

Frederick University:

Sustainability Report 2022





Foreword by the University President

Frederick University's first sustainability targets, set for 2022, were presented in its first Sustainability Report of 2020. Today, I am delighted to note that these targets have been met with great success and this success is highlighted throughout the present Frederick University Sustainability Report 2022.

In an increasingly complex and interconnected world facing the real threat of climate change, mass loss of biodiversity, pandemic diseases, wars, extreme poverty and inequalities, rapid technological change, natural disasters, violent ideologies and conflicts, democratic backsliding and regression in relation to women's issues, among others, there is no better way than education to address the threats and challenges.

Confronted with an uncertain and complex future, our objective should not only be to do things better but to do them differently. We are called to redefine our role, reflect on where we are and radically rethink how we move forward.

Achieving the Sustainable Development Goals will require creative thinking, adaptability, critical inquiry skills, teamwork, empathy, compassion and perseverance in problem-solving. Frederick University has made it a priority to be an agent of change in our society. To contribute to the progress of society and to inspire through our actions. And this is a methodical effort based on our mission and within the framework of our strategic planning.

While it is impossible to include every activity that is of relevance, this report presents a selection of the University's activities over the past year. It showcases our contribution to addressing sustainability challenges through teaching, research, community engagement and governance & operations. Frederick University is dedicated to a just and sustainable future for all.

I would like to praise and thank our community (faculty, staff, students and alumni) for their commitment to this work. I am very proud of what we have achieved together.

Natassa Frederickou
President of the Council

Frederick University's Impact Acknowledged in Global Rankings

With more than 280 additional institutions joining the Times Higher Education Impact Rankings 2022 raising the total number of participating institutions to 1524, Frederick University ranked among the top 101-200 Universities in the world in all four categories that were considered for its overall score, making it one of only two Universities in Cyprus which overall ranked in the top 301- 400 Universities worldwide.

“These important achievements further strengthen our Sustainability Strategy, which is now an integral part of the identity and daily operations of our University”

Natassa Frederickou,
President of the Council

“This exceptional distinction is in line with our strategic goals. We promise to aim even higher and set new goals to be achieved with enthusiasm and virtue”

Professor George Demosthenous,
Rector



University Contributions to the SDGs: Methodology

For the period of 2020-2022, the University set specific targets for each of its four dimensions of activity. These targets are assessed either by indicating whether they were implemented or not (eg. a policy for inclusion of transgender people) or by using measurable performance indicators (e.g. reduce the carbon emission levels caused by the University operations).

RESEARCH

Academic research conducted by the University and consulting activities and collaborations with Government, NGOs and other stakeholders.

OUTREACH

Actions aimed towards the local society and the interconnection of the University community with its environment including policy development and advocacy.



TEACHING

Actions and targets related to the delivery of teaching either in formal education, through the programs of study the University offers, or through informal and non-formal activities such as lifelong learning actions.

GOVERNANCE & OPERATIONS

Policies of the University with the aim of adopting best practices and leading by example through its governance and operations in the effort to promote the SDGs.

In April 2022 the University presented its 2022 – 2030 Strategy, outlining its aspirations and direction for the next decade. Sustainability holds a central role in the new Strategy as described in our Purpose below:

Our Purpose is to provide an environment in which faculty, staff and students can reach their full potential. Through our research to advance knowledge for the good of society and through the provision of holistic education so our students can face global problems and become agents of change.

Based on this purpose, in this report we are setting an even more ambitious set of goals for 2025.

Our Progress



Overall, 23 targets in total had been placed under the four specified dimensions of activity. In the next pages of this report, we evaluate our performance in each dimension and the progress of each individual target is detailed.

Performance and Status of targets

The table overviews the number of targets by status at the end of 2022. The status of individual targets is detailed in the report.

Exceeded or met		4 targets
On track		13 targets
Partially met		6 targets
Not met		- targets

The progress made in the last couple of years is evident throughout this report and it is also supported by the excellent results in the Times Higher Education Impact Rankings 2022. Frederick University ranked among the top 101-200 Universities in the world in four categories, making it one of only two Universities in Cyprus which overall ranked in the top 301-400 Universities worldwide.

Frederick University ranked among the top 101-200 Universities in the world in:
SDG 4: Quality Education,
SDG 7: Affordable and Clean Energy,
SDG 10: Reducing Inequalities,
SDG 17: Partnership for the goals

The University ranked first among all participating Universities in Cyprus in SDG 17.

This achievement reflects the University's efforts to educate students to adopt sustainability and address the SDGs through their current or future roles. This effort is materialised through the integration of the SDGs in all University curricula, the development and the implementation of student-centred learning and teaching pedagogical approaches that allow students to develop the knowledge, skills and mindsets to become committed to building a more sustainable future and by offering SDGs relevant programs of study. It also acknowledges the University's networking and collaboration with other institutions in Cyprus and abroad for the exchange of good practices and the development of strategic synergies to achieve the SDGs.

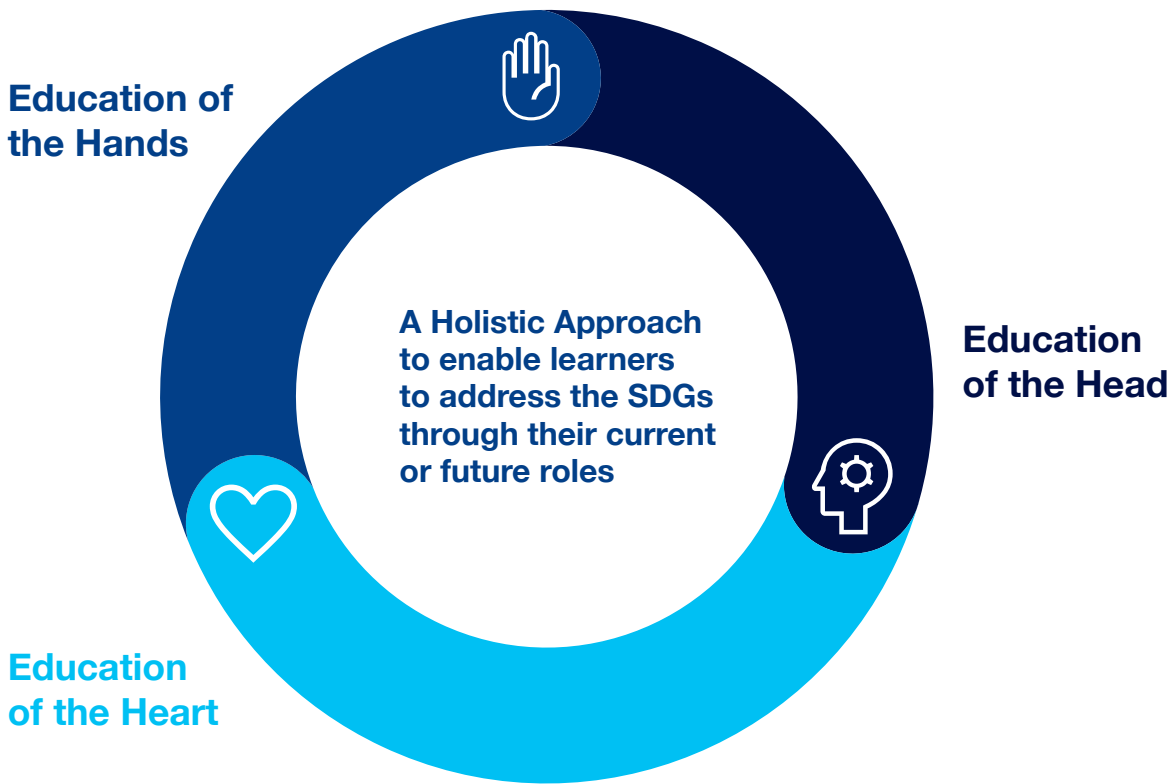


Education

Graduates today are faced with an uncertain and complex future. The way our students learn and are taught must also change to stay current and effective. We need to prepare our students not only with the appropriate **knowledge** but also with the necessary **skills, values, and attitudes** that will enable them to confront future challenges while actively and creatively contributing to human and planetary well-being and sustainable societies.

Here at Frederick University, we aim for the holistic development of our students through an education with an emphasis on the **3H**.

The 3H for a Sustainable Future



We want our students to have the necessary knowledge (head) but at the same time, to have the appropriate skills (hands) and care (heart) so that, upon their graduation, they are able to face the turbulent future ahead but also -more importantly- they have the desire to become agents of change.

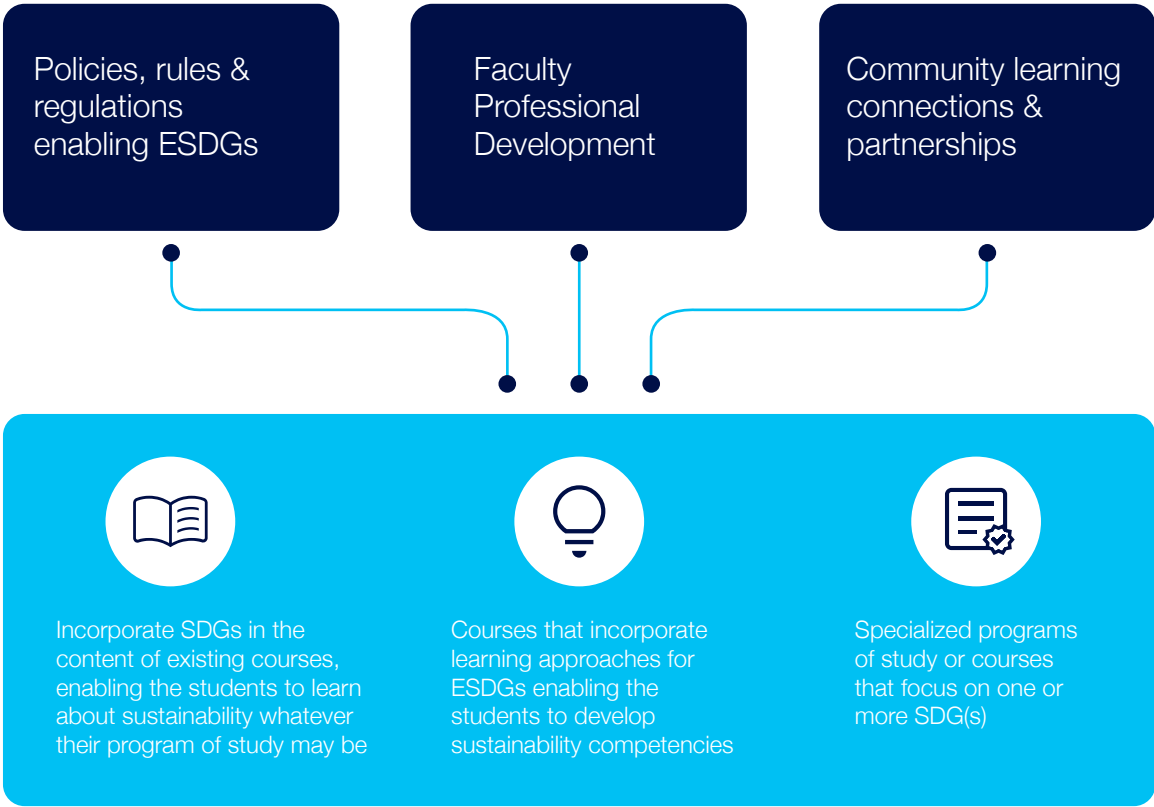
All three components are very important and, at Frederick University, there are different approaches by which they can be achieved:

- By incorporating the SDGs in the content of the curriculum and enabling the students to learn about sustainability whatever their program of study may be.
- By offering action-based learning initiatives that are based on a student-centred learning and teaching (SCLT) pedagogical approach. By providing students the opportunity to work on real-world projects or to solve real-life challenges, we support students' critical thinking, problem-solving, creative and entrepreneurial skills.
- By providing programs or courses that are focused and address one or more SDG(s).

