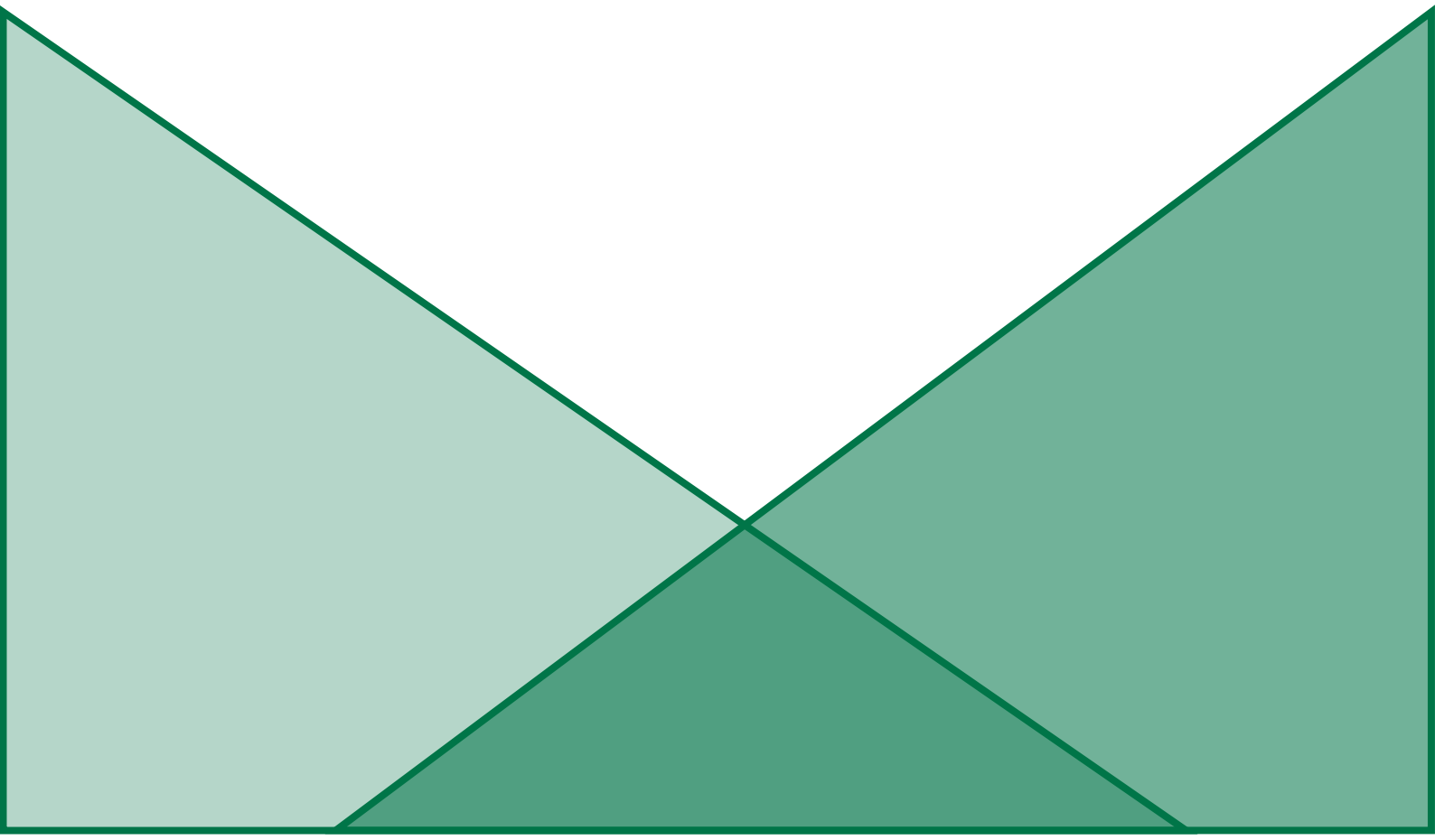
REPORT ON THE SUSTAINABLE DEVELOPMENT GOALS

Report 2025



Contents

Executive Summary 5

About MATE 6

University Impact Rankings for the SDGs 6

Research Contribution of MATE 7

SDG 1 9

Key 2025 Research Contributions to SDG 1 9

Supporting Families and Communities 10

SDG 2 11

Key 2025 Research Contributions to SDG 2 11

Sharing Knowledge for Resilient Food Systems 11

* A solution for using mycotoxin-contaminated maize 11
* The KÁN University Days 2025 12
* FAO strengthens agricultural resilience in Tajikistan through integrated pest-management training 12

SDG 3 13

Key 2025 Research Contributions to SDG 3 13

Promoting Health Through Education and Engagement 14

* Spring One Health Day 14
* “For Our Healthy World” MATE Open University in Kaposvár 14

SDG 4 15

Key 2025 Research Contributions to SDG 4 15

Innovating Teaching and Learning 15

* Student feedback shapes teaching: MATE launches the OMHV 15
* Amanda, the AI teaching assistant: a pioneering educational innovation at MATE 16

SDG 5 17

Key 2025 Research Contributions to SDG 5 17

Advancing Opportunity and Representation 17

* Outstanding women's careers: MATE Academy closing event on gender equality 17
* Girls' Day at MATE 18

SDG 6 19

Key 2025 Research Contributions to SDG 6 19

SDG 7 20

Key 2025 Research Contributions to SDG 7 20

SDG 8 21

Key 2025 Research Contributions to SDG 8 21
Supporting Careers and Economic Opportunity 21
* MATE receives the HR Excellence in Research Award 21
* Career Day and cooperative practical fair at the Szent István Campus 22
SDG 9 23
Key 2025 Research Contributions to SDG 9 23
Strengthening Innovation and Research Infrastructure 24
* Proof of Concept innovation-funding programme 24
* The renovated Szarvas Knowledge Centre has been handed over 24
SDG 10 25
Key 2025 Research Contributions to SDG 10 25
Widening Participation and Opportunity 26
* Rural areas, youth, future 26
* A volunteer point has opened at MATE 26
SDG 11 27
Key 2025 Research Contributions to SDG 11 27
Connecting Communities, Heritage and Places 28
* The development of cities is unthinkable without the development of rural areas 28
* The Hungarian Agricultural Museum moves to MATE 28
SDG 12 29
Key 2025 Research Contributions to SDG 12 29
Promoting Circular and Responsible Practices 30
* Second Life for Electronics: Conscious Tech Week at MATE 30
* Sustainability Day and clothes swap in Gödöllő 30
SDG 13 31
Key 2025 Research Contributions to SDG 13 31
Building Climate Knowledge and Resilience 32
* Climate resilience in food systems 32
* National Climate and Landscape Research Centre established in Karcag 32
SDG 14 33
Key 2025 Research Contributions to SDG 14 33
SDG 15 34
Key 2025 Research Contributions to SDG 15 34
Protecting Biodiversity and Natural Heritage 35
* International success in research on the invasive Asian hornet at MATE 35

* The Buda Arboretum becomes a protected historic garden 35
SDG 16 36
Key 2025 Research Contributions to SDG 16 36
Building Trust, Memory and Institutional Cooperation 37
* Memory of prisoners of war 37
* Strategic cooperation between MATE and the Ministry of Defence 37
SDG 17 38
Key 2025 Research Contributions to SDG 17 38
Collaborating for Sustainable Development 39
* Agroecology Partnership: another MATE-coordinated project wins funding 39
* MATE works together to establish knowledge centres for sustainable development 39
MATE 2030 Strategic Programmes 40
Student Mentorship Program 40
Future Leaders Programme 40
MATE Alumni Program 41
MATE Teaching Awards 41
Renewal of Adult Education 42
SMART UNI 42
MATE Impact Awards 43
Flagship Research Groups and Research Excellences Programmes 43
Innovation Competitiveness Diagnostics 44
MATE 100 Club 44

Executive Summary

The United Nations General Assembly adopted the 2030 Agenda for Sustainable Development in 2015, guided by the principle of *"leaving no one behind."* This global framework comprises 17 Sustainable Development Goals (SDGs) that collectively aim to transform the world by eradicating poverty, promoting social inclusion, ensuring environmental sustainability, and advancing peace, good governance, partnerships, and economic prosperity for all nations and peoples.

This Sustainability Report 2025 of the Hungarian University of Agriculture and Life Sciences (MATE) underscores the University's commitment to the SDGs. The report captures MATE's progress toward its sustainability objectives and showcases transformative initiatives implemented in collaboration with faculty, students, staff, and community partners over the past year. It highlights the diverse range of research, innovation, and educational activities through which the University contributes to the achievement of the global goals.

Each SDG section highlights relevant research and education-related indicators, based on Elsevier's 2022 SDG Mapping methodology and adapted to MATE's institutional context. This localized approach provides a more accurate representation of the University's unique contributions to sustainable development within Hungary, across Central Europe, and in the broader international sphere.



About MATE

On February 1, 2021, the Hungarian University of Agriculture and Life Sciences (MATE) was established through the integration of eleven research institutes and companies of the National Agricultural Research and Innovation Centre, together with the Agricultural Research Institutes of the University of Debrecen and the Research Institute of Karcag (**Figure 1**). As a result, MATE has evolved into far more than a traditional university — it is a comprehensive hub for education, research, innovation, and practical development within the agricultural and life sciences sectors.



Figure 1. The campuses of the Hungarian University of Agriculture and Life Sciences

University Impact Rankings for the SDGs

The 17 Sustainable Development Goals (SDGs), established by the United Nations in 2015, define a global framework for eradicating poverty, reducing inequalities, protecting the planet, and ensuring prosperity for all by 2030. Aligned with this vision, the Times Higher Education (THE) Impact Rankings, launched in 2019, assess how universities worldwide contribute to the SDGs through their research, teaching, outreach, and institutional practices.

The Hungarian University of Agriculture and Life Sciences (MATE) actively participates in this global evaluation, focusing on six priority goals that reflect its academic strengths and societal mission: SDG 1 (No Poverty), SDG 2 (Zero Hunger), SDG 6 (Clean Water and Sanitation), SDG 8 (Decent Work and Economic Growth), SDG 15 (Life on Land), and SDG 17 (Partnerships for the Goals). Through its targeted research, community engagement, and sustainable operations, MATE demonstrates measurable impact in these domains.

