiative, further contributing to community welfare and environmental preservation.



# PETIS: UNDIP'S COLLABORATIVE INNOVATION FOR COMMUNITY AGRICULTURE

Farming Women's Group Desa Ponowaren. Designed to improve soil fertility and ensure consistent plant watering, PETIS integrates timed water distribution with dual pumps and mist nozzles. This innovation supports sustainable farming while enhancing community competitiveness, gaining local acclaim as a practical solution for agricultural challenges. The system also reduces manual labor, allowing farmers to focus on other productive activities. Its underscores role success the of technology in empowering local agriculture.



#### PROMOTION OF PRACTICAL HOME GARDENING FOR MEDICINAL PLANTS

UNDIP's Agroecotechnology students organized a program in Desa Pengkol to teach efficient planting techniques for Family Medicinal Plants (TOGA) using polybags. Participants learned to optimize small yard spaces for cultivating plants like ginger, turmeric, and temulawak, making natural remedies more accessible. The hands-on activities emphasized sustainable gardening practices and encouraged participants to integrate TOGA cultivation into their daily lives, reducing reliance on chemical-based medicines.





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educational activities, researches and community services



collaborations at local, regional, national, and international level



Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss



### DIGITAL FARMING SYSTEM BOOSTS AGRICULTURAL PRODUCTIVITY

UNDIP's Vocational School students developed an innovative digitalized system called "Many Paddy," designed to enhance agricultural productivity. Led by Syaikha Butsaina Dhiya'ulhaq, the team won first place in the 2024 Social and Technology Innovation Challenge (SoTech) for their integration of aquaculture, farming, and animal husbandry. The system uses solar-powered sensors to manage water and nutrient levels in rice fields, optimizing resources and improving soil health. By effectively managing water and enriching the soil, this innovation offers sustainable solutions that can revolutionize local agriculture, making efficient farming more and environmentally friendly.



# UTILIZING BIOPORE TECHNOLOGY TO ENHANCE AGRICULTURE IN PAKISPUTIH

students UNDIP introduced innovative biopore technology program to support sustainable farming practices in Pakisputih, Pekalongan. This initiative focuses on converting organic waste into compost, which is then used to improve soil quality and enhance plant growth. teaching villagers to biopores-holes in the ground that speed up the decomposition processstudents enabled the community to enrich the soil with organic matter, enhancing crop yield and health. The program also promotes conservation, improving soil moisture retention.



### INTRODUCTION OF BUDIKDAMBER HYDROPONICS IN TAMBAKBOYO VILLAGE

UNDIP students in Tambakboyo village introduced Budikdamber, a method of fish farming integrated with hydroponic planting, to improve community nutrition and support sustainable land use. Led by Keisya Aulia Rizky Kamila, the project focused on maximizing limited space by combining fish cultivation with plant promoting efficient growing. utilization. The initiative included bilingual educational videos with step-by-step instructions on how to implement the system, empowering both local and global audiences with accessible, eco-friendly solutions for healthier communities and more sustainable farming practices.



## PROMOTING CULTIVATION OF ESSENTIAL OIL-PRODUCING PLANTS

UNDIP students initiated a project to plant essential oil-producing crops such as eucalyptus, patchouli, and lemongrass at KHDTK Wanadipa. By cultivating over 500 seedlings, they aimed to preserve biodiversity while leveraging the economic value of these plants in fragrances, food, and medicine. This initiative not only utilized the area's fertile land but also encouraged sustainable practices and income generation for local communities.







Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels



### **VOICES OF IRUD: UNDIP STUDENTS ADVOCATE FOR WAR VICTIMS**

UNDIP students from the International Relations program marked the International Day of Innocent Children Victims of Aggression and the United Nations International Day in Support of Victims of Torture with a peaceful demonstration. The event allowed students to express solidarity with war victims in Palestine and Ukraine. The demonstration included six orations, highlighting topics such as ecocide, the suffering of Palestinians, and the impact of the Russia-Ukraine conflict. The event concluded with a call for international solidarity and a commitment to raising awareness about global human rights issues.