During the past two years much emphasis was placed on:

- Developing policies, rules and regulations that enable student-centred learning and teaching.
- Developing student-centred curriculum and pedagogy that help students develop the knowledge, skills, values and attitudes which allow them to become committed to building a more sustainable future.
- Empowering faculty members through professional development programs in implementing student-centred teaching and assessment.
- Developing collaborations and partnerships that will enable learners to engage with the community.

Frederick University ECOSYSTEM for ESDGs



Education

Targets 2022 Performance

▲ Exceeded or met

● On track

■ Partially met

▼ Not met

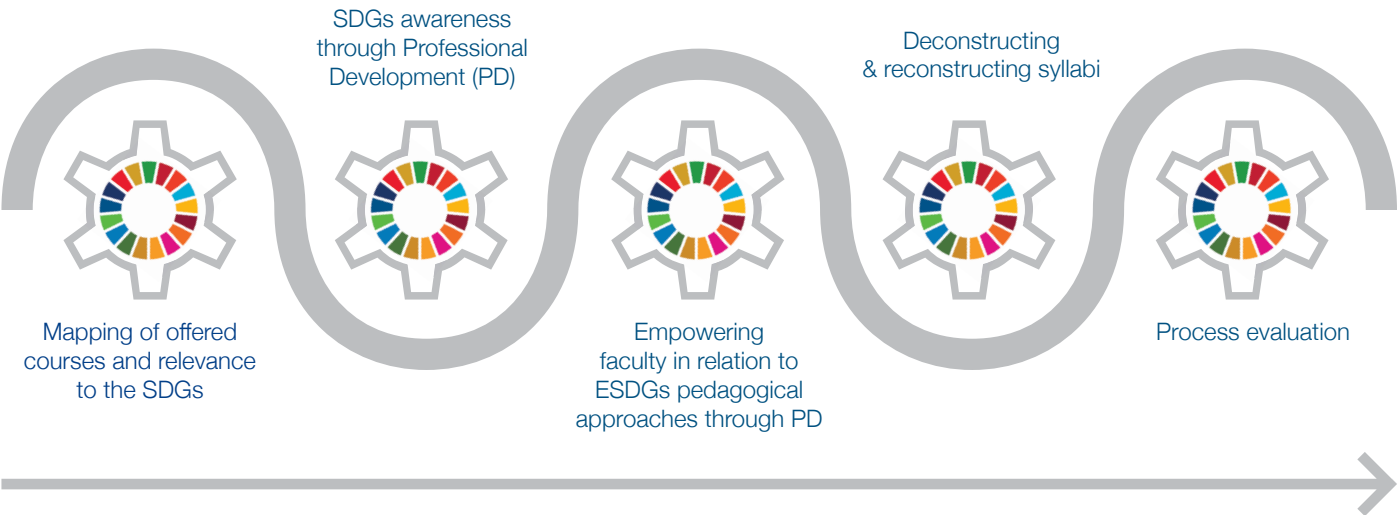
TARGET	STATUS	COMMENT
Map courses offered in all programs of study that serve in the education and promotion of SDGs. (SDGs 1-17)	●	See Case Study on Mapping the Sustainable Development Goals in the University Curricula.
Enhance Lifelong Learning activities at the University and develop vocational programs and training courses in line with short-term and long-term future employment needs. (SDGs 8-9)	●	Frederick University invested in the growth of its Training and Certification Centre that is open to the general public. The Centre focuses on increasing the availability of lifelong learning opportunities to the society. Building on last year's 20% increase on operations, in the past year a further 10% increase has been achieved both in terms of training programs offered as well as in terms of participants.
Horizontally embed programs of study with elements that better prepare graduates for inclusion in the work environment including but not limited to: entrepreneurship, transferable skills, work placements and links with employers and other stakeholders. (SDGs 8-9)	▲	See Case Study on FULL: The University introduced the FULL (Frederick University Living Lab) initiative which is based on a student-centred learning and teaching (SCLT) approach. It combines project-based, participatory and experiential learning through community connections and partnerships. It challenges students to use their disciplinary knowledge and skills and tackle real-world problems and issues through interdisciplinary approaches and activities. FULL projects are connected with the SDGs.
Develop educational activities that protect and promote cultural heritage and strengthen the cultural identity of the country in an inclusive manner respecting the various communities comprising the society. (SDG11, SDG16)	●	Recognising the imperative need to preserve, protect and promote the cultural heritage, Frederick University offers the Postgraduate Program MSc in Conservation and Restoration of Historical Structures and Monuments which aims at training scientists of different specialisations in this field. The program covers not only the principles and methodologies concerning the protection and restoration of historical buildings, but also the sustainable restoration techniques and practices. The Program has been accredited in blended mode so as to enable the promotion of preservation of cultural heritage beyond the Republic of Cyprus.
Develop specific programs of study at postgraduate level that address sustainability and climate change issues and embed in as many programs as possible at undergraduate level courses specifically focusing on sustainability and climate change matters. (SDGs 12-13)	●	A Master's program focused on sustainable development, the MSc in Education for Sustainable Development and Social Change, has been accredited in 2021. The exploration of good practices and opportunities within our courses and the experience obtained through research, resulted in the development of new courses on sustainability during Spring 2022. Existing Courses on sustainability and the SDGs, that were already available within specific programs' structures, were opened to all students as free electives.

Case Study

Mapping the Sustainable Development Goals in the University Curricula

Mapping Methodology

Under the project, headed by Dr Chrysanthi Kadji, a methodology has been developed that follows a sequential process of research and Professional Development (PD), as depicted in the following chart.



During the period 2021-2022, the University focused on the mapping of the offered courses and their relevance to the SDGs. The aim of this activity was threefold:

1. To understand where the University stands in terms of its courses in relation to each SDG
2. To identify good practices and opportunities for the further integration of the SDGs horizontally
3. To explore gaps and educational needs in order to empower faculty members and help them become more competent in addressing the SDGs in their field.

The mapping has been conducted with the use of questionnaires and it focused on 4 main areas:

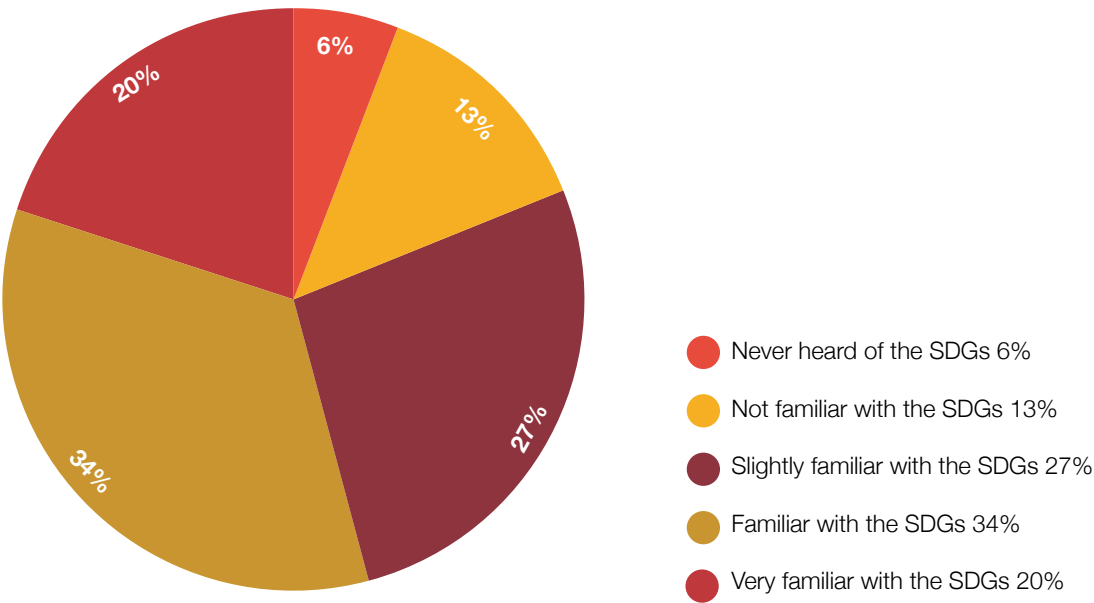
- Faculty's perceived familiarity with the SDGs
- Faculty's level of competence / confidence in integrating the SDGs in their teaching
- Courses' content connections to the SDGs
- ESD pedagogies used in courses

The results were used to evaluate the University's existing sustainability initiatives and the development of future initiatives, ultimately informing the priorities and sustainability targets for 2025.

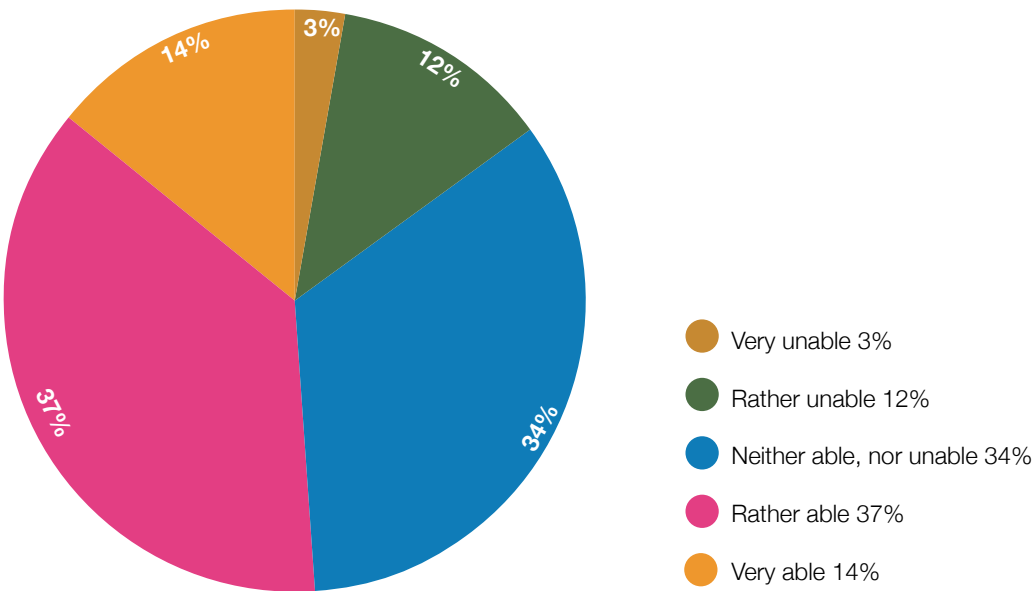
Mapping Results

The outcomes of the SDGs mapping for 2021-2022 indicate that more than 80% of faculty members feel that they are familiar (varying from slightly familiar to very familiar) with the SDGs and 51% feel confident to integrate the SDGs in their teaching.

How familiar are you with the SDGs?