As the largest agricultural university in Hungary, the Hungarian University of Agriculture and Life Sciences (MATE) is deeply committed to advancing sustainable development, a commitment reflected in its performance in the Times Higher Education Sustainability Impact Ratings. From the outset, MATE achieved a position in the 201–300 range, placing it among the top 12% of ranked universities worldwide - an outstanding accomplishment among Hungarian institutions. In 2026, MATE earned the first national ranking out of seven participating universities.

In the Times Higher Education Sustainable Impact Ratings (2026), a total of 1603 universities were evaluated globally. MATE's participation across these selected SDGs underscores its commitment to sustainability, knowledge transfer, and evidence-based solutions that address the most pressing global challenges while advancing Hungary's leadership in agricultural, environmental, and socio-economic research.

Figure 2 presents MATE's performance across the Sustainable Development Goals (SDGs) relevant to this ranking. The analysis served as a strategic foundation for identifying priority areas for the 2026 THE Impact Rankings submission. Building on these insights, MATE continues to report and provide detailed data for SDG 2 (Zero Hunger), SDG 6 (Clean Water and Sanitation), SDG 8 (Decent Work and Economic Growth), SDG 9 (Industry, Innovation and Infrastructure), SDG 12 (Responsible Consumption and Production) and SDG 15 (Life on Land), alongside the mandatory SDG 17 (Partnerships for the Goals). This integrated approach reflects MATE's enduring commitment to sustainability and its mission to address global challenges through research, education, and innovation.

Times Higher Education

Sustainable Development Goals		Ranked
	Overall	201-300.
SDG 2	Zero Hunger	93.
SDG 6	Clean Water and Sanitation	201-300.
SDG 8	Decent Work and Economic Growth	101-200.
SDG 9	Industry, Innovation and Infrastructure	401-600.
SDG 12	Responsible Consumption and Production	101-200.
SDG 15	Life on Land	101-200.
SDG 17	Partnerships for the Goals	58.

QS

Ranking Category	Ranked
Overall	531.
Social Impact	673.
Environmental Impact	531.
Governance	310.
Equality	472.
Knowledge Exchange	769.
Impact of Education	1 204
Employability and Opportunities	1 018
Health and Wellbeing	473.
Environmental Sustainability	744.
Environmental Education	595.
Environmental Research	644.

MATE's sustainability achievements are further affirmed by its remarkable progress in the Quacquarelli Symonds (QS) Sustainability Rankings. In the 2026 edition, which evaluated 2021 higher education institutions worldwide, MATE advanced more than 700 places, from the 1201+ band to the 531st position globally, securing a place among the top 26% of ranked universities. Within Hungary, MATE achieved the fourth-highest position among the fourteen institutions included in the ranking. This outstanding performance reflects the university's active implementation of its 2030 Strategy, emphasizing environmental and economic sustainability, responsible governance, and global impact.

Research Contribution of MATE

According to Scopus data, between 2021 and 2025 MATE researchers produced more than 5020 publications, with over 53% involving international collaboration and 28% national cooperation. While the overall publication growth rate has stabilized in recent years, so the share of articles published in Q1 and Q2 journals, a trend expected to persist. The field-weighted citation impact (FWCI), a key indicator of research influence, showed a temporary decline from 1.10 to 1.064etween 2021 and 2022, followed by a recovery to 1.35 by 2025. **Figure 3** illustrates the main research topics and clusters to which MATE's scholars have made significant contributions over this period.

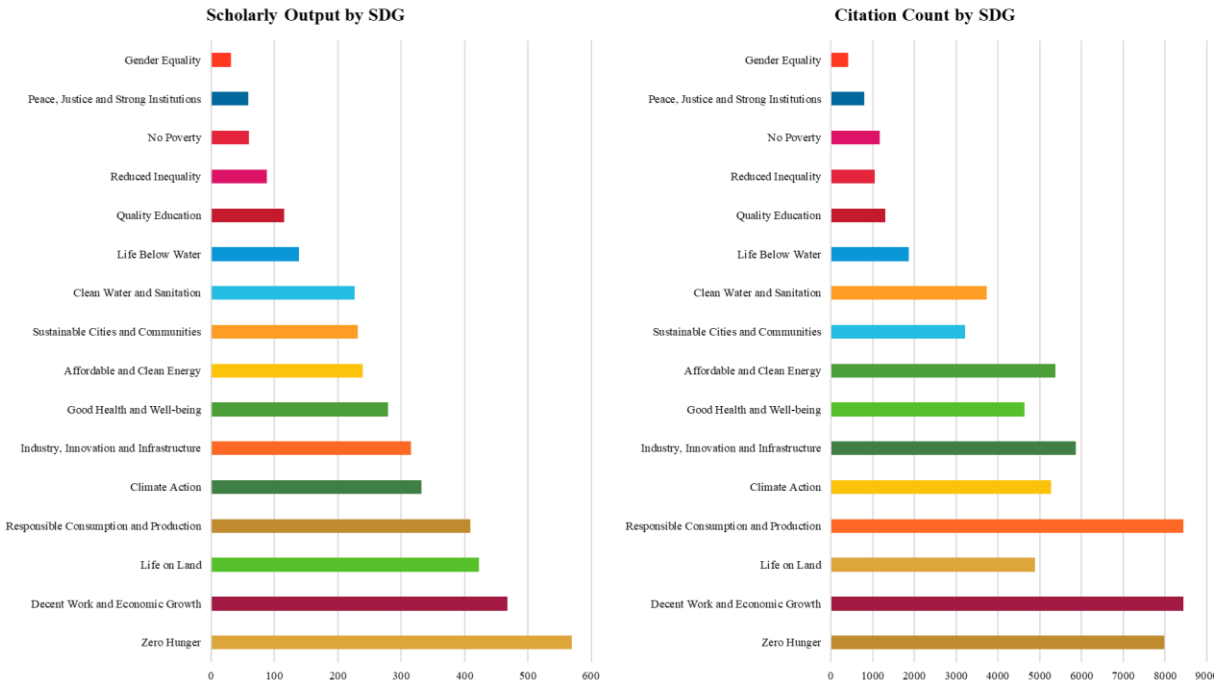


Figure 2. Publication performance of MATE between 2021 – 2025 (source: SciVal)

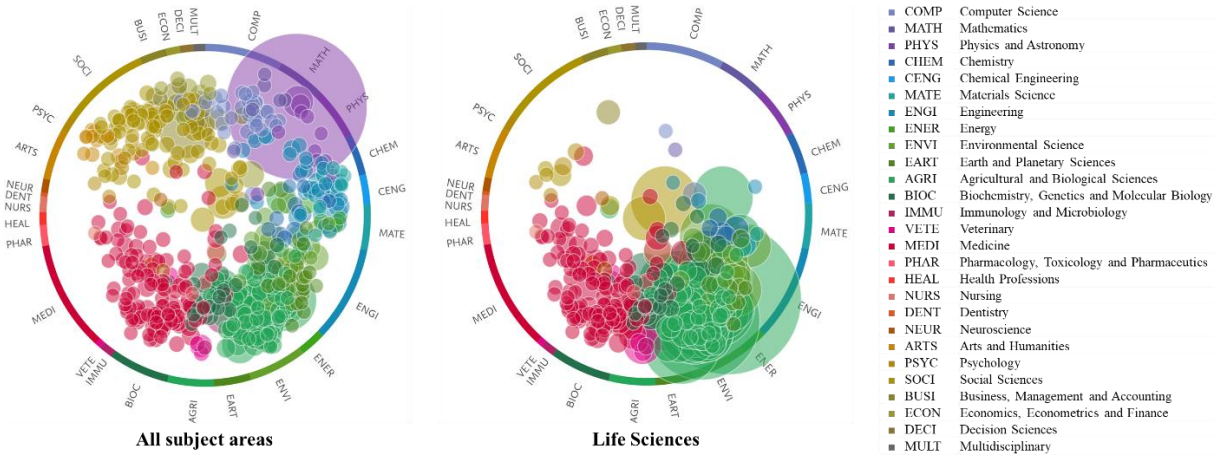


Figure 3. Elsevier ASJC categories to which MATE has contributed between 2021 – 2025 (source: SciVal)

SDG 1 No Poverty

Reducing poverty means more than raising incomes. It depends on secure livelihoods, fair access to financial services and support for people facing hardship. MATE contributes through research on economic participation and regional opportunity, and through practical support for people in need.

Key 2025 Research Contributions to SDG 1

Access to financial services, secure retirement incomes and sustainable livelihoods were central to our poverty-related research published in 2025. Our studies examined economic vulnerability at household, community and regional levels, identifying barriers to participation and options for more inclusive development.

Retirement security was one area of investigation. Our theoretical research showed why pension adjustment rules must be assessed against retirees' consumption needs and income inequality, alongside the financial sustainability of pension systems. Analysis of European Union pension systems identified multi-pillar structures, individual accounting and automatic adjustment mechanisms as features relevant to long-term resilience, offering insights for pension reform in Hungary.

Our regional development research examined how the concentration of economic activity in metropolitan centres can deepen inequalities of opportunity, exploring ways to strengthen connections with peripheral areas. Collaborative work on rural tourism in Indonesia developed a framework linking local capacity, community participation and equitable benefit distribution with sustainable livelihood development. Research in Ghaziabad, India, documented significantly poorer health among waste pickers than a comparison group, supporting recommendations for safer working conditions, healthcare access and stronger social protection.

Further collaborative reviews examined how decent work and inclusive economic growth relate to poverty reduction, and mapped the "Three Zero" framework connecting poverty, unemployment and net carbon emissions.

* **Closing gaps in financial participation**

A MATE-led review of 193 studies investigated the barriers shaping women's financial literacy in developing countries. It identified socio-cultural constraints, limited resources and low incomes as interconnected disadvantages affecting financial knowledge and decision-making, supporting gender-sensitive education and targeted interventions.