#### UNDIP HOSTS INTEGRITY ZONE DEVELOPMENT WORKSHOP

UNDIP held a workshop on the development of Integrity Zone work units and guidance on completing evaluation work sheets. The event, attended by UNDIP's leadership and key administrative figures, aimed to support the implementation of the Ministry of Education, Culture, Research, and Technology's decision to create corruption-free zones within educational institutions. The workshop included presentations on bureaucracy reform and integrity zone policies, culminating in a session on strategies for achieving a clean and efficient bureaucracy at UNDIP, ensuring better service to all stakeholders.



#### RAISING AWARENESS ON CLEAN ELECTIONS AND ANTI-MONEY POLITICS

Ahead of the 2024 elections, UNDIP students hosted an event in Desa Krikilan to educate voters on the dangers of money politics. The initiative aimed to raise awareness about how bribery distorts democratic processes, urging voters to participate ethically. The students also distributed informational posters to emphasize the importance of a clean, fair election and its impact on the integrity of democracy. By providing clear examples and outlining the legal consequences of engaging in money politics, the event sought to empower voters to make informed decisions. This initiative contributes to a broader effort to ensure a more transparent and accountable electoral process.





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educational activities,
researches and
community services



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collaborations at local, regional, national, and international level



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# PROMOTING UNDIP'S FACULTY OF LAW INTEGRITY ZONE FOR A CORRUPTION-FREE ENVIRONMENT

UNDIP's Faculty of Law held a socialization event to establish an Integrity Zone towards a Corruption-Free Area. Attended by faculty leadership, lecturers, and academic staff, the event featured key speakers Dr. Abdul Syakur Anak Agung Sagung Manik Mahachandra, who shared strategies for building a culture of integrity, transparency, and accountability. The speakers highlighted the shared responsibility of all academic members to actively support ZI WBK, aiming to foster an anti-corruption culture and improve public service quality at FH UNDIP. The event concluded with an engaging discussion. reflecting participants' commitment to a corruption-free faculty environment.



# ADVOCATION ON LEGAL PROTECTION FOR INDONESIAN MIGRANT WORKERS AND THEIR FAMILIES

Many Indonesian Migrant Workers (PMI) face various issues abroad, leading this study to explore an ideal human rights-based legal protection model for PMI and their families. Dr. Elfia Farida from UNDIP's Faculty of Law explained that the research employs doctrinal and social perspectives to identify legal protections relevant to PMI and validate these through social research. Findings indicate that PMI's rights have gained recognition as legal subjects through instruments like the ILO conventions. ICMW, and the Consensus. The study advocates for local village regulations for internal protection and bilateral agreements with host and transit countries for external support. Dr. Elfia proposes amendments to Article 42 of the PPMI Law and Article 78 of Government Regulation No. 59/2021, suggesting village governments be mandated to establish regulations protecting PMI and their families.





# UNDIP SEMINAR EXAMINES CONDITIONAL DEATH PENALTY DEBATE

UNDIP's Faculty of Law hosted a seminar featuring experts including Dr. Dhahana Putra and Professors Pujiyono, Rahayu, and Shidarta. Discussions addressed the death penalty's history, human rights, and potential reforms, exploring its legal origins, discussing ethical and political complexities, outlining commutation mechanisms under the new Criminal Code, and Prof. Shidarta highlighted the enduring philosophical debate between abolition and retention.



### DATA PROTECTION AND CYBERSECURITY SEMINAR

In celebration of its 20th anniversary, UNDIP's Informatics Program hosted a seminar on privacy laws, AI in cybersecurity, and threat management. Dean Prof. Dr. Kusworo Adi highlighted plans for advanced degrees and international collaborations, aiming to strengthen Informatics' global standing. The event also included discussions on the role of strong data recovery plans and proactive cybersecurity measures in mitigating digital risks. Alumni and students engaged actively, reflecting the program's commitment to cultivating skilled professionals for Indonesia's tech industry.





Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development



# PARTNERSHIP WITH BAYAN RESOURCES FOR EDUCATION AND INFRASTRUCTURE DEVELOPMENT

UNDIP has partnered with PT Bayan Resources Tbk, Yayasan Purnomo Yusgiantoro, and Dato' Dr. Low Tuck Kwong to enhance education and infrastructure. The collaboration includes the construction of a new Civil Engineering Department building and the provision of scholarships for neurology specialists. This partnership exemplifies UNDIP's commitment to the Triple Helix model, fostering collaboration between academia, government, and industry to support sustainable development and innovation.