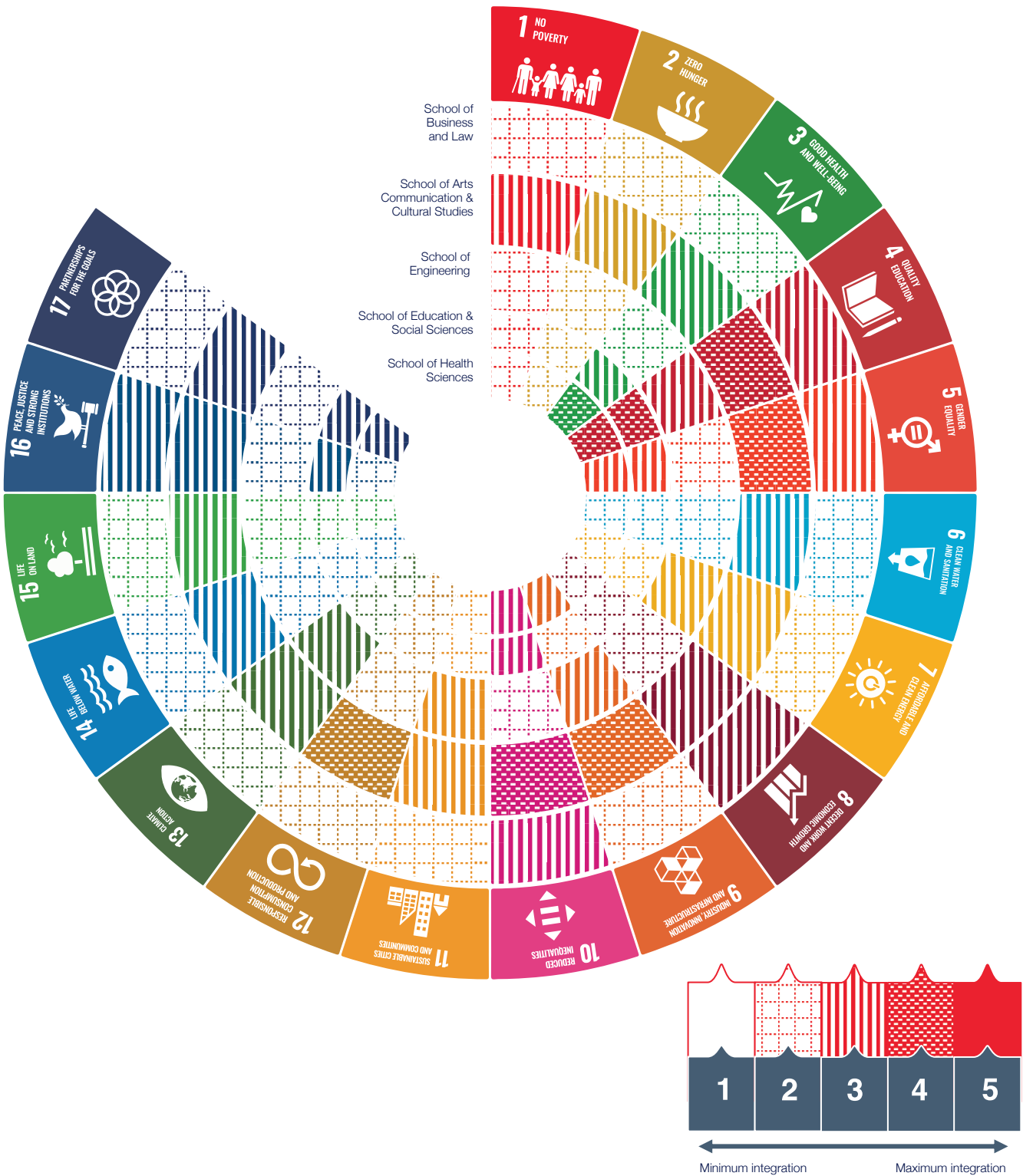


How able do you feel to integrate the SDGs in your teaching?



The outcomes of the SDGs mapping for 2021-2022 indicate that all of the SDGs are addressed through the courses of the 5 Schools of the University, in a degree varying from low to average.

Average level of integration in Courses for each School



Case Study

FULL - Frederick University Living Lab

Welcome to FULL

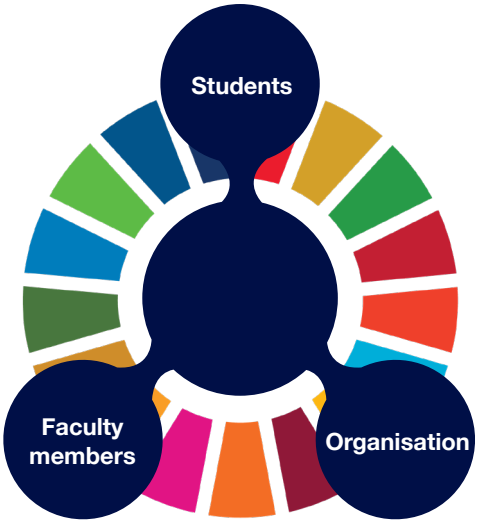
FULL (Frederick University Living Lab) is a Frederick University pedagogical initiative that is based on a student-centred learning and teaching (SCLT) approach. It combines project-based, participatory and experiential learning through community connections and partnerships. It challenges students to use their disciplinary knowledge and skills and tackle real-world problems and issues through interdisciplinary approaches and activities. FULL projects are connected with the United Nations' Sustainable Development Goals (SDGs).

What is FULL?

The initiative builds partnerships between Frederick University courses and organisations (industry, corporate, non-profit, government-sector organizations, institutions etc.). It takes the form of a project, or other task, that has to be performed by the students, in actual professional settings, during the semester, in collaboration with the representative(s) from the partner organisations and the course's instructors. The project is determined by the course instructor after considering the course's learning outcomes and the partner organisations' needs.

The project can constitute one of the means for coursework assessment and/or final assessment. This initiative represents a paradigm shift from teacher-centred learning to student-centred learning. Students in this model are not considered passive recipients of information but, on the contrary, they are given different opportunities to take responsibility for their own learning and to actively participate in the construction of knowledge, and to develop their autonomy as learners through self-reflection and improved learning skills.

FULL also enables a change in mindset for faculty members since it encourages internal collaboration amongst different faculty members as well as external collaboration with different stakeholders. The initiative is integrated within Frederick University's existing courses. During the semester, in every FULL course, a three-party relationship develops which involves faculty experts, industry mentors and students.

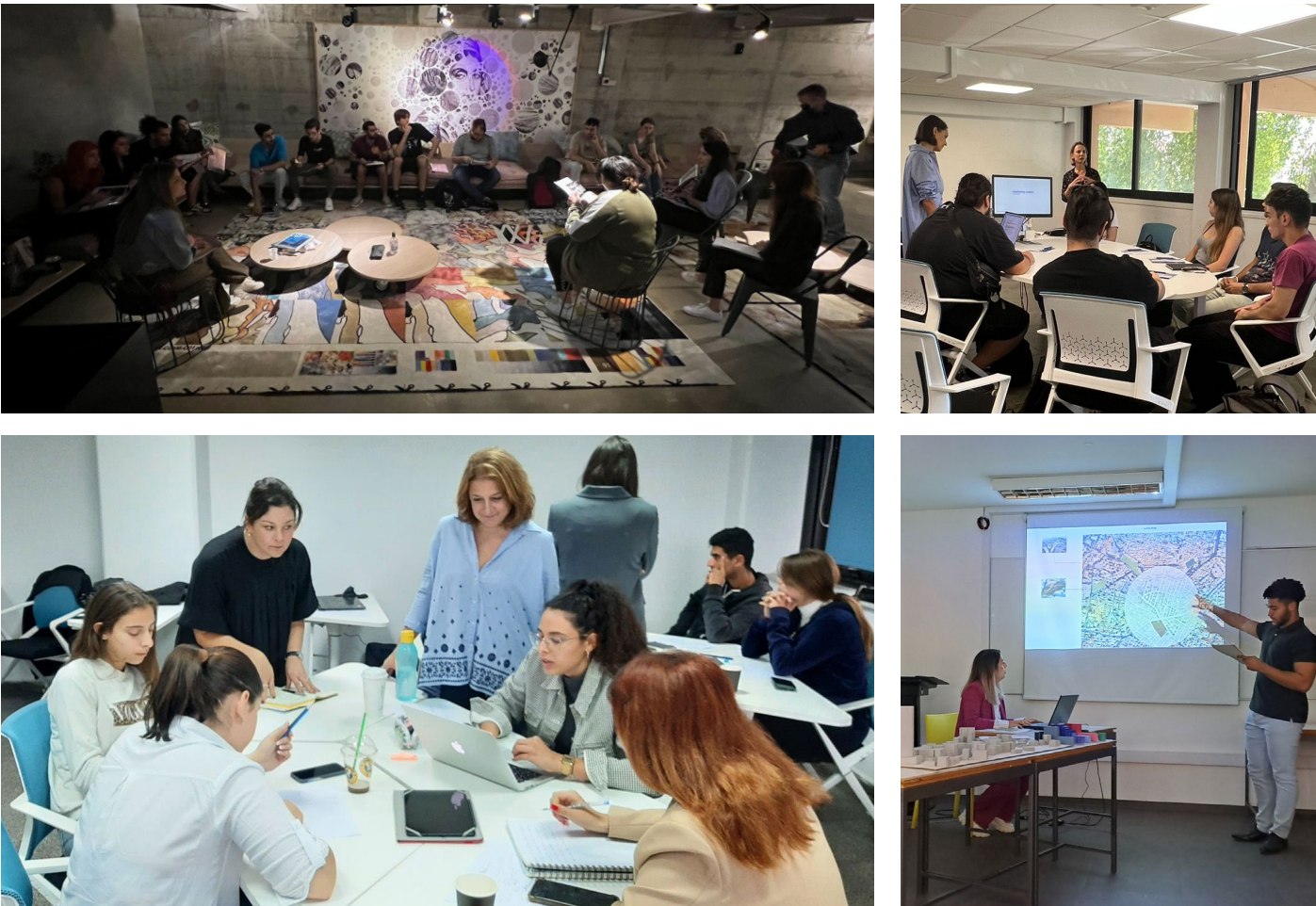


The student - faculty - organisation partnership helps students acquire knowledge, and develop skills and mindsets that will enable them to address the SDGs through their current or future roles

FULL for Students

- FULL courses help students develop in the following ways:
- (a) Integrate effectively and apply in appropriate ways previous learning and knowledge to make and justify decisions in a real-world context of work.
 - (b) Demonstrate workplace competencies: professionalism, leadership, initiative, confidentiality, communication, responsibility for decision-making, and organisational, cultural & social awareness.
 - (c) Demonstrate transversal competencies: critical thinking, futures thinking, systemic thinking, collaboration and communication, problem-solving, creativity and innovation, values, empathy and decisiveness for action.
 - (d) Reflect upon decisions, personal choices and actions in the workplace and critically appraise their appropriateness.
 - (e) Enhance disciplinary and develop multidisciplinary knowledge of a wide range of perspectives, within a combination of subject areas.
 - (f) Integrate within their professional decisions and behavior, principles and actions that promote the achievement of the SDGs.

In the Fall 2022 semester 7 courses were offered following the FULL methodology. Our aim is to offer all Frederick University students the chance to complete a FULL course during their studies. We look forward to creating a positive impact to business, government and society.



RESEARCH

Targets 2022 Performance

▲ Exceeded or met

● On track

■ Partially met

▼ Not met

TARGET	STATUS	COMMENT
Map all research publications, reports, consulting activities, and research projects that support an SDG. (all SDGs)	●	The research activities are being mapped against SDGs. The number of publications and projects are recorded continuously and the results are presented in the respective section of this report. See Case Study on Mapping the University Research Activities .
Establish institutional collaborations with Least Developed Countries (LDC) with the purpose of collecting data and engage in research programs for identifying and supporting solutions. (SDGs 1, 2, 17)	■	Agreements have been established with institutions in African and South Asian countries in order to support research activities related to SDGs. It is expected that these agreements will mature to institutional-level cooperations. A new research project was recently approved and includes in its consortium countries included in the LDC list.
Develop automation solutions for resource optimization in agriculture industry with focus on smallscale producers. (SDG 2)	●	A number of research proposals were submitted aiming to address resource optimization in agriculture industry. Two new projects were recently approved, which deal with the usage of Wireless Data in agriculture (AGRILORA) and Biophotonics Technology for milk analysis (MILI).
Fund laboratories related to research on energy including sustainable energy systems and energy storage technologies. (SDGs 7, 12, 13)	●	Besides the continuation of support to the “Sustainable Energy Research Group”, new support has been provided in terms of facilities for the establishment of a “Building Digital Twins Lab” as well as progressing on the plans for the establishment of a “Hydrogen Lab”.
Increase number of researchers positions including fully funded / sponsored PhD positions. (SDGs 7, 9, 12, 13)	●	Through the research projects implemented during the last academic year 30 FTE researchers have been supported and nine new PhD scholarships were offered in STEM subjects. We achieved more than 20% increase in the number of PhD students. Significantly, this has been mainly achieved due to the increase of PhD students under full or nearly-full sponsorship by almost 60% in the past two years.