Our collaborative research in Indonesia brought a geographical perspective to financial inclusion. Analysis of responses from 654 people found urban–rural differences in how digital financial literacy related to financial technology adoption intentions and how government support related to service use. These findings support locally adapted financial services rather than uniform adoption strategies. A broader review identified financial illiteracy and fragmented regulation as persistent barriers, calling for financial institutions and policymakers to coordinate efforts beyond expanding access alone.

	No. of publications	13
SDG 1	Citations	141

Supporting Families and Communities

MATE provided food support valued at HUF 4.5 million for families in need. The initiative addressed economic hardship and food insecurity through direct, practical assistance. By helping households facing difficult circumstances secure access to food, the University contributed to reducing immediate vulnerability and strengthening community resilience. The support shows how a university can use its resources for the benefit of people beyond its own students and staff. It also reflects MATE's understanding of social responsibility as a practical commitment rather than a statement of intent. Poverty is not only a matter of income. It affects health, education and the ability to take part in community life, and timely help can ease some of that pressure. The initiative adds to MATE's wider contribution to a fairer and more supportive society, in which research and teaching are matched by direct action for those in need.

SDG 2 Zero Hunger

Ending hunger requires food systems that are productive, safe and resilient to climate pressure. As a university of agriculture and life sciences, MATE works across crop production, animal husbandry, food safety and rural development, and shares this knowledge with farmers, partners and the public.

Key 2025 Research Contributions to SDG 2

Sustainable production, climate resilience and access to nutritious food were central to our hunger-related research published in 2025. Our studies examined how farmers can maintain yields under changing environmental conditions, how innovation can support more efficient production, and how food systems can become more equitable and sustainable.

Climate change was a recurring concern. Research in post-Soviet Central Asia found that while higher temperatures increased grain yields and food production, drought significantly reduced both, while also contributing to economic instability and migration. The findings highlighted the need for adaptive strategies that respond to the specific pressures facing agricultural regions. Collaborative research also examined how climate-related stresses affect crop reproduction, identifying genetics, breeding technologies, biotechnological innovation and sustainable agronomic practices as complementary routes towards more resilient crops.

Our research on sustainable agriculture examined how novel practices and technologies can address environmental, economic and social challenges. Studies of precision agriculture in the Visegrád countries found differences in the adoption of drones, sensors and robots across organic farming systems, while broader reviews identified policy support and education as important conditions for wider uptake. International collaborations explored genetic diversity in sorghum breeding lines, sustainable sweet-potato production and alternative approaches to crop protection.

* **Making conservation farming viable**

A twenty-year experiment compared conservation tillage with conventional ploughing, providing long-term evidence on the economics of changing farming practices. Although profitability initially declined during the transition, conservation tillage delivered 13% higher profit overall, supported by lower operating costs and higher gross income. The findings demonstrate why farmers and policymakers need a long-term perspective when assessing the viability of more sustainable production methods, particularly where short-term costs may discourage adoption.

	No. of publications	166
SDG 2	Citations	1015

Sharing Knowledge for Resilient Food Systems

* A solution for using mycotoxin-contaminated maize

MATE researchers found a way to make use of maize contaminated with mycotoxins, naturally occurring toxins produced by moulds that can compromise crop safety and value. Contamination can lead to significant losses for producers and wasted food resources, so the research addresses a real

challenge in agriculture. By exploring how affected maize can be handled and used, the work supports both food safety and more efficient use of agricultural production. It also shows how scientific innovation can respond to practical problems faced by farmers and the food sector. As climate variability increases pressure on crops, solutions that reduce losses without compromising safety become more important. The research contributes to more resilient food systems and reflects MATE's commitment to applying scientific knowledge where it can strengthen the security and sustainability of food production.

* The KÁN University Days 2025

The KÁN University Days brought MATE's research, education and innovation to a wide public audience. The event gave visitors, students, producers and families the chance to meet researchers, see practical demonstrations and learn how scientific work connects with farming, food and rural life. Public events like this help turn specialist knowledge into something accessible, encouraging curiosity and a better understanding of where food comes from and what is needed to produce it sustainably. They also strengthen links between the University, agricultural communities and future students. For food security, shared knowledge is as important as technology: farmers, young people and consumers all benefit from understanding resilient production, innovation and responsible resource use. The KÁN University Days show MATE's commitment to opening its expertise to society and inspiring the next generation to work in agriculture and food science.

* FAO strengthens agricultural resilience in Tajikistan through integrated pest-management training

MATE contributed to FAO-supported training in integrated pest management in Tajikistan, helping to strengthen agricultural resilience through shared expertise. Integrated pest management combines complementary methods to protect crops while limiting unnecessary reliance on chemical inputs, making it relevant to both productivity and environmental care. By working with international partners and local stakeholders, MATE supported the transfer of practical knowledge to people responsible for protecting crops and sustaining production. This kind of capacity building matters because food security depends not only on technology, but on the skills of the people who use it. The activity also illustrates how a university's agricultural expertise can serve communities beyond Hungary. Through training and cooperation, MATE helps equip farmers and agricultural professionals to manage pest pressures more sustainably and to protect the crops on which livelihoods and food supplies depend.

SDG 3 Good Health & Well-being

Good health is shaped by the environments people live in, the food they eat and the conditions in which they work. MATE approaches health across disciplines, linking human, animal and environmental well-being through research and education.

Key 2025 Research Contributions to SDG 3

Environmental exposure, safer working conditions and nutrition were central to our health-related research published in 2025. Our studies examined how people's health is shaped by the environments in which they live and work, and how prevention, education and access to services can reduce avoidable harm.

Water and air quality formed important areas of investigation. Collaborative research assessed contamination in Hungarian and international water systems, while a review of European educational buildings identified ventilation, mould and chemical pollutants as priorities for healthier learning environments. Research on air pollution examined how exposure can be monitored and predicted more effectively, supporting public-health management in urban settings.

Our research also addressed occupational health and social vulnerability. Studies among waste pickers in India and landfill workers in Indonesia documented poorer health and unsafe working conditions, reinforcing the need for protective equipment, healthcare access and social protection. Research among tomato farmers in Kenya examined why awareness of pesticide risks does not always translate into safer practices, identifying the cost of protective equipment, limited training and weak enforcement as barriers requiring coordinated action.

Nutrition research connected health with sustainable diets. A review of the NOVA food-processing classification examined how processing can be assessed alongside nutritional quality, affordability and environmental impact. Other studies explored food safety, alternative protein sources and the nutritional value of underused crops, linking dietary health with sustainable food systems.

* **Protecting agricultural workers**

Research among tomato farmers in Kenya examined why pesticide awareness does not necessarily translate into safe working practices. The findings identified unaffordable protective equipment, limited training and weak regulatory enforcement as barriers requiring coordinated action. Complementary studies among landfill workers in Indonesia and waste pickers in India documented health concerns, strengthening the case for exposure prevention, accessible healthcare and social protection.

	No. of publications	Citations
SDG 3	53	420

Promoting Health Through Education and Engagement

* Spring One Health Day

Spring One Health Day brought attention to the connection between human, animal and environmental health. The One Health approach recognises that these areas are closely linked: the condition of ecosystems, the health of animals and the well-being of people influence one another. By creating a space to discuss this relationship, MATE supported understanding of health as an issue that crosses disciplines and professions. The event is particularly fitting for a university with strengths in agriculture, veterinary-related fields, life sciences and environmental research, where practical decisions about land, animals and food can affect public health. It also shows how education and dialogue can help prepare students and professionals for complex challenges that no single field can solve alone. Through One Health Day, MATE contributes to a broader and more preventive view of well-being, grounded in cooperation and shared responsibility.

* "For Our Healthy World" MATE Open University in Kaposvár

The "For Our Healthy World" MATE Open University in Kaposvár brought health-related knowledge to the public beyond the University's own classrooms. Open university programmes make research and expertise accessible to interested residents, helping people better understand health, prevention and the factors that shape well-being. Their value lies not only in sharing information, but in building a stronger connection between the University and the community it serves. By offering this opportunity in Kaposvár, MATE supported lifelong learning and local engagement, showing that universities can contribute to public health through education as well as research. The title of the series also reflects the link between personal health and the health of the wider environment. This approach encourages a more informed and engaged community and reinforces MATE's role as a regional centre of knowledge.

SDG 4 Quality Education

Quality education prepares people for work, citizenship and lifelong learning. MATE researches how teaching and learning can be improved, and works to strengthen the learning experience for students, teachers and professionals.

Key 2025 Research Contributions to SDG 4

Inclusive teaching, digital learning and sustainability education were central to our education research published in 2025. Our studies examined how learners' needs can be better recognised, how teachers can be supported, and how education can prepare people for changing environmental, technological and economic conditions.

Digital learning was a key focus. Research examined online reading strategies, digital music education and the relationship between technology use, motivation and academic performance. While the studies identified opportunities for more engaging and personalised learning, they also highlighted limitations in the available evidence and the importance of considering learners' circumstances. Research on environmental attitudes among students in Kosovo identified gaps in environmental knowledge, supporting stronger sustainability education.

Our research also examined equity and teacher development. Studies of ADHD knowledge among Hungarian teachers, educational equity in Ghana and shared leadership in Kenyan teacher education highlighted the importance of responding to differing learner needs and supporting educators. Research on Ghana's free secondary-education policy showed that greater access alone does not ensure equity, pointing to the need to understand the barriers that continue to shape participation and outcomes.

* **Supporting teachers' digital development**

Our research on Hungarian agricultural vocational teachers examined their digital skills, attitudes and professional development needs. Teachers expressed more positive views of their competence than anticipated, but infrastructure gaps and unmet training needs remained. Their demand for free, subject-specific workshops on classroom applications pointed towards professional development grounded in teaching practice and meaningful self-reflection.