# BUILDING PARTNERSHIPS WITH THE EU EMBASSY TO STRENGTHEN GLOBAL COOPERATION

UNDIP has signed an MoU with the European Union (EU) Embassy to enhance Indonesia-EU relations. The collaboration aims to boost academic exchanges, youth engagement in global issues, and scholarship opportunities for UNDIP students at EU universities. UNDIP's Rector, Prof. Dr. Suharnomo, and the EU Ambassador, H.E. Denis Chaibi, signed the MoU at UNDIP's Widya Puraya Campus. The partnership also promises to expand beyond the Faculty of Social and Political Sciences, involving all UNDIP faculties in future collaborations. This cooperation opens up new possibilities for UNDIP students to engage in global academic and cultural experiences. Moreover, the MoU will contribute to fostering long-term ties between Indonesian and European institutions, further advancing educational opportunities for future generations.



### UNDIP FORGES HISTORIC COLLABORATION WITH ALIBABA CLOUD

UNDIP's Faculty of Science and Mathematics (FSM) has partnered with Alibaba Cloud Indonesia, marking a significant first for Javanese universities. The collaboration, aimed at advancing the region's IT ecosystem, includes opportunities for cloud computing internships and knowledge exchange. Key figures such as FSM Dean Prof. Dr. Kusworo Adi and Informatics Department Chair Dr. Aris Puji Widodo attended the event alongside Alibaba Cloud representatives, emphasizing the importance of academia-industry cooperation and practical skills development for students.





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educational activities, researches and community services



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collaborations at local, regional, national, and international level

# **PARTNERSHIPS**

Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development



#### STRENGTHENING **GLOBAL** PARTNERSHIPS WITH UNIVERSITY OF **AUCKLAND**

During a recent visit to Auckland, New Zealand, UNDIP's delegation, led by Prof. Mohamad Nasir, Chair of the Board of Trustees, and Prof. Edy Rianto, Chair of the Academic Senate, met with University of Auckland leaders. Discussions centered on ioint and double degree programs, internships, and research collaborations focused on Sustainable Development Goals in areas like renewable energy and circular economy. The University of Auckland, highly ranked for sustainability, welcomed UNDIP's proposals, marking the beginning of a promising partnership to drive academic excellence and global impact.





### UNDIP SIGNS MOU WITH UNIRAZAK FOR RESEARCH COLLABORATION

UNDIP and Universiti Tun Abdul Razak (UNIRAZAK) Malaysia have strengthened their collaboration in international research through an MoU signing and a discussion universities' between both Faculty Economics and Business. This partnership will student business education, on exchange programs, and joint research initiatives. The collaboration aims to enhance academic quality, promote staff and student align mobility, and efforts with Sustainable Development Goals. The MoU was signed by UNDIP's Rector Prof. Dr. Suharnomo and UNIRAZAK's Vice Chancellor Prof. Datin Paduka Dr. Samsinar Binti Md Sidin.





#### **PROFESSOR UNDIP HOSTS FROM OSAKA** UNIVERSITY **FOR COLLABORATION TALKS**

UNDIP welcomed Prof. Keisuke Morishima from Osaka University to discuss potential collaborations in education and research, including faculty and student exchanges, internships, and joint research projects. Osaka University, ranked among the top universities globally, expressed interest in strengthening ties with UNDIP. collaboration was initiated by Mochammad Ariyanto, a faculty member from UNDIP's Mechanical Engineering Department, who previously studied at Osaka University. Prof. Morishima also invited UNDIP faculty to visit Osaka University for further collaboration.



### **COLLABORATION WITH UNIVERSITY OF** HAWAI'I TO HOST SUMMER COURSE **ON SUSTAINABILITY**

UNDIP's Department of Urban and Regional Planning partnered with the University of Hawai'i at Manoa to offer a Summer Course on "Sustainability and Resilience in Spatial Development." The hybrid course featured a two-day symposium and field visits to local communities affected by climate change. Participants appreciated the chance to engage directly with residents and gain practical insights into urban and environmental challenges.



"Universitas Diponegoro as a higher education institution in Indonesia is committed in implementing various programs related to SDGs. All faculties, schools and other units at Undip have developed programs and activities to achieve 17 goals in the SDGs. This is in order to support the Commitment of the Government of Indonesia in achieving the national targets of the SDGs."



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