TARGET	STATUS	COMMENT
Support and finance innovation and technology transfer initiatives. (SDG 9)	■	The University continued the support to start-ups in applying for funding and a few proposals have been successful. It has also managed to be part of a successful EIT HEInnovate project that started end of 2022 and is expected to bear results in the near future. In terms of processes and dedicated resources for tech transfer activities, more needs to be done and a formal cooperation with the newly developed TTO at national level has been developed to support that effort.
Fund research units directly involved with sustainability issues and climate change research. (SDGs 5, 7, 13, 14, 15)	■	The University continues its support to research units directly involved with sustainability and climate change research, with the most notable units being the “Nature Conservation Unit”, the “Sustainable Energy Research Group” and the “Maritime Transport & Commerce” ones. A new related group has also been developed on “Gender Equality and Inclusion”.
Collaborate with government stakeholders to collect data and conduct research relating to marine and land biodiversity and environment protection. (SDGs 14-15)	●	We have strengthened the level of collaborations with state agencies with respect to environmental and social care matters including the Department of Environment, the Department of Forests, and the Municipality of Limassol for blue economy. The University collaborates with government stakeholders for data collection relating to SDGs 14 and 15, through research and tender projects. These include LIFE IP PANDOTEIRA project (collection of data regarding habitats and species), Blue Limassol Forum (Risk Assessment study for Limassol Bay), as well as governmental tenders (use of plastic products and alternative choices, food waste levels, etc.)

Case Study

Mapping the University Research Activities

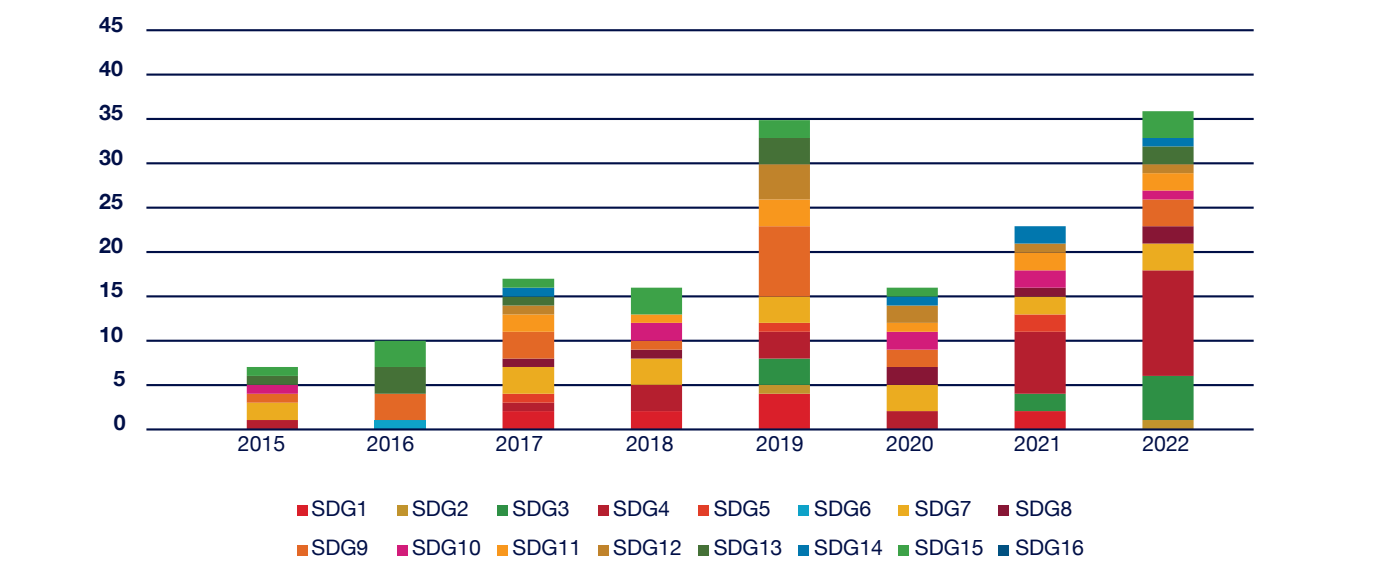
The University has developed a comprehensive mapping of its research activities against the SDGs. The aim of this activity is twofold: firstly, to achieve a reliable system of data collection and assessment, and secondly to enhance the SDG dimension of research activity within our community. Research mapping has been conducted along three levels: engagement of research units, funded projects, and academic publications.

All active research units have been mapped in terms of relevance to SDGs. The following table indicates the areas of concentration of research on each SDG by number of research units in the University engaging in relevant activity.

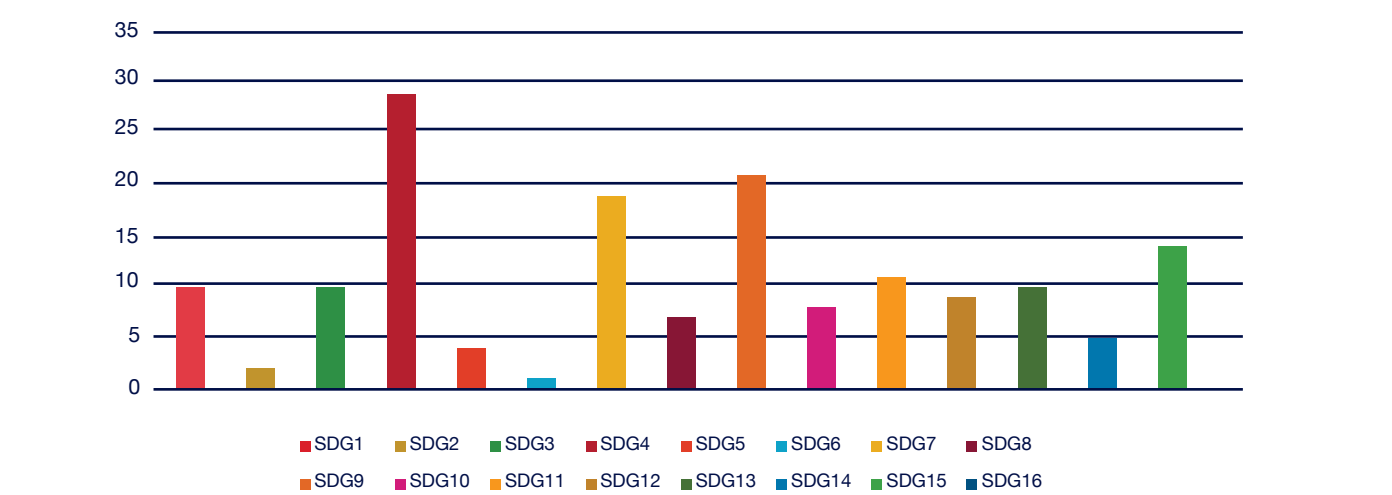
SDG	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
No. of Research Units	2	1	5	11	2	1	12	4	7	2	6	4	4	3	1	1

With respect to funded projects, we are mapping the number of funded projects granted on an SDG each academic year as well as the total number of projects granted relating to each SDG since 2015. These data are provided in the following two charts, respectively.

New Projects by SDG per year



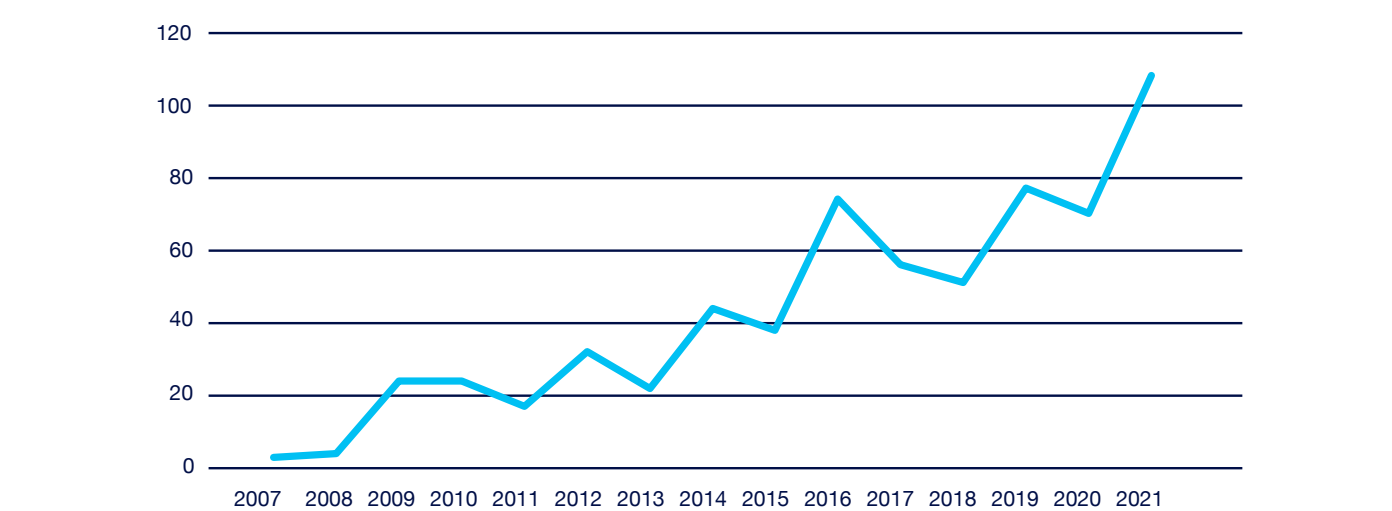
Total number of projects by SDG since 2015



The mapping is updated for 2022 and we notice that similar conclusions are extracted. A clear increase in the number of research projects related to SDGs had been identified in the 2021 mapping and this trend has been maintained in 2022. Similarly, we identify a close correlation between the areas of research activity and the areas of externally funded research projects. Unfortunately, we did not manage to increase the level of analysis towards other interesting dimensions, such as student engagement and profile of collaborating institutions, something that we aim to achieve in the following years.

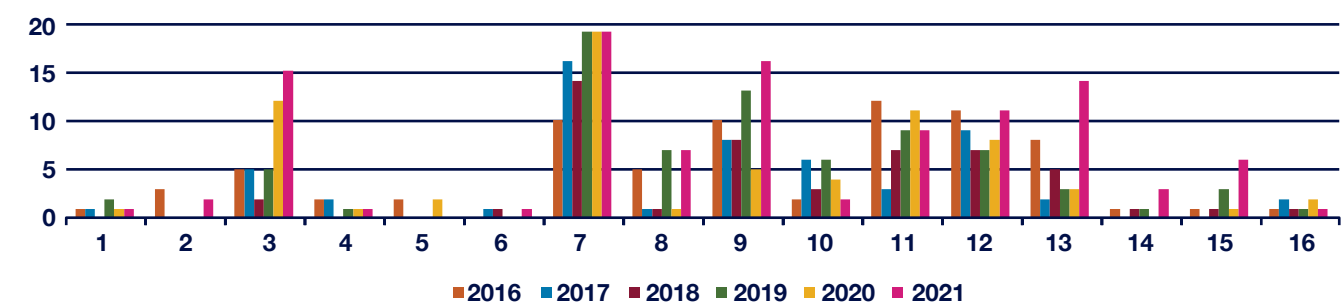
With respect to academic publications, we used the same methodology and retrieved our publication performance as depicted in the following chart which shows the total number of publications on all SDGs. It is evident that a clear increasing trend is observed and we aim to further increase this in the next target period.