	No. of publications	Citations
SDG 4	35	210

Innovating Teaching and Learning

* Student feedback shapes teaching: MATE launches the OMHV

MATE has launched the OMHV, a student feedback process that helps shape the development of teaching. The initiative recognises students as key partners in improving education by giving them a structured way to share their experiences of courses and instruction. When feedback is collected consistently and taken seriously, it can help identify what works well, highlight areas for improvement and support more responsive teaching. The launch of the OMHV reflects MATE's commitment to quality in education and to a culture of continuous improvement. It also encourages dialogue between students and instructors, which can strengthen trust and engagement across the University. Listening to students

is essential for ensuring that teaching remains relevant, inclusive and effective. Through this initiative, MATE reinforces its aim of providing learning experiences that meet the needs of today's students and prepare them for professional life.

* Amanda, the AI teaching assistant: a pioneering educational innovation at MATE

MATE has introduced Amanda, an AI teaching assistant, as an innovation in higher education. The project explores how artificial intelligence can support teaching and learning by offering additional help for instructors and students. As digital tools become part of everyday study and work, universities have a responsibility to understand how they can be used effectively, responsibly and in ways that support educational quality. Amanda reflects MATE's willingness to experiment with new approaches while keeping teaching goals at the centre. The initiative also gives the University the chance to learn from practice and to develop informed ideas about the role of AI in education. By piloting such innovations, MATE helps prepare its community for a changing educational environment and contributes to wider discussion on how technology can enhance, rather than replace, good teaching

SDG 5 Gender Equality

Gender equality requires fair access to education, careers and decision-making. MATE's research examines the barriers women can face in education, work and economic life, and the University supports an inclusive academic community.

Key 2025 Research Contributions to SDG 5

Women's opportunities in employment, entrepreneurship, education and financial decision-making were central to our gender-equality research published in 2025. Our studies examined how formal participation can coexist with persistent disadvantages, and why effective responses need to address institutional practices as well as individual skills.

Research in Hungary, Czechia and Slovenia investigated gender barriers in agriculture and life sciences. Despite relatively balanced participation, women reported disadvantages in recruitment, promotion and work–life balance, alongside challenges associated with laboratory and fieldwork. The findings supported discipline-sensitive gender-equality plans that respond to everyday institutional practices rather than focusing only on numerical representation.

Our research also examined economic participation. A Hungarian pilot study linked supportive organisational cultures with stronger perceived managerial power, while identifying discrimination, insecurity and family-related expectations as obstacles. Comparative research across the Visegrád countries identified gender-specific difficulties in finding suitable employment, including language and mobility barriers in particular national contexts. Studies of women's financial literacy in developing countries connected gender inequality with access to economic participation, supporting targeted and context-sensitive interventions.

* **Equality beyond balanced participation**

Research involving universities in Hungary, Czechia and Slovenia investigated gender barriers in agriculture and life sciences through nine focus groups involving 82 participants. Despite relatively balanced participation, women reported disadvantages in recruitment, promotion and work–life balance, alongside challenges associated with laboratory and fieldwork. The findings supported discipline-sensitive gender-equality plans that address everyday institutional practices rather than numerical representation alone.

	No. of publications	Citations
SDG 5	12	72

Advancing Opportunity and Representation

* Outstanding women's careers: MATE Academy closing event on gender equality

The closing event of the MATE Academy focused on women's careers and gender equality, giving visibility to the achievements of women and to the conditions that support them. Examples of successful careers can inspire students and early-career professionals, showing that progression in research, education and public life is achievable while also acknowledging that barriers can remain. By devoting

an event to the subject, MATE helped keep equal opportunity on the institutional agenda and encouraged open conversation about experience, support and leadership. Gender equality is strengthened when universities create spaces for role models, mentoring and shared reflection, and when these discussions lead to practical attention to career development. The event reflects MATE's commitment to an inclusive academic community in which talent can develop regardless of gender, and in which diverse perspectives contribute to stronger education and research.

* Girls' Day at MATE

Girls' Day at MATE invited young women to discover the University and the opportunities available in higher education, science, agriculture and related fields. Early encounters with universities can make a lasting difference to how young people see their own options, especially in areas where women have historically been less visible. By giving participants, a chance to experience the University and meet people working in these fields, MATE helped widen perceptions of who can pursue scientific and technical careers. Programmes of this kind also support the long-term goal of a more balanced and diverse future workforce. They show young people that fields such as agriculture, food science and environmental research offer meaningful and varied careers. Girls' Day expresses MATE's commitment to equal opportunity and to encouraging girls and young women to see themselves as future students, researchers and professionals.

SDG 6 Clean Water & Sanitation

Safe water and sound water management underpin health, food production and healthy ecosystems. MATE's research addresses water quality, efficient use of water in agriculture and treatment approaches suited to different settings.

Key 2025 Research Contributions to SDG 6

Water quality, alternative supplies and efficient agricultural water use were central to our water research published in 2025. Our studies examined how contamination can be detected and managed, how water can be treated in settings with limited infrastructure, and how agricultural production can use water more sustainably.

Water-quality research combined chemical analysis, predictive modelling and health-risk assessment to investigate groundwater and surface-water systems in Hungary and internationally. Other studies examined nutrient recovery from sanitation systems, sewage-sludge compost and freshwater conservation, connecting water management with soil health, nutrient cycling and pollution prevention.

Our research also examined water in agriculture. Experiments explored aquaculture-effluent reuse, targeted irrigation and crop responses to water scarcity. Research on lakes in northern Tanzania used remote sensing and geographic information systems to examine how drought, land-use change and human activity affect water chemistry. The findings showed how environmental pressures and human activity interact in vulnerable lake systems, supporting more informed conservation and management strategies.

* **Harnessing sunlight for desalination**

Our researchers developed and experimentally evaluated a solar-distillation prototype combining a parabolic-trough concentrator, photovoltaic technology and automatic sun tracking. Designed with isolated settings in mind, the system investigated how concentrated solar heat could support water distillation using relatively inexpensive materials. Related modelling examined collector geometry and heat transfer, providing further design knowledge for solar-powered water treatment rather than evidence of an already established community water service.

	No. of publications	Citations
SDG 6	41	324

SDG 7 Affordable & Clean Energy

The Hungarian University of Agriculture and Life Sciences is dedicated to the principles of Sustainable Development Goal 7, "Affordable and Clean Energy." We understand that access to clean and affordable energy sources is essential for sustainable development, agricultural practices, and environmental protection. Our institution focuses on researching and promoting energy-efficient technologies, renewable energy sources, and sustainable agricultural practices. We engage in education, innovation, and the sharing of knowledge to tackle challenges related to energy access, security, and sustainability. By advancing research and education in agriculture, environmental science, and renewable energy, we aim to contribute to a future where clean and affordable energy is accessible to all, fostering both economic growth and environmental stewardship. We view SDG 7 as a foundational element for achieving a more sustainable and prosperous world and are committed to playing an active role in realizing this goal.

Key 2025 Research Contributions to SDG 7

Solar technologies, renewable-energy forecasting and energy-efficient food production were central to our clean-energy research published in 2025. Our studies examined how renewable energy can be generated, managed and used more effectively, particularly in settings where reliable energy access remains a challenge.

Solar research investigated photovoltaic–thermal systems, cooling techniques and transparent thermal materials. These studies examined how design choices affect electricity generation, useful heat and overall system performance. Research in Eritrea developed solar-generation forecasting methods for settings with limited operational data, supporting more reliable planning and use of solar energy. Indoor-farming research explored sensor-controlled lighting, connecting renewable technologies with more resource-efficient food production.

Our research also examined the wider energy transition. Publications investigated sustainable investment, battery technologies, biological approaches to biomass conversion and the relationship between productivity, circular bioeconomy and climate change. Research on circular bioeconomy identified soil and water management as central links between agricultural productivity, climate change and resource efficiency.

* **Improving solar-powered food preservation**

Experimental research showed that perforated fins in double-pass solar air collectors improved heat transfer and efficiency compared with a smooth collector design. Related studies evaluated solar drying of apples and Nile tilapia, combining performance measurements with drying models and, for tilapia, environmental and economic assessments. These contributions provide practical engineering evidence for renewable-heat applications in food processing, while wider feasibility remains dependent on operating conditions and implementation costs.

	No. of publications	Citations
SDG 7	47	347

SDG 8 Decent Work & Economic Growth

Sustainable growth depends on fair working conditions, productive enterprises and skills that match opportunity. MATE contributes through research on entrepreneurship, employment and rural economies, and by supporting researchers and students in their careers.

Key 2025 Research Contributions to SDG 8

Entrepreneurship, sustainable livelihoods and safer working conditions were central to our economic-growth research published in 2025. Our studies examined how businesses and communities can create economic value while protecting workers, supporting inclusion and reducing environmental harm.

Research on entrepreneurship examined digital enterprise ecosystems, sustainability-oriented entrepreneurship education and the resources businesses need to adopt environmentally responsible practices. Regional and tourism research examined uneven development, community participation and recovery after the pandemic. A study of Romanian accommodation enterprises showed that recovering turnover did not necessarily restore employment, highlighting why economic progress should be assessed beyond revenue alone.

Our research on sustainable tourism examined how local participation, trust and equitable benefit-sharing can support livelihoods and quality of life. Studies in Indonesia and elsewhere identified local capacity, participatory planning and fair distribution of benefits as important conditions for tourism that contributes to sustainable development rather than reinforcing existing inequalities.

- **Putting safety alongside productivity**

Agricultural worker protection was a distinct focus. Research in Kenya identified equipment costs, training gaps and weak enforcement as barriers to safer pesticide use. A wider review found that agricultural ergonomics research remains concentrated in industrialised countries, leaving regions heavily dependent on manual farming underrepresented. The findings called for locally relevant research and stronger integration of worker health into food-security and agricultural-development strategies.

	No. of publications	Citations
SDG 8	120	825

Supporting Careers and Economic Opportunity

- MATE receives the HR Excellence in Research Award

MATE has been awarded the HR Excellence in Research recognition, an acknowledgement of its commitment to supportive and transparent conditions for researchers. The distinction is linked to principles that cover fair recruitment, working conditions and professional development, and it signals that an institution is working to align its practices with European expectations for research careers. For MATE, the recognition supports efforts to attract and retain talented researchers and to provide an environment in which they can develop. Good working conditions are essential for high-quality science, and they also contribute to the broader aim of decent work in the knowledge economy. The award does

not mark an endpoint, but a framework for continued improvement. It reflects MATE's ambition to be a responsible employer and an attractive place for researchers at every stage of their careers.

* Career Day and cooperative practical fair at the Szent István Campus

The Career Day and cooperative practical fair at the Szent István Campus brought students into contact with employers and professional opportunities. Events of this kind help students understand the labour market, explore possible career paths and build connections that may lead to internships or employment. For employers, they offer the chance to meet motivated future professionals and to communicate what skills and experience they value. The cooperation between the University and the business sector also helps keep education connected to practical needs. By organising the fair, MATE supported the transition from study to work and showed its commitment to employability. Strong links between education and the economy contribute to decent work, because they help graduates find meaningful opportunities and help organisations find the talent they need. The event reflects the University's role as a partner in regional and national economic development.

SDG 9 Industry, Innovation and Infrastructure

Innovation turns knowledge into practical solutions, and it relies on strong infrastructure and cooperation between research and industry. MATE develops technologies and ideas for agriculture, food and the environment, and invests in the facilities that support them.

Key 2025 Research Contributions to SDG 9

Digital tools, engineering innovation and more resource-efficient production were central to our industry and infrastructure research published in 2025. Our studies examined how technology can improve productivity, transparency and sustainability across agriculture, manufacturing and the built environment.

Research on precision agriculture examined how drones, sensors and robots are being adopted in organic farming systems across the Visegrád countries. The findings identified national differences in technology use, while highlighting the potential of digital tools to improve efficiency and environmental outcomes. Other research examined manufacturing decision-support methods, lean production and ultrasound-assisted meat curing, with experimental work showing faster salt diffusion during curing.

Our research also explored innovation in food systems and infrastructure. A proposed traceability framework combined rapid quality assessment with connected sensors, radio-frequency identification and blockchain-based documentation to link information on origin, quality and production history. Other studies examined solar technologies, electric-vehicle preferences and climate-responsive green infrastructure, connecting technological innovation with sustainability goals

* **Tracing food from farm to fork**

Our researchers proposed an integrated traceability framework using certified Hungarian sweet-potato production as a model. It combined rapid, non-destructive quality assessment with connected sensors, radio-frequency identification and blockchain-based documentation to link information on origin, quality and production history. The study established a technical foundation for future applications intended to strengthen transparency and trust; it did not demonstrate an already deployed commercial supply-chain system.

Publication count	89
Citation count	821

Strengthening Innovation and Research Infrastructure

* Proof of Concept innovation-funding programme

MATE's Proof of Concept innovation-funding programme supports researchers in taking promising ideas closer to practical application. Many research results show potential, but need further development, testing or demonstration before they can attract the interest of partners or investors. Early-stage funding helps bridge this gap, giving research teams the resources to validate their concepts and explore how they might be used. For the University, the programme strengthens the link between scientific discovery and real-world solutions and encourages a culture in which innovation is valued alongside publication. It also supports cooperation with industry and the wider economy by helping to prepare projects for the next stage. Through this programme, MATE reinforces its role as a source of innovation in agriculture, food, environment and life sciences, and demonstrates its commitment to turning knowledge into practical benefit.

* The renovated Szarvas Knowledge Centre has been handed over

The renovated Szarvas Knowledge Centre has been handed over, giving MATE an upgraded facility for education, research and knowledge sharing. Quality infrastructure is a foundation for innovation: modern spaces and equipment can improve teaching, support scientific work and make it easier to collaborate with partners and the local community. The renovation reflects investment in the regional presence of the University and in the long-term development of Szarvas as a place for learning and research. It also supports the exchange of knowledge between the University, students, professionals and residents. Well-designed facilities help attract people, encourage cooperation and create the conditions for new ideas to develop. The handover of the centre shows MATE's commitment to strengthening the physical and institutional capacity needed to deliver education and research that responds to the needs of agriculture, rural development and society.

SDG 10 Reduced Inequality

Opportunity should not depend on where a person lives or the circumstances they were born into. MATE's research looks at regional disadvantage, access to services and rural development, and the University promotes inclusion in its own community.

Key 2025 Research Contributions to SDG 10

Regional disadvantage, unequal access to services and barriers to participation were central to our inequality research published in 2025. Our studies examined how economic, social and spatial factors interact to shape people's opportunities, and how policy can respond to these overlapping forms of disadvantage.

Our regional development research examined how the concentration of economic activity in metropolitan centres can deepen inequalities of opportunity. Research explored ways to strengthen connections between central and peripheral areas, while studies of talent retention in an underdeveloped Hungarian region identified limited local opportunities and urban pull factors as barriers to retaining skilled people. The findings supported investment in education, innovation ecosystems and targeted regional policies.

Our research also examined inequality in access to education, employment and public services. Work on Ghana's free secondary-education policy showed that greater access alone does not ensure equity. Studies of waste pickers and conflict-affected households highlighted overlapping health, livelihood and social-protection needs. Research on urban green spaces identified disparities in car-based access to large green spaces, supporting planning that considers location, accessibility and the circumstances of disadvantaged residents

* **Addressing inequality through place**

Our urban and regional research investigated how development can distribute opportunities unevenly. Work on metropolitan centre–periphery relationships explored stronger connections between central and peripheral areas, while research in Johannesburg examined displacement and housing affordability during gentrification. Analysis in Erbil and Sulaimaniyah identified disparities in car-based access to large green spaces, supporting planning that considers location, accessibility and the circumstances of disadvantaged residents.

Publication count	21
Citation count	104

Widening Participation and Opportunity

* Rural areas, youth, future

“Rural areas, youth, future” addressed the opportunities and challenges that shape the prospects of young people in rural communities. Where a person grows up can influence access to education, employment, services and social life, so the question of how rural areas can offer attractive futures is closely linked to fairness and inclusion. By bringing attention to this theme, MATE reflected its role as a university with deep roots in agriculture and rural development. Young people are central to the future of the countryside, and their ideas, skills and aspirations matter for local economies and communities. Discussion of rural youth can help identify what support is needed to keep opportunities open and to make rural life a realistic and rewarding choice. The initiative expresses MATE's commitment to supporting balanced regional development and to widening opportunity beyond urban centres.

* A volunteer point has opened at MATE

MATE has opened a volunteer point, creating a place where students and staff can find opportunities to contribute to their communities. Volunteering encourages participation, solidarity and civic responsibility, and it can connect people with causes and organisations that need support. For students, it offers a way to gain experience, develop skills and build relationships beyond the classroom. For the wider community, it can provide practical help and strengthen links with the University. A dedicated point makes it easier to coordinate opportunities, share information and welcome people who want to get involved. By supporting volunteering, MATE promotes an inclusive and caring campus culture in which everyone can take part in improving the lives of others. The initiative reflects the University's belief that education is not only about knowledge, but also about responsibility towards society.

SDG 11 Sustainable Cities and Communities

Sustainable communities connect people, places and heritage, and they depend on a balance between urban and rural development. MATE contributes through research on landscapes, green spaces and rural development, and by caring for cultural and agricultural heritage.

Key 2025 Research Contributions to SDG 11

Green space, climate resilience and residents' everyday needs were central to our sustainable-cities research published in 2025. Our studies examined how urban environments can support health, biodiversity and social life while responding to climate-related pressures.

Research on Budapest's institutional gardens used microclimate simulations to investigate the cooling potential of hospital gardens and cemeteries. These spaces offered opportunities to broaden urban climate-adaptation planning beyond conventional parks. Complementary studies mapped carbon storage in residential green spaces and examined how vegetation responds to local climate and urban form, supporting planting strategies tailored to specific settings rather than generic species lists.

Our research also examined how residents experience urban environments. Participatory research in Vác revealed differences between officially designated green infrastructure and places valued by residents. Other work investigated unequal green-space provision in Damascus, developed a typology of Hungarian urban squares and examined tourism pressures on heritage destinations. Research on urban stormwater management explored nature-based solutions, while studies of urban trees examined how species selection affects cooling, carbon uptake and long-term resilience in arid cities.

* **Finding overlooked cooling opportunities**

Research on Budapest's institutional gardens used microclimate simulations to investigate the cooling potential of hospital gardens and cemeteries. These spaces offered opportunities to broaden urban climate-adaptation planning beyond conventional parks. Complementary studies mapped carbon storage in residential green spaces and examined how vegetation responds to local climate and urban form, supporting planting strategies tailored to specific settings rather than generic species lists.

Publication count	53
Citation count	175

Connecting Communities, Heritage and Places

* The development of cities is unthinkable without the development of rural areas

This message highlights the close relationship between urban and rural development. Cities depend on rural areas for food, natural resources, landscapes and the people who sustain agricultural and regional economies, while rural communities rely on connections to markets, services and knowledge. Treating the two as separate can lead to unbalanced development, so sustainable communities require approaches that consider them together. By emphasising this interdependence, MATE draws on its expertise in agriculture, environment and rural development to contribute to the discussion on how places can thrive. The message also supports the idea that strong rural communities' benefit everyone, by protecting landscapes, maintaining food systems and preserving local culture. It reflects MATE's role as a university that connects science, rural life and public policy in the pursuit of more balanced and resilient communities.

* The Hungarian Agricultural Museum moves to MATE

The Hungarian Agricultural Museum is moving to MATE, bringing together an important collection of agricultural heritage and a university devoted to agricultural and life sciences. The museum preserves the history of farming, rural life and food production, and its presence at the University creates new opportunities for education, research and public engagement. Students can learn from the past while exploring the challenges of the future, and visitors can better understand how agriculture has shaped communities and landscapes. Protecting and sharing cultural heritage also strengthens community identity and supports sustainable development by keeping traditional knowledge visible. The move reflects MATE's commitment to the heritage of its field and to making it accessible to the wider public. It adds a cultural dimension to the University's mission, linking science, history and the life of local and national communities.

SDG 12 Responsible Consumption and Production

Using resources responsibly means producing efficiently, wasting less and keeping materials in use for longer. MATE researches sustainable agricultural production and food waste, and encourages responsible habits in everyday campus life.