Total publications related to SDGs per year



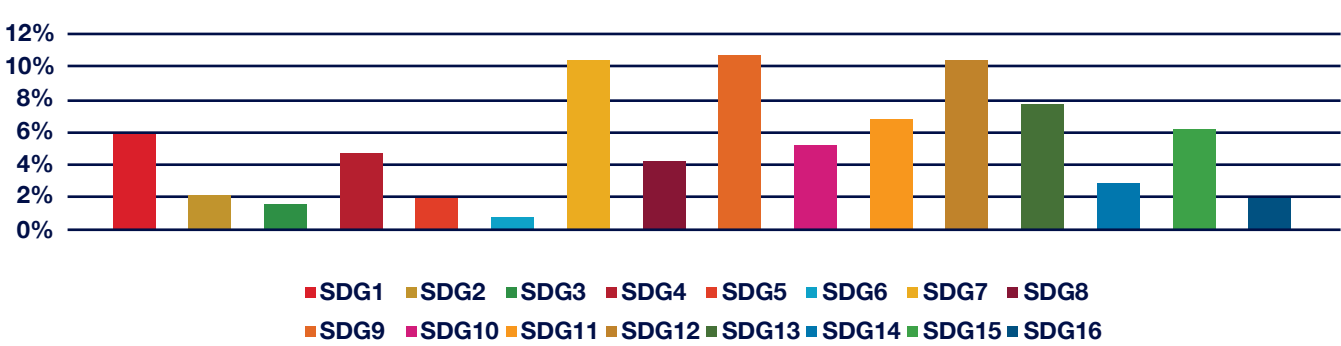
The chart below shows the number of publications for the period 2016 until 2021 per SDG. Examining the provided information, as expected, we see that there is a clear correlation between the areas of research activity and the funded research projects implemented with the number of publications.

2016-2021 research article publications for SDGs



Finally, the following chart provides the total number of publications generated by our University compared with the total number of publications in Cyprus, again using the same 2021 methodology, for the same period.

Percentage of publications in Cyprus made by Frederick University between 2016-2021



Case Study

LIFE Kedros! The winners of the #LIFEAwards22 in the Nature Category

The Nature Conservation Unit of Frederick University specializes on biodiversity conservation, natural resources management and environmental education and awareness in Cyprus.

It participates in awareness raising events on Climate Change and, through its participation in research projects, information is collected on the impacts of climate change on biodiversity and measures are implemented to mitigate climate change.

As an example, the recently completed project LIFE KEDROS aimed to enhance the endemic Cedar habitat's resilience and increase its adaptation capacity to climate change.

The project improved the conservation status and resilience of cedar forests at risk from climate change in a Cyprus Natura 2000 site. The team undertook silvicultural treatments for the first time and reduced competition between mature and young cedar trees. They restored 12 hectares of degraded habitat, planted 8 hectares of new cedar habitat, and installed a seedbank for reforestation.

The project won the LIFE Award for Nature of the 2022 LIFE Awards.



OUTREACH

Targets 2022 Performance

▲ Exceeded or met ● On track ■ Partially met ▼ Not met

TARGET	STATUS	COMMENT
Provide an active public access information program on human rights and health issues (SDGs 3, 5, 16)	▲	The University plans and implements several campaigns and offline and online events to raise awareness on specific health and mental health issues. It also organises on-campus or online events (lectures, conferences, seminars) to raise awareness on human rights issues and discuss relevant topics (such as trafficking, war in Ukraine, medical negligence), or to provide vocational training to professionals, such as lawyers, legal counsellors and others.
Maintain a platform for women's rights and equality measures. Actively engage with society and stakeholders. (SDGs 5, 8, 16)	▲	The University launched the 'Women in Science' funding program that supports half the tuition fees of all women successfully admitted to any undergraduate program of the School of Engineering. See Case Study on Women in STEM. Although greatly impeded by the COVID pandemic, we managed to conduct events and targeted actions that raise awareness on gender equality matters in the student community as well as the general public. An example is the Red Card Campaign (a campaign that focuses on dating violence amongst University students) which the University designed, developed and ran. The campaign attracted a lot of attention and it is now designed to be delivered in high schools throughout Cyprus. The University became a partner of the "Solidarity Network Nicosia In Action" and through the network it provides social services for the benefit of vulnerable populations. We have also provided a platform to NGOs and other organizations that focus on equality, protection of refugees, human rights, and more.

TARGET	STATUS	COMMENT
Become the leading platform for promoting education and action against trafficking and human slavery both locally and abroad. (SDGs 5, 8, 16)	●	The University continues to support victims of human trafficking by offering full scholarships. In collaboration with NGOs and the Cyprus Police (Human Trafficking Unit), it organizes awareness campaigns which are open to the University community and the general public. The campaigns include, but are not limited, to: film screenings, discussions, presentations.
Engage with local and government stakeholders for reducing transportation impact caused by the University through integrated transport solutions. (SDGs 11, 17)	■	
Collaborate with local stakeholders to develop and promote waste reduction campaigns. (SDGs 12, 17)	●	In addition to research conducted on waste management, the University is providing consultancy services to both state institutions as well as the industry on effective waste management treatments and solutions. The "Save our Food" project, a pilot program that was implemented by Frederick University, has been adopted by the Municipality of Aglantzia in order to minimize waste of edible food in the community by offering it to people in need. The project also minimizes the number of people who face poverty and cannot satisfy their basic needs by offering them food that otherwise would be wasted.

Case Study

Member of a European University Alliance committed to Sustainability

Frederick University is a full member of the EU-CONEXUS Plus European Universities alliance. In 2022, the alliance was selected by the European Commission to continue receiving funding and it is among the 16 European University alliances selected to continue development for four more years.

EU-CONEXUS Plus focuses on Smart Urban Coastal Sustainability, aiming to develop innovative educational methods and interdisciplinary approaches in the fields of Sustainability, Circular Economy and Blue Growth.

EU CONEXUS Plus is a strong partnership between nine European universities developing science and innovation into a hub of excellence on Smart Urban Coastal Sustainability.

EU-CONEXUS Vision

The European University for Smart Urban Coastal Sustainability is an integrated transnational higher education and research institution covering the smart urban sustainable coastal development from a holistic perspective. The thematic focus creates a unique competitive advantage for EU-CONEXUS which is well-positioned to assemble and build on complementary thematic expertise from all its partners and regional ecosystems, through inter -and trans- disciplinary based approaches.

Perfectly distributed across Europe, the campus covers all European coasts. Students, teachers, researchers, and staff are studying, teaching, conducting their research activities, innovating and working on a European scale.



Case Study

A partner in the 100 Climate Neutral Cities initiative

The importance of climate-neutral and smart cities:

Cities play a pivotal role in achieving climate neutrality by 2050, the goal of the European Green Deal. They take up only 4% of the EU's land area, but they are home to 75% of EU citizens. Furthermore, cities consume over 65% of the world's energy and account for more than 70% of global CO2 emissions.

Since climate mitigation is heavily dependent on urban action, we need to support cities in accelerating their green and digital transformation. In particular, European cities can substantially contribute to the Green Deal target of reducing emissions by 55% by 2030 and, in more practical terms, to offer cleaner air, safer transport and less congestion and noise to their citizens.

Frederick University and the Municipality of Limassol signed a Cooperation Protocol with the aim of making Limassol a climate-neutral and smart city by 2030. Limassol has recently been selected as one of the 100 cities of the European Union that will participate in the EU Mission Cities, with the aim of becoming climate neutral and smart cities by 2030.

Through the Cooperation Protocol, the Municipality of Limassol and Frederick University declare their intention to cooperate for the development of the City's Climate Convention, through an ambitious and realistic plan that will incorporate new technologies to implement innovative actions for the green and digital transformation of Limassol, which will have environmental, economic and social impact and multiple co-benefits for its residents.



Case Study

Scholarships and other activities to combat the underrepresentation of Women in STEM

Despite the global effort to encourage girls and women to choose studies related to Engineering, Science and Technology, their involvement in these areas remains disproportionate. This means that women are excluded from the sectors with the highest growth; the sectors that present excellent employment prospects. By 2030, it is estimated that 40-160 million women will need to change careers and take on roles that require more sophisticated digital skills. If women do not make the necessary transition to technology and science, they will not have access to the job market and will be disproportionately affected by unemployment.

In June 2021, Frederick University launched the “To all women & girls: Join the journey in Engineering, Science and Technology” campaign under the auspices of the Commissioner for Gender Equality, Josephina Antoniou.

The campaign aims at educating girls from an early age about the prospects of engineering and technology. In this context, special scholarships are offered to all girls who choose to study undergraduate programs in Engineering and Technology at Frederick University. The scholarships cover 50% of the tuition fees and apply to the first academic year with the possibility of renewal for the duration of the studies, based on the academic performance of the student at the University. In addition, the University organises interactive, hands-on workshops and other activities focused on empowering young girls and motivating them to follow a career in STEM.

For example:

- In May and November 2022 it hosted STEM Days for girls aged 9-12 with creative and fun workshops around Sciences, Engineering and Technology. In parallel to the children activities, their parents/guardians had the opportunity to attend workshops on raising children without gender stereotypes.
- In July 2022, a STEM Camp took place for girls aged 13-16 in an entire week of STEM workshops and meetings with successful women in these areas.



Women's representation in Engineering, Science and Technology is crucial for the reduction of the gender gap in these areas

Frederick University offers 50% Scholarships to ALL girls who will choose to study a program in the University's School of Engineering



GOVERNANCE AND OPERATIONS

Targets 2022 Performance



▲ Exceeded or met ● On track ■ Partially met ▼ Not met

TARGET	STATUS	COMMENT
Establish programs for fully funded scholarships for Least Developed Countries as well as the bottom-income families locally. (SDGs 1, 4, 10)	■	A competent program has been developed that provides scholarships to several Least Developed Countries. The program has been disseminated but it achieved little impact as only a very small number of students benefited from it. The main reasons are the lack of a solution for affordable student housing which makes it difficult for students to address, and difficulties posed by immigration policies and part time work permits in Cyprus.
Increase, improve and modernize policies for rights' protection in the University community. (SDGs 8, 10, 16)	▲	Several policies and regulations have been introduced in the University, including the harassment and sexual harassment Code of Conduct and regulations for LGBTQ+ protection and support. A review and update policy exists in the University in order to ensure that issues relating to protection of rights of the members of our community are openly addressed.
Eliminate gender gap (<5%) in all aspects of the University including representation, management, and pay. (SDGs 5, 8, 10)	●	The University maintains high level of representation of women in both academic management (School Deans, Department Presidents) and administration. There is no significant pay gap beyond statistical deviations overall or within groups of employees. The key shortcoming of the University is the limited representation of women in the faculty of the Engineering School, something that is often found in most engineering schools. The other key shortcoming is the lack of representation of women at the Rector's Council (Rector, Vice Rectors). This is expected to be rectified in the next elections as during the existing tenure several women have been promoted to the Professor rank thus being eligible for election to these posts.
Adopt energy efficient solutions in all new buildings and infrastructure. Devise schedule for infrastructure upgrade to be more energy efficient and promote renewable energy. (SDGs 7, 9, 12, 13)	●	A competent Action Plan for energy use has been developed that is followed and annually reviewed. Several actions have been taken, including energy reduction investments, and the plan is implemented quite successfully with the noticeable delay in the investment in renewable energies which has been impeded by the global supply chain problems in the availability of solar panels.
Adopt policies for waste reduction from the organization's operations. (SDG 12)	■	A small number of measures beyond recycling and implementation of waste management regulations in accordance with the law have been implemented. Apart from energy use issues, a key waste reduction measure would be a solution related to student transportation and the use of cars, something which remains an open challenge.