Key 2025 Research Contributions to SDG 12

Waste prevention, efficient farming and nutrient recovery were central to our responsible-consumption research published in 2025. Our studies examined how households, farms and businesses can reduce waste, use resources more efficiently and make production systems more sustainable.

Research involving 282 Hungarian households combined diary-supported waste measurements with questionnaires to investigate opportunities for reducing food waste. Most households underestimated their waste, yet many believed they could reduce it further. The findings highlighted a gap between perceived and measured behaviour and the importance of distinguishing avoidable edible waste from unavoidable residues.

Our agricultural research examined how production can become more resource-efficient. Studies investigated precision agriculture, site-specific planting and the long-term economics of conservation tillage. Collaborative research on sewage-sludge compost examined its effects on soil health in acidic sandy soils, reporting improvements in soil properties and microbial activity under the tested conditions. Other publications explored sustainable consumption, circular food-service practices and the environmental trade-offs surrounding emerging battery technologies.

* **Making household food waste visible**

Research involving 282 Hungarian households combined diary-supported waste measurements with questionnaires to investigate opportunities for further reduction. Most households underestimated their waste, yet many believed they could reduce it further. The findings highlighted a gap between perceived and measured behaviour and the importance of distinguishing avoidable edible waste from unavoidable residues. This evidence can inform initiatives that help households turn intentions into practical changes.

Publication count	112
Citation count	843

Promoting Circular and Responsible Practices

* Second Life for Electronics: Conscious Tech Week at MATE

As part of Conscious Tech Week, the “Second Life for Electronics” initiative encouraged the reuse and responsible handling of electronic devices at MATE. Electronic waste is one of the fastest-growing waste challenges, and extending the life of devices can reduce the demand for new products and the resources needed to make them. By drawing attention to reuse, the initiative helped students and staff think about how they use, replace and dispose of technology. Awareness is an important first step: when people understand the impact of their choices, they are better placed to adopt more sustainable habits. The event also shows how everyday campus life can become a practical learning space for the circular economy. Through initiatives like this, MATE promotes responsible consumption and encourages its community to see products as valuable resources rather than short-lived items.

* Sustainability Day and clothes swap in Gödöllő

The Sustainability Day and clothes swap in Gödöllő gave the MATE community a simple and practical way to put responsible consumption into action. Clothes swaps allow people to give unwanted items a second life and to find something new without buying new products, reducing waste and the demand for resource-intensive production. The event also created a welcoming setting for conversation about sustainable lifestyles, showing that small, everyday choices can contribute to larger environmental goals. By combining a day of sustainability activities with a hands-on opportunity to reuse clothing, MATE made the idea of circular consumption accessible and engaging. Such initiatives help build habits and norms within a community, and they encourage students and staff to look at fashion, shopping and waste more thoughtfully. The event reflects the University's commitment to making sustainability visible in daily life.

SDG 13 Climate Action

Climate change affects agriculture, ecosystems and communities, and it demands both adaptation and informed decisions. MATE's research supports climate resilience in farming and landscapes and builds the scientific knowledge needed to prepare for change.

Key 2025 Research Contributions to SDG 13

Climate adaptation, carbon monitoring and resilient production systems were central to our climate research published in 2025. Our studies examined how communities, farmers and institutions can prepare for climate-related risks while reducing pressure on natural resources.

Our agricultural research examined how rising temperatures, changing rainfall and extreme events disrupt nutrient cycles and crop productivity. It identified integrated nutrient management, precision application, biofertilizers and improved decision support as approaches to strengthen efficiency and resilience. Complementary research across six European countries examined conservation tillage, emphasising that successful adoption depends on farmers' expectations, knowledge and practical circumstances as well as scientific evidence.

Our research also examined climate risks beyond agriculture. Community-focused studies investigated adaptation barriers in rural Kosovo and nature-based stormwater management in Nagykovácsi. Research on climate change and food availability in Central Asia showed how drought can reduce yields and food production while increasing economic instability and migration. Further work examined climate-oriented banking and emerging food-safety risks, connecting environmental change with financial capacity and monitoring needs

* **Adapting crop nutrition to change**

A systematic review examined how rising temperatures, changing rainfall and extreme events disrupt nutrient cycles and crop productivity. It identified integrated nutrient management, precision application, biofertilizers and improved decision support as approaches to strengthen efficiency and resilience. Complementary research across six European countries examined conservation tillage, emphasising that successful adoption depends on farmers' expectations, knowledge and practical circumstances as well as scientific evidence.

Publication count	93
Citation count	671

Building Climate Knowledge and Resilience

* Climate resilience in food systems

Climate change is placing growing pressure on the systems that produce and deliver food, from changing rainfall and temperature patterns to more frequent extreme events. “Climate resilience in food systems” addresses how agriculture and food supply can prepare for and adapt to these challenges. For MATE, this theme sits at the heart of its expertise, connecting research in crop production, soil, water, animal husbandry and rural development. Resilient food systems depend on knowledge, innovation and cooperation among scientists, farmers, policymakers and businesses. By bringing attention to this subject, MATE contributes to a better understanding of how food production can continue to meet society's needs while adapting to a changing climate. The theme also reflects the University's commitment to practical solutions that help protect livelihoods, support sustainable land use and strengthen long-term food security.

* National Climate and Landscape Research Centre established in Karcag

The establishment of the National Climate and Landscape Research Centre in Karcag creates a new focus for research on how climate and landscapes interact. Landscapes shape agriculture, water, biodiversity and rural communities, and they are also affected by climate change, so understanding both together is essential for effective adaptation. A dedicated centre can bring researchers and partners together, support long-term observation and help translate scientific findings into guidance for land managers and decision-makers. MATE's involvement reflects its expertise in agriculture and environmental sciences and its role in strengthening national research capacity. The centre also strengthens the presence of scientific work in the region, offering opportunities for cooperation with local stakeholders. Through its contribution to this centre, MATE supports evidence-based responses to climate challenges and the development of more resilient landscapes and communities.

SDG 14 Life Below Water

Healthy aquatic ecosystems support food, livelihoods and biodiversity. MATE's research in aquaculture and freshwater systems examines how water-based production and conservation can be made more sustainable.

Key 2025 Research Contributions to SDG 14

Marine sustainability, freshwater conservation and responsible aquaculture were central to our life-below-water research published in 2025. Our studies examined how aquatic ecosystems can be protected while supporting livelihoods, food production and tourism.

Research on Indonesian marine tourism identified inadequate destination management, limited innovation and low human-resource capacity as barriers to a sustainable blue economy. The findings supported cooperative approaches involving public and private stakeholders to develop tourism policies that protect marine ecosystems while supporting local livelihoods. Research on Bangladeshi fishing communities and other coastal contexts examined the social and environmental pressures shaping aquatic livelihoods.

Our aquaculture research examined how fish production can become more sustainable. Experimental studies investigated alternative feed ingredients, including black soldier fly larvae oil and mealworms reared on contaminated maize. The findings showed potential for reducing reliance on conventional feed resources, while also demonstrating the importance of safety controls across circular feed systems. Freshwater research examined fish health, pollution from lost fishing gear and traditional conservation practices.

* **Testing alternative aquaculture feeds**

Experimental research investigated black soldier fly larvae oil as a substitute for fish and vegetable oils in African catfish hybrid diets. Growth and nutrient utilisation remained comparable across treatments, although fatty-acid changes revealed nutritional trade-offs. Related work tested mealworms reared on aflatoxin-contaminated maize as a carp-feed ingredient: measured fish responses showed no significant adverse effects, but toxicity in highly contaminated rearing residues demonstrated why circular feed systems require safeguards across all by-products.

Publication count	29
Citation count	181

SDG 15 Life on Land

Protecting life on land means conserving biodiversity, managing invasive species and caring for soils and landscapes. MATE's research spans ecology, plant and animal sciences, and conservation, and the University looks after botanical collections of lasting value.

Key 2025 Research Contributions to SDG 15

Species conservation, invasive-species management and soil health were central to our life-on-land research published in 2025. Our studies examined how ecosystems can be protected, restored and managed in ways that sustain biodiversity alongside human activity.

Our grassland research followed sand-grassland restoration in Hungary's Kiskunság region for 17–25 years. Sowing native species accelerated the decline of annual invasive plants, but perennial invasive species increased despite the treatments tested. The findings demonstrated both the value of restorative seeding and its limitations, supporting sustained monitoring and targeted management rather than assuming that initial restoration treatments provide lasting protection against every invasion pressure.

Our research also examined conservation beyond protected areas. Studies investigated conservation methods for protected plants and the Hungarian meadow viper, alongside invasive-species detection and monitoring. Research on wetland fish examined how habitat loss and biological invasions combine to threaten native species, calling for cross-border conservation monitoring and repopulation programmes. Soil research assessed erosion risks, tillage effects and links between biodiversity and human well-being.

* **Restoring grasslands for the long term**

Experiments in Hungary's Kiskunság region followed sand-grassland restoration for 17–25 years, revealing different responses among invasive plants. Sowing native species accelerated the decline of annual invaders, but perennial invasive plants increased despite the treatments tested. The findings demonstrate both the value of restorative seeding and its limitations, supporting sustained monitoring and targeted management rather than assuming that initial restoration treatments provide lasting protection against every invasion pressure.

Publication count	102
Citation count	598

Protecting Biodiversity and Natural Heritage

* International success in research on the invasive Asian hornet at MATE

MATE's research on the invasive Asian hornet has achieved international recognition. Invasive species can threaten native biodiversity, disrupt ecosystems and affect agriculture, and insects such as the Asian hornet are of particular concern because of their impact on pollinators and beneficial species. Research that improves understanding of how such species spread and behave is essential for developing effective monitoring and response strategies. International success shows that the work of MATE's researchers is valued by the scientific community and contributes to a shared effort to protect ecosystems across borders. The recognition also highlights the University's strengths in environmental and life sciences. By studying invasive species, MATE helps provide the knowledge needed to protect biodiversity, support agricultural production and prepare for ecological risks in a changing environment.

* The Buda Arboretum becomes a protected historic garden

The Buda Arboretum has been designated a protected historic garden, recognising its cultural and botanical value. Arboreta preserve diverse collections of trees and plants, and they serve as living laboratories for teaching, research and public enjoyment. Protection helps ensure that the garden's character and heritage are maintained for future generations, while also supporting the long-term care of its plant collections. For MATE, the arboretum is part of a legacy that connects science, landscape and education. Green spaces of this kind contribute to biodiversity, offer shelter and habitat, and give people the chance to experience nature and learn about plants. The designation reflects MATE's responsibility to look after the living and historic assets it holds. It also strengthens the University's role in conserving botanical diversity and sharing its value with students, researchers and the wider public.

SDG 16	Peace, Justice and Strong Institutions

Strong institutions are open, fair and accountable, and they depend on trust and historical awareness. MATE contributes through research on governance and community participation, and through cooperation with public institutions.

Key 2025 Research Contributions to SDG 16

Inclusive decision-making, institutional fairness and community-centred development were central to our governance research published in 2025. Our studies examined how institutions can better respond to people's needs, particularly where formal provision and lived experience do not align.

Our research on sustainable cities and communities examined how residents value and use public spaces. Participatory research in Vác revealed differences between officially designated green infrastructure and places valued by residents. These findings support planning processes that involve communities more directly and recognise local knowledge alongside formal designations.

Our research also examined fairness in education, employment and humanitarian support. Studies of educational equity in Ghana showed that greater access alone does not ensure equal outcomes. Research on gender barriers in academic careers identified disadvantages in recruitment, promotion and work–life balance. Work on humanitarian projects in Gaza associated project success with relevance, coherence and effectiveness, with efficient resource use strengthening these relationships.

* **Aligning humanitarian support with needs**

Research on humanitarian projects in Gaza associated project success with relevance, coherence and effectiveness, with efficient resource use strengthening these relationships. The findings emphasised alignment with community needs and cultural circumstances. Complementary work examined community engagement and youth resilience, while research in Ethiopia's Tigray region highlighted the need to connect emergency food assistance with livelihood restoration and support for vulnerable households.

Publication count	20
Citation count	111

Building Trust, Memory and Institutional Cooperation

* Memory of prisoners of war

MATE's commemoration of prisoners of war honoured the experiences of those who suffered the consequences of conflict. Remembrance plays an important part in building peaceful and just societies, because understanding the human cost of war helps communities reflect on the value of peace, dignity and respect for human rights. By dedicating time and attention to this memory, the University recognised a difficult chapter of history and acknowledged its significance for families and communities. Educational institutions have a role in preserving historical awareness and in encouraging younger generations to engage thoughtfully with the past. Such acts of remembrance can strengthen social cohesion and support a culture of responsibility and tolerance. The commemoration reflects MATE's commitment to values that extend beyond science and teaching, and to its place as an institution that takes part in the cultural and civic life of the country.

* Strategic cooperation between MATE and the Ministry of Defence

MATE and the Ministry of Defence have established strategic cooperation, creating a framework for working together in areas of shared interest. Partnerships between universities and public institutions can bring together academic knowledge, practical experience and national priorities, supporting education, research and the exchange of expertise. For MATE, this cooperation offers an opportunity to contribute its scientific and educational strengths to public needs, and to develop programmes that benefit both organisations. Strong institutions depend on informed people, effective collaboration and trust between sectors. A formal agreement provides a clear basis for planning joint activities and for building long-term relationships. The cooperation reflects the University's role as a partner in national development and its readiness to work with public bodies on challenges that require specialised

SDG 17 Partnerships for the Goals

The Sustainable Development Goals can only be reached through cooperation across sectors and borders. MATE works with universities, research networks, public bodies and communities to share knowledge and build capacity.

Key 2025 Research Contributions to SDG 17

In 2025, research involving the Hungarian University of Agriculture and Life Sciences (MATE) demonstrated the value of collaboration in addressing interconnected sustainability challenges. Publications brought together expertise across countries and disciplines while examining how finance, knowledge exchange, institutional coordination and stakeholder participation can support progress towards the Sustainable Development Goals.

International agricultural research connected scientific knowledge with locally relevant development needs. Collaborative work involving Hungarian and Ethiopian institutions examined cluster farming among smallholder wheat producers, associating participation with greater technical efficiency and improved household dietary outcomes. Research undertaken with the University of South Bohemia compared the adoption of drones, sensors and robotics in organic farming across the Visegrád countries. These studies provided evidence for context-sensitive support, highlighting the roles of extension services, market infrastructure and institutional capacity in translating innovation into practice.

Environmental partnerships supported approaches to shared conservation challenges. A multinational study of European wetland fish examined the combined pressures of habitat loss and biological invasions, calling for cross-border cooperation in monitoring and repopulation programmes. A further international contribution developed the Soil Biodiversity and Well-being Framework, linking ecological measurements with economic and social perspectives. Designed for use by researchers, farmers and policymakers, the framework offered a common basis for assessing soil management and its contributions to people.

Mobilising finance for sustainability formed another important research theme. A review of impact investing and sustainable finance mapped connections among environmental investment, corporate governance and sustainable economic development. Complementary analysis of green banking found that profitability benefits were not consistent across the evidence reviewed, underscoring the need for strategies adapted to regulatory frameworks, market conditions and institutional capabilities. Together, these studies highlighted opportunities for financial institutions, policymakers and researchers to develop more evidence-based approaches to sustainability investment.

Knowledge integration also connected individual goals with the wider development agenda. Collaborative research on decent work and economic growth examined links with poverty reduction, inequality, clean energy and climate action. Other studies identified geographic imbalances in research participation, including the underrepresentation of agriculture-dependent regions in occupational safety research. These findings reinforced the importance of partnerships that do more than combine expertise:

they should broaden participation, strengthen locally relevant knowledge and connect research priorities with the communities and institutions expected to use the results.

Collaborating for Sustainable Development

* Agroecology Partnership: another MATE-coordinated project wins funding

Another MATE-coordinated international project has received funding under the second call of the Agroecology Partnership. Agroecology approaches farming and food systems in ways that work with natural processes, aiming to improve sustainability while supporting livelihoods and communities. International partnerships are especially important in this field because agricultural challenges differ between regions and solutions benefit from shared experience. MATE's role as coordinator reflects the trust of its partners and the strength of its research in agriculture and environmental sciences. Funding gives the project the resources to bring researchers and practitioners together, to exchange knowledge and to develop practical approaches. The success also shows how collaboration can multiply the impact of individual institutions. Through projects like this, MATE contributes to a global effort to make food systems more sustainable, resilient and fair.

* MATE works together to establish knowledge centres for sustainable development

MATE is working with partners to establish knowledge centres for sustainable development, creating places where expertise, research and practical experience can come together. Sustainability challenges are complex and cut across sectors, so progress depends on cooperation between universities, communities, businesses and public institutions. Knowledge centres can help organise this cooperation by collecting information, supporting training and making scientific insights easier to apply. By taking part in their creation, MATE contributes its strengths in agriculture, environment and rural development, while learning from the experience of others. The initiative also supports the exchange of knowledge between regions and the development of shared approaches to common problems. It reflects MATE's belief that sustainable development is built through partnerships, and that universities have an important role in connecting research with the needs of society.

MATE 2030 Strategic Programmes

MATE 2030 sets out the University's ambition to be a dynamic partner in advancing Hungarian agriculture. It connects international scientific progress with Hungarian farmers and industry, spreads knowledge across the country and creates new opportunities for rural development. The strategy focuses on five areas:

- Educating the future generation of agricultural leaders,
- Innovative knowledge generation in the Carpathian Basin,
- Strengthening knowledge-intensive agriculture, enhancing national competitiveness,
- Making an impact to build a green future,
- Uniting the agricultural community, promoting rural-urban cohesion.

Student Mentorship Program

Project Leader: Dr. Anikó Andrea Bencéné Fekete

The Student Mentorship Programme supports students at key turning points in their studies and careers. Its aim is to motivate students through personalised mentoring, help them set and reach their goals and strengthen their sense of belonging to the university community. Students join voluntarily or on a lecturer's recommendation, with particular attention to those at risk of dropping out. Participating lecturers receive specialised training in mentoring, and the programme builds a mentoring mindset in staff as well as students. Besides academic support, mentors help with goal-setting, time management, motivation and self-confidence, and taking part is recognised as an elective ("C") subject.

In 2025, the University promoted the programme which presented mentoring as a way to build a modern, inclusive learning environment, raise the value of the diploma and increase the number of diplomas awarded. In November 2025, the programme's leader, Dr. Bencéné Fekete, received the University's Talent Development Award (MAGISTER) at the Teaching Awards ceremony in Gödöllő.

The programme has supported more than 200 students across 13 institutes, guided by 13 lead mentors and 34 faculty mentors. Reported results include:

- 92% of mentored students improved their academic performance.
- Credit completion rose to 79%.
- Scholarship averages rose by 19%.
- Students mentored for a full year improved credit completion by 30% and their corrected credit index by 71%.

The programme's long-term goal is to help the University attract and retain students, support degree completion and raise the international value of its diplomas.

Future Leaders Programme

Project Leader: Dr. Katalin Szabó

The Future Leaders Programme (JVP) develops the leadership skills and career potential of motivated students. It is a talent-development initiative under MATE 2030 and the first of its kind in Hungary. Participants choose one of four career pathways aligned with MATE's strategic areas: Academia, Innovation, Management, and Policy and Governance. The programme is 65% professional and 35% leadership development and runs in four phases: admission, orientation and goal setting, professional immersion, and evaluation and next steps. Participants work in small teams on a student project, attend monthly full-day leadership workshops, take part in the "Active Leaders" masterclasses and seminars, and receive individual mentoring and optional English-language support. It can count for up to 10 academic credits.