Case Study

The Michael Frederickou Sustainability Awards

To demonstrate our commitment to the SDGs, since 2021, the University Council decided to dedicate a specific section of the annual **Michael Frederickou Awards**, the most prestigious awards granted by the University, to 'The SDGs Action Awards'.

The University awards:

- practices or activities from Frederick University faculty, staff, students and alumni that show significant impact with respect to SDGs, and
- outstanding individuals (Frederick University faculty, staff, students and alumni) who are demonstrating that it is up to us to inspire and enact change.

Submissions need to demonstrate how the nominee's activities contribute to at least one of the following:

- MOBILIZE others to take action for the SDGs,
- INSPIRE a shift in behaviour for the SDGs,
- CONNECT people and/or diverse partners, bridging the gap between citizens and institutions, to increase progress on the SDGs.



Case Study

Professional Development – A dedicated committee to the SDGs

Frederick University invests in ongoing staff development and has developed a Center (Personal and Professional Development @ Frederick) tasked with developing a comprehensive training scheme that includes formal and informal training based on a range of topics.

The breadth of the Center's tasks is very wide, from improvement of pedagogical techniques, development and provision of quality education for academic and administrative staff that will facilitate the integration of Sustainable Development Goals in all the dimensions of the University's operation, training on new technologies and dissemination of policies and procedures, to promotion of values, communication of organizational goals, and personal well-being. To achieve this, the Center is governed by the P²DF Board and is supported by seven Sub-Committees with their own portfolio.

One of the Sub-Committees is the "Integration of SDGs in the Operations of the University Committee". The objectives of the Committee are: to inform the University community about the SDGs and raise awareness on the relevant issues, as well as to provide quality training that will transfer the competences and skills necessary for the academic and administrative staff to effectively integrate the SDGs in their professional practice.

Following last period's plans, the Committee has delivered an online seminar on the SDGs and the role of the Universities' in their achievement, addressing both the academic and administrative staff. The seminar was provided by Maria Cortes Puch, Vice President of the Sustainable Development Solutions Network, and intended to raise the staff's awareness on the SDGs and the important role of the Universities in achieving them.

The outcomes of the courses and SDGs mapping (conducted in 2021-2022), indicated that the faculty needs further support to more effectively integrate the SDGs in their teaching. Therefore, the Committee has developed, and is planning to offer, two more trainings in the academic year 2022-2023: a lecture and a circuit of three experiential workshops focusing on pedagogical strategies that promote the development of sustainability competences (Fall 2022) and another workshop on deconstructing and reconstructing syllabi in order to integrate the SDGs more effectively (Spring 2023).



Targets

2022 - 2025

The University has completed its first action plan related to the Sustainable Development Goals for the period 2020-2022. Although significant progress has been made, as expressed in this report, the emphasis of the targets set for the prior period was mostly investigative and exploratory.

During the past period, the University has approved its 2022-2030 Strategic Plan in which Sustainable Development Goals are clearly engaged. For example, as stated under Governance, “...strong emphasis and focus on the challenges emerging from the 17 Sustainable Development Goals of the UN should be given and guide the policy development process”.

The new targets that have been selected for the next three-year period, 2022-2025, aim towards the deployment and absorption of SDG-related initiatives with more impact to the community.



Education

- E1: Revise curricula in all programs of study so as to increase and direct content towards support for SDGs.
- E2: Monitor relevance of content of educational programs and courses with SDGs and aim for increase of engagement at all programs of study.
- E3: Embed in all programs of study elements that increase transferable skills, work placements and entrepreneurship.
- E4: Offer programs of study specifically supporting SDGs, including programs that directly focus on the fields of sustainability, cultural heritage, climate, energy, environment, and justice.
- E5: Further expand and support lifelong learning activities for the society as well as enhancing short-term training programs with microcredentials for the University community and beyond.
- E6: Introduce novel, project-based, multi-disciplinary courses in various programs that are conducted in collaboration with the industry so as to enable students to address real-life challenges.

Research

- R1: Through specific KPIs, keep track on research output, both in terms of publications and implementation of research programs, in relation to the SDGs.
- R2: Maintain and expand the PhD sponsorship program for minorities and sections of the society that are underrepresented in higher education.
- R3: Directly fund through University resources research related to SDGs.
- R4: Establish an Innovation and Knowledge Transfer Office with specific focus on assisting members of the University community utilizing and bringing to the market innovative ideas as well as linking the industry with the University for offering and supporting solutions to real world problems.
- R5: Participate in the European University Alliance program through membership in EU-CONEXUS with the aim of developing pan-European research and solutions to the challenges of coastal development.
- R6: Develop and promote gender equality schemes for participation in and access to research.

Outreach

- O1: The University plans and implements several campaigns and events, physically and online, to raise awareness on specific health and mental health issues. It also organises on-campus or online events (lectures, conferences, seminars) to raise awareness on human rights issues and discuss relevant topics (such as trafficking, war in Ukraine, medical negligence), or to provide vocational training to professionals, such as lawyers, legal counsellors and others.
- O2: Maintain a migrant scholarship and support scheme for inclusion and reduction of inequalities.
- O3: Be an active platform for supporting SDGs in the community.
- O4: Transportation remains a significant challenge for the University at both its campuses as the main form of transport for students remains to be private cars. The University collaborated with the Municipality of Nicosia to plan an integrated bicycle route to serve the University, as well as planning for more frequent specialized small-buses routes to serve the campus. Additionally, campaigns for promoting other forms of transport apart from private car use are developed. Similar problems are faced in the Limassol campus.

Governance

- G1: Establish programs for fully funded scholarships for Least Developed Countries as well as the bottom-income families locally.
- G2: Increase, improve and modernize policies for rights protection in the University community.
- G3: Maintain gender equality with respect to representation in management and equal pay.
- G4: Invest in smart buildings and the adoption of energy efficient policies for the operations of the University. Pledge a 50% energy use target from renewable energy.
- G5: Review policies and deploy an action plan for waste reduction and adoption of e-work policies in the University.
- G6: Invest in the development of affordable housing for students, especially international students.



End poverty in all its forms everywhere

Scholarships to rural Schools

The University has built relationships with schools in rural regions across Cyprus and has been providing scholarships and fee reductions to low-income pupils to increase their access to higher education.

Full scholarships to Least Developed Countries

In an effort to support disadvantaged communities from across the world by responding to their education needs, in 2021 Frederick University launched a New Scholarship Scheme for International Students. As part of the program, a number of full scholarships for undergraduate programs of study for the academic year 2021-2022 were offered to disadvantaged high-school graduates from low and lower-middle income countries in collaboration with their embassies in Cyprus. The Scholarship Scheme will continue in the coming academic years, offering even more opportunities to low-income international candidates.

Member of NicInAct Solidarity Network

Frederick University is one of the partners of Nicosia In Action Solidarity Network (NicInAct), a project implemented by the Nicosia Municipality Multifunctional Foundation. The Solidarity Network Hub provides innovative social services to the most deprived citizens. In its role as a hub, it integrates various social services of the Foundation and of other non-governmental organizations (NGOs) who act within the area of Nicosia Municipality to create a network of social services. The overall objective of the project is to empower vulnerable people in Nicosia to become activated and become integrated in society. The project's purpose is to develop an integrated social service model to address the increasing needs of vulnerable and deprived populations in Nicosia. This integrated social service model aims to address the needs and challenges faced by vulnerable populations to become economically active, firstly by developing their entrepreneurship skills and employability profile, but also providing the social context for their access to their active economic population, and, secondly, by addressing first level needs such as food, financial independence, health, etc. and at the same time addressing psychosocial needs of all family members to enable them to participate in the social arena. The project is co-funded by the financial mechanism of Norway Grants (85%) and the Republic of Cyprus (15%).

Affordable Housing for Students

Limassol is the most expensive city in Cyprus for renting a house or apartment, making it increasingly difficult for students to find any type of affordable accommodation close to the campus. Addressing this issue, the University, for the academic year 2022 – 2023 and for the next five years, has concluded an agreement for affordable housing, providing its low-income students with access to subsidized studio apartments that are located close to the University's campus in Limassol and provide easy access to the city centre. A percentage of the rent is subsidized by the University, thus alleviating housing costs and expenses for low-income students for the duration of their studies.



Subsidized student housing in Limassol



On-campus Student Employment



Member of Solidarity Network

Student on-campus Employment

Students can take a temporary part-time job at the University during their studies. Employment lasts for a predetermined amount of time. A variety of campus jobs are offered (more than 50) to undergraduate and postgraduate students every year, from administrative to technical positions, and from one-off opportunities to regular shift work. Working on campus enables students to fund their studies and lower their university fees, as the compensation for the hours they are working is deducted from their tuition fees. Working on campus also enables them to build a network with professionals in their field, improve their skills and gain valuable work experience. Students from lower socioeconomic status have priority access to these opportunities.

Financial Aid to Low-Income Students

Frederick University is committed to establishing an academic environment that grants everybody an equal access to education. It provides an extensive financial assistance scheme which offers a partial reduction of fees or full scholarships to incoming students based on socioeconomic criteria, regardless of the students' academic performance. This includes refugee and displaced people whose access to education is limited because of poverty as well as their immigration status. Financial aid is also given to current students for a variety of reasons including: overall financial income in the family, health problems in the family, single-parent families, number of dependents in the family, distance of residence from the university, unemployed parents/guardian and other reasons. Overall, more than 15 different scholarship and financial aid schemes are offered to current and new students.

6%

Of all publications in Cyprus (Percentage of publications in Cyprus made by Frederick University between 2016-2021)





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

Collaboration with relevant organisations

Frederick University has signed a Memorandum of Cooperation (MoC) with the Cypriot Farmers Association, the biggest farmers' Union in Cyprus, and the Agricultural Research Institute (ARI), a governmental department conserving thousands of endemic seeds and conducting research aiming to create and transfer knowledge for the development of agriculture and to solve problems at the farmer's level. The collaboration with these two organisations includes research and other common activities in the area of agriculture development, food security and seed conservation.

Conserving native seeds

Frederick University is a member of ENSCONET (European Native Seed Conservation Network). The objective of the network is to improve quality, coordination and integration of European seed conservation practice, policy and research for native plant species and to assist EU conservation policy and its obligations to the Convention on Biological Diversity and its Global Strategy for Plant Conservation. The network is coordinated by the "Millennium Seed Bank" of the Royal Botanic Gardens, Kew, United Kingdom.

MSc in Climate Change, Agricultural Development and Food Security

Frederick University participates in an Erasmus+ action for developing an inter/multidisciplinary MSc Programme in Climate Change, Agricultural Development and Food Security (CCSAFS). Graduates will be equipped with interdisciplinary knowledge and agro-food entrepreneurship and ethics to promote sustainable agricultural production, food security and climate change adaptation. The programme is expected to help respond to the threats to agriculture and food security in a changing climate, exploring new ways of helping vulnerable rural communities to combat hunger and adjust to local, regional and global changes in climate.

IoT-based low-cost hydroponics system

Water shortage and pollution are environmental threats affecting large parts of the EU as well as the entire world. Climate change is expected to further increase water shortage and threaten food production. This problem must be addressed on many levels. Frederick University's iPONICS start-up project developed an offgrid, IoT-based low-cost hydroponics system for small-scale farmers and even hobbyists, to help them adapt agricultural production to climate change and limited water supply, converting a low-productivity agricultural land to high-productivity. The vision of the start-up is to advocate sustainable agriculture and combat climate change.

Save our Food project

"Save our Food" is a funded project coordinated by Frederick University, with the Municipality of Aglantzia, the Cyprus Youth Organization, the Nicosia District Voluntary Coordination Council and the NGO "We Can" as partners. The project reduces the number of people who face food insecurity by implementing an innovative practice that has not been implemented in Cyprus before. It minimizes waste of edible food in cafés, restaurants, bakeries, and catering businesses in



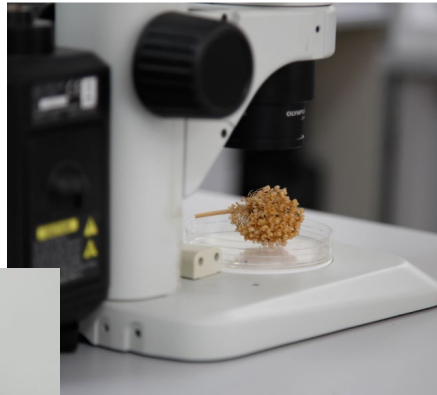
Food delivered to underprivileged families as part of "Save our Food" project

Cyprus, by offering it to people in need, thus reducing also the number of people who face poverty and cannot satisfy their basic needs by offering them food that otherwise would be wasted. The project managed to reduce the amount of food waste in the food and catering industries, while supporting people in need. From 2020 to 2022 it has offered more than 30.000 portions of food to people facing food insecurity. In addition, awareness-raising workshops on food waste and circular economy were organised. In addition to coordinating the project, through its Mobile Devices Lab, Frederick University has designed and developed a web-portal and a smartphone application for managing and viewing all data related to the "Save our Food" system.

AgriLoRa: A Digital Twin Framework for Smart Agriculture

Smart agriculture producing high yields with optimal use of resources has become a 'must' in the world due to the increasing population and scarcity and cost of resources, such as water, fuel and fertilizers. Use of advanced technologies in agriculture is especially needed in countries where agriculture is a major contributor to the economy and the population is increasing at a steady rate. The rise of Internet of Things (IoT) in the past decade has allowed physical devices of various types to be

accessible via the Internet, making it possible to create automated monitoring and decision-making systems to reduce resource consumption and production costs in agriculture. Nevertheless, most developing countries have not been able to adopt these systems at large due to barriers, such as high cost and high power consumption. Considering these issues, the AgriLoRa project, in which Frederick University participates, proposes a high precision, low-cost IoT-based smart agriculture framework. The proposed framework aims to create farmland digital twins, which allow for watching the status of farmlands in near real-time through their digital replicas and taking appropriate actions recommended by intelligent processing of the gathered data. The overarching goal of the framework is to create an extensible system architecture for sustainable precision agriculture, which provides early detection of crop diseases and nutrient deficiencies and improves irrigation and fertilization strategies to achieve the highest yield and lowest production costs in a highly automated manner.



Conserving native seeds is one of the objectives of the European Native Seed Conservation Network

2%

Of all publications in Cyprus (Percentage of publications in Cyprus made by Frederick University between 2016-2021)





Ensure healthy lives and promote wellbeing for all at all ages

Promoting physical activity in schools

HEPA (Health Enhancing Physical Activity) is a project coordinated by Frederick University and funded by the European Commission in the framework of Erasmus+ Sport Action programme. Seven organizations in six European countries participate in HEPA, which adopts a school-based holistic approach to promote leisure time physical activity and the wellbeing of children. As the coordinator of HEPA, Frederick University is responsible for managing and organizing the project, developing relevant and targeted educational material and promoting it to educational authorities and education policy makers. The purpose of the project is to promote physical activity not only through physical education classes but across all school subjects.

GUIDed

The project integrates existing open-source technologies, platforms and tools, and assembles a smart AR-enabled platform to offer a set of simple, plug-and-play, assisted-living (AL) services for elderly adults and their care-givers. Frederick University's Mobile Devices Laboratory is responsible for the research and development activities related to the augmented and virtual reality functionalities of the GUIDed services.

BioNM Lab

Frederick University's Bioengineering and Imaging for Nuclear Medicine (BioNM) Lab focuses on optimising the diagnostic value of various nuclear medicine procedures in the framework of improving public health. Since 2010, the research group has coordinated and participated in several funded research projects, has organized an International Conference and several seminars, and has published in several scientific journals and proceedings.

CY FIT

Frederick University implements 'CY FIT', the national programme for the evaluation of the physical condition of students in secondary education. The programme aims at preventing and combating child obesity. The University will develop an online platform to collect and evaluate data and develop targeted actions to enhance children's health.

Health outreach programmes

The University plans and implements several campaigns and offline and online events to raise awareness on specific health and mental health issues.

Mental Health Support for students and staff

The University's Counselling Centre's primary purpose is to empower students so that they are able to perform productively both in academic tasks and in their personal lives. The Centre employs a registered professional social worker and a professional psychologist, providing free one-on-one counselling sessions to students. The Center regularly holds Seminars and Workshops related to wellbeing and mental health which are open to the entire University community.

Exploring the impact of the Covid-19 pandemic

The Department of Psychology and Social Sciences and its newly-founded Centre of Resilience explored the psychological impact on University students and their quality of life, revealing six idioms of distress due to the pandemic and the strict measures to contain its spread: (1) Demoralization and pessimism towards the future, (2) anguish and stress, (3) self-depreciation, (4) social withdrawal and isolation, (5) somatization, (6) withdrawal into oneself. It has also studied the impact of the Covid-19 lockdown measures on mental health and well-being and the role of resilience.

Collaborations with health institutions

The School of Health Sciences collaborates with private and public health institutions and health services providers to conduct research and implement various actions to improve health and well-being outcomes of the general public and specific patient groups.



Platform offering assisted-living services, developed by "GUIDed" project

Collaborations with health institutions

2%

Of all publications in Cyprus (Percentage of publications in Cyprus made by Frederick University between 2016-2021)





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

Lifelong Learning Policy

Frederick University assigns particular importance to Lifelong Learning initiatives and has undertaken a series of actions to provide such opportunities. The University has set up the Frederick Training and Certification Center that systematically offers training programs on a wide variety of fields. In addition, special-focus initiatives for lifelong training have been established, such as the Cyprus Marine Technology Academy and the School of Greek Language. The University participates and promotes Erasmus+ activities, through which students and graduates gain invaluable education and training experiences. In order to educate a new generation of lifelong learning educators and activists, as well as promote research and knowledge in the field, the University offers the MA in Adult Education program of study. To provide lifelong learning opportunities to the general public, the University organises and hosts events and educational activities on campus, off campus and online that are open to the general public. In addition, the University, in cooperation with UNESCO, established an UNESCO Chair on Lifelong Learning and Adult Education. The purpose of the Chair is to promote an integrated system of research, training, information and documentation on lifelong learning and adult education in Cyprus and other countries in Europe, Asia and the Pacific.

Forest School

In 2021 Frederick University launched the Forest School in the Kornos forest where children aged 3-5 learn in a natural way, through free play and self-led outdoor activities. The Forest School, like the University's School of Nature which operated for years as a summer school, adopts forest pedagogy and the children's creative development is guided by the educators, who are primary school teachers, students and graduates of the University.

Student Success

The University operates the Peer Tutoring Centre. Tutoring services are offered by Peer Tutors, students employed by the University that have excelled in the course they tutor. Their goal is to assist students with the course content and help them develop study skills.

Educational Exhibitions to inspire learning

Through educational exhibitions on specific topics, the University aims to make scientific matters accessible to young people and the general public and inspire learning. The exhibitions are open to the public and offer free admission. Currently, the University runs the "The Sun and Us Space Weather Exhibition" which is a collaboration between Frederick University and the European Space Agency. The exhibition aims to introduce the public to Space Weather, the changes that occur in the Sun and affect both space technology systems and the Earth itself.

Educational activities open to the public

The University allows members of the general public, i.e. non-registered students, to attend selected courses and lectures as audience participants at no cost. In addition, the University libraries are open to the general public. The University also runs a number of outreach programs for the community on and off campus. These include lectures, exhibitions, seminars and workshops aiming to raise awareness, build understanding and knowledge on several issues ranging from health to art and culture, and from humanities to science and technology.



"The Sun and Us" educational exhibition



UNESCO Chair on Lifelong Learning and Adult Education established by Frederick University



Forest School

Integration of SDGs in Programs of Study

The University's policy is to integrate dimensions of the SDGs into all undergraduate and postgraduate programs of study, as well as PhD programs. At the moment, all programs include either courses relevant to SDGs and/or ESD dimensions. Great importance is placed on PhDs, where students from different disciplines develop their research on various SDGs in formal, informal and non-formal education. Examples that showcase how the University addresses SDGs through its programs of study: Integrated Master of Architect Engineer, MSc in Education for Sustainable Development and Social Change, MSc in Energy Engineering, MSc in Conservation and Restoration of Historical Structures and Monuments. The University also offers free elective courses, available to all students, dedicated to the SDGs.

Education for all pupils in STEM disciplines

Frederick University is a member of the Fairness in Teaching (FIT) alliance, a new Erasmus+ project which aims to develop and advance teaching practices using an intersectional and fair approach especially in STEM disciplines (Science, Technology, Engineering, Mathematics), and give equal opportunities and access to STEM to a diverse range of pupils (boys, girls, less advantaged audiences, refugees, migrants, etc). The project targets primary and secondary level Education. Through the Project, the five partners in Luxemburg, Italy, France and Cyprus aim to create a Competencies Framework for fair teaching in primary and secondary education, which is expected to become a reference in education, and to also develop workshops and training sessions (online as well as face-to-face) for this Framework.

5%

Of all publications in Cyprus (Percentage of publications in Cyprus made by Frederick University between 2016-2021)





Achieve gender equality and empower all women and girls

Gender Equality Awareness Campaigns

Every year, for the past 12 years, the University organises seminars, public lectures, community events, conferences and workshops to raise awareness on gender equality within the University community and the general public. It has implemented several successful campaigns on promoting and raising awareness on gender equality and fighting gender-based violence and human trafficking.

Supporting Trafficking Victims

The University has close links with NGOs that are supporting trafficking victims and offers scholarships to victims of sexual exploitation.

Equality and Awareness at Frederick

The University established EnAF, a Center on Gender Issues, Diversity and Equality. EnAF comprises faculty and administrative staff with the primary aim of conducting research and raising awareness amongst the University Community and the society at large on gender equality and diversity issues. The Center also functions as an advisory body to the Council, the Senate and the Schools and Departments for the promotion of equality and diversity in all levels of operation and academic life. It has developed a Code of Conduct on Harassment and Sexual Harassment in the workplace, which serves as a guide for all members of the University community and outlines the procedures that are to be followed in case of harassment and sexual harassment. The Center is currently developing a Code of Conduct on Language Use, which will promote the use of gender-sensitive language and reduce gender stereotyping. The University has also included training on gender bias and other gender issues in its training plan.

Combating sexual harassment and gender based violence in Sports

Frederick University participates in iSports (Integrated Approach for the Prevention, Detection and Combat of Sexual Harassment in Sports), an Erasmus+ programme aiming at establishing mechanisms to protect and support young athletes from any form of sexual harassment, developing a set of tools to detect cases of sexual harassment and creating a safe environment so that they can be reported. The University also participates in TEachers' TRaining to combat gender-based violence In Sports (TETRIS), an Erasmus+ KA2 project which will educate Physical Education (PE) teachers, coaches and athletes on the prevention and combating of gender-based violence in sports.