MATE Alumni Program

Project Leader: Barbara Lapu-Balogh

The MATE Alumni Program is a community of graduates who studied at MATE or its predecessor institutions and now shape their professions in Hungary and abroad. Established under MATE 2030, its first milestone was the launch of the alumni.uni-mate.hu website and its English counterpart for international alumni, which have become the community's information and service hub. The programme rests on two pillars: career and professional support, including mentoring, job shadowing and training, and community-building through events, communication and campus programmes. Alumni receive regular newsletters and an alumni discount card, can attend professional gatherings and gala evenings, and can mentor current students or host interns. The programme also holds certificate award ceremonies for graduates marking 50, 60, 65, 70, 75 or 80 years since graduation, and publishes a video series on alumni career paths.

MATE Teaching Awards

Project Leader: Dr. Márta Balláné Erdélyi

Launched in spring 2024, the Teaching Awards recognise educators who show excellence, commitment and innovation, and they link to the strategy's performance-based culture and its goal of higher-quality education. From 2025, awards are presented in five categories, with one winner per category each academic year. The Student Voice award was merged into the Teacher of the Year (ETALON) category from 2025.

For 2025, institutes and the Student Union (for ETALON) nominated 80 teachers, of whom 70 nominations were valid. A nine-member committee, chaired by Dr. Balláné Erdélyi, produced shortlists of eight in the KATEDRA, ETALON, START and IRÁNYTŰ (Compass) categories, and students voted on them in the Neptun system until 22 October. The MAGISTER award is decided by the committee alone, based on measurable talent-development criteria. Compared with 2024, artistic and sporting achievements now count as separate evaluation criteria, and the committee's view carries more weight, while student votes remain important.

The second Teaching and Impact Awards ceremony took place on 18 November 2025 at the Szent István Campus. The winners were:

- **KATEDRA (lifetime achievement):** Dr. István Seres, associate professor and head of the Department of Physics.
- **ETALON (Teacher of the Year):** Dr. Péter Gombos, associate professor, deputy director of the Kaposvár Campus and head of the Department of Subject Didactics.

- **START (Young Educator of the Year):** Dr. Nikoletta Amanda Such, research fellow at the Department of Animal Nutrition and Nutritional Physiology.
- **MAGISTER (Talent Development):** Dr. Anikó Andrea Bencéné Fekete, associate professor and deputy director for education at the Institute of Education.
- **IRÁNYTŰ (Innovative Educator of the Year):** Dr. László Menyhárt, associate professor in the Department of Applied Statistics.

The rector noted that nearly 85 teachers had been nominated across the categories and that every nominee had an outstanding career to be proud of.

Renewal of Adult Education

Project Leader: Dr. Krisztina Tóth

Under MATE 2030, the University is renewing its adult education offer to create a practice-oriented, market-relevant portfolio that supports lifelong learning. Building on decades of experience and strong links with the agricultural sector, the portfolio covers agritech, digitalisation, professional and corporate training, university preparation, drone technology, agricultural consultancy and management. The programmes serve prospective students, working professionals, agricultural practitioners and lifelong learners. A new visual identity, a digital application platform and a refreshed recruitment strategy support the renewal.

The year's flagship launch was "Agrárdigitalizáció 2025", an intensive 24-hour course for agricultural professionals at large companies. It ran from 11th – 13th March 2025 in Gödöllő and taught advanced mapping, modelling and farm-management tools on real farm data.

The 2025 catalogue also reflects the breadth of the renewed portfolio:

- **Digital and precision agriculture:** Drone technology in agriculture and industry (24 hours), multispectral camera use, thermal-imaging diagnostics and 2D geographic information systems, with the drone course described in Hungarian, English and German.
- **Agricultural and animal sciences:** Cattle inseminator training (200 hours, Kaposvár), companion animal dietetics, soil health and sustainable nutrient management, and bulk crop storage.
- **Professional and general learning:** Technical and vehicle damage expert training (192 hours), a certified accountant course, university entrance preparation and wine-judging training.

SMART UNI

Project Leader: Prof. Dr. Zoltán Bujdosó

SMART UNI – Teaching Compass is a digitally supported teaching-quality programme that MATE began developing in early 2025 as part of MATE 2030. It supports lecturers in their professional development while contributing to the continuous improvement of the University's teaching quality. The system is not a tool for control, grading or ranking. It collects feedback from several perspectives: students, peer lecturers and university leaders. Peer feedback helps identify good practice and creates opportunities for lecturers to learn from one another. Results are shown in visual form, so teachers can quickly see their strengths and areas for development, while the University gets a fuller picture of its teaching culture.

Key milestones in 2025:

- SMART UNI was presented as one of the new MATE 2030 programmes. The rector described it as giving lecturers data-based, balanced feedback and analysis of their work and development opportunities, and Prof. Bujdosó was named as the programme's leader.
- The pilot phase of the Teaching Compass started in the autumn semester. It ran alongside the University's student feedback survey (OMHV), which is a key source of student input. The survey was renewed this semester with fewer, more targeted questions, developed with the Student Union, and students who complete it get earlier course registration the next semester.

MATE Impact Awards

Project Leader: Dr. Dávid Papp

Established in 2024 under MATE 2030, the Impact Awards recognise staff whose work creates measurable societal, environmental and economic impact beyond the University. MATE is the first Hungarian university to build a formal award structure for "third mission" performance, so that impact outside the classroom and laboratory is valued alongside research and teaching. Any member of the university community can nominate a colleague or put themselves forward, and an expert committee decides based on the scale, durability and uniqueness of the impact.

In 2025, the Teaching and Impact Awards were presented for the second time on 18 November at the Szent István Campus in Gödöllő. About 60 colleagues were nominated for the Impact Awards, and Dr. Papp chaired the jury. The awards were presented in four categories:

- **Innovation Impact Award:** Prof. László Abrankó, head of the Department of Food Chemistry and Analytics and of the Food Quality, Safety and Nutrition Science Centre.
- **Sustainability Impact Award:** Dr. István Szabó, head of the Department of Environmental Toxicology at the Institute of Aquaculture and Environmental Safety.
- **Agóra Impact Award, for community-building:** Dr. Katalin Szabó, deputy director of the Institute of Agricultural and Food Economics and head of the Department of Agricultural Management and Leadership Science.
- **MATE Media Ambassador Impact Award:** Prof. Miklós Heltai, director of the Institute of Wildlife Management and Nature Conservation.

At the ceremony, the rector said that every nominee deserved recognition, and Dr. Papp said the awards also aim to draw attention to work that benefits society beyond traditional teaching and research roles.

Flagship Research Groups and Research Excellences Programmes

Project Leader: Dr. Mónika Varga

The Flagship Research Groups (FRGP) and Research Excellence (REP) Programmes are central to research excellence at MATE. They provide transparent, performance-based support to the University's strongest researchers and teams. The FRGP gives three-year institutional support to 15–20 research groups, and the REP awards two-year individual grants to around 70–80 researchers. Priority areas include sustainable agriculture, food security, climate adaptation, digitalisation and interdisciplinary innovation, with a focus on projects that contribute to the SDGs. Both programmes also offer training,

mentoring, visibility and support for international collaboration. They strengthen research careers, partnerships and the University's international standing.

In 2025, the Research Excellence Programme was relaunched in Gödöllő in February. Of 21 applicants, a three-member evaluation committee selected 15 researchers. Each receives a gross grant of HUF 2 million a year for two years, along with research advice, professional events and support to increase their scientific visibility. For the first time, students from the Future Leaders Programme joined the opening, creating a direct link between emerging leaders and established researchers.

The programmes also brought researchers together around shared challenges. A professional day at the Buda Campus in April focused on the reproducibility of results in agricultural and life sciences. In June, the Kaposvár Campus hosted a meeting on the challenges of practice, connecting researchers with practitioners in agriculture, food and human medicine. In September, the Károly Róbert Campus examined data and models in the age of digitalisation and AI, from sensors, drones and satellites to hybrid models across crop, livestock, aquaculture and food chains.

During the year, the Flagship Research Groups that began in 2024 continued their work. In October, a call opened for the 2026 round of the Flagship Research Groups Programme. It offers up to five groups three years of funding, starting in January 2026.

Innovation Competitiveness Diagnostics

Project Leader: Gergely Huszthy Balázs

This initiative at MATE serves as a strategic instrument to strengthen the University's research and innovation excellence. Its primary goal is to identify MATE's key research and innovation focus areas by aligning internal academic strengths with external funding and partnership opportunities. Closely linked to the Research Excellence (REP) and the Flagship Research Groups (FRGP) Programmes, the project supports the University in shaping the future of MATE and contributing to sustainable national and international impact.

Given MATE's multidisciplinary profile and multi-campus structure, a coordinated and evidence-based strategy is essential. The diagnostics process provides a comprehensive framework to guide institutional decision-making, define scientific priorities, and enhance competitiveness in both the domestic and global research landscape.

Through the mapping of institutional expertise, the identification of synergies across departments, and the establishment of innovation portfolios, the diagnostics initiative enables MATE to build a coherent and forward-looking research ecosystem. By integrating academic excellence with applied innovation, it supports the University's mission to deliver high-impact, sustainable solutions for the agricultural, environmental, and life sciences sectors.

MATE 100 Club

Project Leader: Gergely Huszthy Balázs

The MATE 100 Club builds long-term partnerships with 100 key stakeholders, including leading companies and professional associations. It connects university knowledge with industry needs and supports innovation, knowledge transfer and joint projects. Partners can offer scholarships, dual training, internships, infrastructure development, joint grant applications and corporate continuing education. Founded in 2024, it brings them together on a shared platform for cooperation in education, research

and services. Its aim is to connect university knowledge with industry needs through shared innovation, talent development and research cooperation.

In 2025, the Club's partners met twice. On 28th May in Budapest, they marked the Club's first anniversary. The rector set the goal of joining the world's top 100 agricultural universities, noting that MATE's agricultural ranking had moved from the 350–400 band to 100–150. He also reported on MATE 2030, which has 27 interlinked programmes. On 25th November, MATE's institutes and units presented their work to the Club's 100 largest corporate partners at the Szent István Campus. The rector described three directions for cooperation: technological, educational and social innovation. Partners held one-to-one meetings with university representatives and heard presentations on the innovation system, the Future Leaders Programme and adult education.