STEM workshops for girls, as part of Women in STEM campaign



The Red Card Campaign is an awarded campaign running among the University Students Community to raise awareness on dating violence and gender equality.



iSports Erasmus+ project on combating sexual harassment and gender-based violence in Sports

Women in STEM Campaign

The University launched a dynamic, long-term campaign to tackle the underrepresentation of women in engineering and technology, titled: "To all women and girls: Join the Journey in Engineering and Technology". The campaign was launched in June 2021 under the auspices of the Commissioner for Gender Equality, Josephina Antoniou. It aims at educating girls from an early age about the prospects of engineering and technology, areas in which women's participation is disproportionate, even though these sectors have excellent employment prospects and offer attractive pay packages. In this context, special scholarships are offered to all girls who choose to study undergraduate programs in Engineering and Technology at Frederick University. In addition, the University organizes interactive, hands-on workshops and other activities focused on empowering young girls and motivating them to follow a career in STEM. For example, in May 2022 it hosted a STEM Day for girls aged 9-12 with creative and fun workshops around Sciences, Engineering and Technology. During this

day, more than 70 girls had the opportunity to participate in free robotic workshops, science experiments, architecture workshops and creative reading and writing sessions, held by members of our University community. In parallel to the children activities, their parents/guardians had the opportunity to attend workshops on raising children without gender stereotypes. A STEM Day in Limassol Campus followed in November 2022 and was attended by 70 girls aged 9-12. In addition, a STEM Camp took place in July 2022 and engaged girls aged 13-16 in an entire week of STEM workshops (engineering, technology, architecture, etc).

2%
Of all publications in Cyprus
(Percentage of publications in Cyprus made by Frederick University between 2016-2021)





Ensure availability and sustainable management of water and sanitation for all

Enriched academic programs

The University's BSc in Civil Engineering Program includes courses (both required and elective) that cover, among other subjects, the processes and techniques applied to understanding the requirements for the provision of stable, high quality and sustainable water resources, the role of hydrological knowledge in securing safe and sustainable water supplies, ecological engineering and green technologies such as constructed wetlands for wastewater treatment:

- Hydrology and water resources engineering
- Water and water waste engineering
- Environmental pollution control

Interactive workshops for children

During the European Researchers' Night, which was held in September 2022 in Nicosia, Frederick University hosted an interactive workshop for children to raise awareness on the life cycle of water and its sustainable usage. The workshop was designed specifically for the event by the Forest School, an initiative of Frederick University, and aimed at raising awareness among the new generation about the importance of water and conscious water usage. The aim of the activity was to show children how to use, reuse and save water in creative, innovative and sustainable ways. During the workshop, children made a water filter and a biodegradable herb plant with drip irrigation watering system.

Protection and promotion of water elements

Frederick University participates in Waterways, an Interreg project which aims at the enhancement and improvement of the attractiveness of areas of natural and cultural interest through the protection and promotion of important "water elements" on the E4 path in Crete and Cyprus. The project's objectives are: a) improving the attractiveness and increasing the number of visitors to the intervention areas that are disadvantaged in terms of economic development and are more prone to climate change, b) their utilization and promotion as cultural and geological tourist destinations all year round, thus extending the tourist season. The increase of traffic will be achieved through the upgrade of the tourist product with the introduction of the water element as an important factor shaping both the natural landscape and culture in these areas.

Water-conscious building standards and planting

Frederick University applies building and planting standards to minimise water use and waste. For example:

- Conventional faucets have been replaced with proximity sensor controlled taps in all wash areas to prevent unnecessary water loss
- A plumbing team is available on-campus for routine maintenance and to correct water leakages
- Dual syphon flush tanks are used in toilets for cautious water usage
- The majority of the plants in the University's outdoor areas are native, drought-resistant plants that have lower water requirements. The design of the University's gardens is overseen by the Nature Conservation Unit of the University, which ensures that water-conscious techniques are applied.
- The University's plants are watered using drip watering systems that use available water with maximum efficiency, eliminating unnecessary waste and evaporation.



Civil Engineering students learn about sustainable water resources

The "Waterways" project aims at the protection and promotion of important "water elements" in Cyprus and Crete.

Interactive workshops on the sustainable usage of water during the European Researchers' Night

Native, drought-resistant plants are planted in the University's outdoor areas

1%

Of all publications in Cyprus
(Percentage of publications in Cyprus made by Frederick University between 2016-2021)





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

Green Technologies in Public Transportation

The Cyprus public bus transportation consists of about 2600 buses consuming around 60,000,000 liters/year diesel fuel. Fuel consumption is a major cost for the transportation companies and it causes environmental pollution. The general objective of the project BUS-Fuel-Savings is to develop an innovative HHO gas generator, integrate it onto the Internal Combustion Engine of existing public transportation buses, test it and prove that it is capable of achieving fuel savings of 5 to 30% and major reductions (>20%) in exhaust gas-emissions. Frederick Research Center is the main Research Partner in this project, through the “Conventional and Alternative Energy Sources” research group.

Energy Efficiency projects

Frederick Research Center is a partner in the research project “Next-generation Dynamic Digital EPCs for Enhanced Quality and User Awareness” (D²EPC). The project has received a €2.5m grant and is funded by the European Commission under the Programme H2020-EU.3.3.1 - Reducing energy consumption and carbon footprint by smart and sustainable use. The project aspires to set the grounds for the next generation dynamic Energy Performance Certificates (EPCs). The proposed framework engages actual measured data coming from smart devices and introduces a set of novel and user-friendly indicators. To achieve this, it will make use of 6D Level 3 BIM for producing a building’s digital twin representation. The proposed indicators for smart-readiness, sustainability, environmental, human comfort and financial aspects will make EPCs a realistic, accurate and comprehensive information source that can induce energy efficient behavioural change towards smart buildings. The D²EPC digital platform will enable the issuance of next generation EPCs on a regular basis and will be armored with additional services. PRECEPT is a project using cutting-edge technologies to transform conventional residential buildings into highly efficient and proactive residential buildings. The project will facilitate the smooth and almost zero

operational costs of transformation, increasing the buildings’ performance, energy efficiency, and the occupants’ well-being. SmartLivingEPC project aims to deliver a certificate which will be issued with digitized tools and retrieve the necessary assessment information for the building shell and building systems from BIM literacy, including enriched energy and sustainability related information for the actual performance of the building. SmartLivingEPC will provide information in relation to the operational behaviour of the building, by introducing a new rating scale, based on a weighted approach of life cycle performance aspects, building smartness assessment and information on the actual performance of the technical systems of buildings provided by technical audits.

Energy-efficient campus buildings

Frederick University treats energy efficiency as a key factor in any decisions taken for renovation or new building construction for the University. According to the Energy Policy of the University, all buildings in which the University operates and are owned by the University shall reach 80% renewable energy use, and existence of renewable energy will be a key factor in renegotiation of new leases. Furthermore, by 2040 the University will use 100% of its energy from renewable sources.



The D²EPC digital platform enables the issuance of next generation Energy Performance Certificates



Research groups actively involved in research related to renewable energy systems.

Contribution to policy development

Frederick University provides consulting services to the Ministry of Energy, Commerce and Industry, the Ministry of Transport, Communications and Works, the Ministry of Agriculture, Rural Development and Environment, and other government bodies and local authorities, for energy-related policy development. The consultancy projects include identifying problems and challenges, collecting and measuring data, revising existing processes, methods and systems, developing policies and strategies, preparing feasibility and cost benefit analysis, developing action plans, developing guides, standards and methodologies, developing educational material and organizing trainings. In addition, the University participates in several consultancy projects on energy efficiency. An example is PRO-ENERGY, the objective of which is to improve energy efficiency of public buildings (municipal/provincial/regional buildings, schools, universities, health centres, hospitals, museums, sports facilities etc). The project aims to develop and implement a Joint Strategy and Action Plan, increasing competences of buildings’ owners & operators, developing and applying technologies and tools to reduce energy consumption in public buildings, and promoting generated good practices and results to local/regional/national entities

in the Balkan-Med region. The project outcomes will include: increased energy efficiency in the participating territories, improved funding opportunities, and increased local awareness on sustainable energy policies.

Active Research on Renewable Energy

At least three of the University’s research groups are actively involved with sustainable and renewable energy applications. These are:

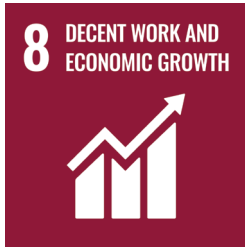
- The “Sustainable Energy Research Group”
- The “Conventional and Alternative Energy Sources Group”
- The “Electrical Energy and Power Systems Group”.

Collectively, these groups have been involved in more than 20 projects on subjects relating to renewable and sustainable energy applications, energy conservation in buildings, and biomass.

10%

Of all publications in Cyprus
(Percentage of publications in Cyprus made by Frederick University between 2016-2021)





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

Students and graduates employability

The University's Career Office provides professional, high-quality career services for students, in collaboration with employers. Its aim is to help students enhance their employability by providing the necessary tools and training, through workshops and mentoring. It also supports them in exploring career opportunities and creating contacts with the job market through career events and a dedicated job listings service which posts job, training and continuing education opportunities in Cyprus and abroad. The University is dedicated to supporting graduates as they continue their journey and helping them connect with the University, fellow alumni and the industry. The Alumni Office provides targeted benefits and services to them, as well as regular updates on career and networking opportunities. To boost their employability, the University's Career Office provides career counselling sessions to graduates through seminars, lectures and workshops focusing on training and professional skills development.

Certified Good Practices Employer

Frederick University's workplace culture is respectful and inclusive, ensuring all employees feel valued and have the opportunity to contribute to innovation and growth. In 2015 the University participated in the project "Actions to Reduce the Remuneration Gap between Men and Women", was evaluated by the Ministry of Labor, Welfare and Social Insurance, and was one of the first organisations to be certified as "A Good Practices for Gender Equality in the Work Environment Employer".

Creating green jobs

The University participates in YENESIS (Youth Employment Network for Energy Sustainability in Islands), a project which brings together islands from eight countries in Europe with the aim to create green jobs in islands. The project was presented to the United Nations Education for Sustainable Development Committee as a good practice to be adopted by Member States..

Ongoing staff training

Frederick University invests in on-going staff training and skillset development and has developed a dedicated Center (Personal and Professional Development @ Frederick) tasked with developing a comprehensive training scheme that includes formal and informal training based on specific needs that have been identified.

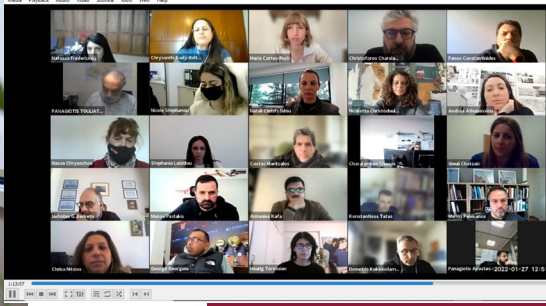
Student internships

To prepare students for the world of work, the University introduced internship as a course in all programs of study. This gives students the opportunity to put their skills to practice and gain valuable work experience during their studies. Types of practical training include paid work placements in organizations in Cyprus and abroad, summer internships in Cyprus and abroad, and on-campus employment.

Student internships



Frederick University's Center on Personal and Professional Development offers on-going staff training



"Yenesis" project aims at creating local green jobs



Diversity Charter

The University has signed the Diversity Charter Cyprus (DCC) to promote inclusivity in the workplace and is committed to following the Practical Guide of DCC and the accompanied online training, in collaboration with both the national and European Platform of Diversity. It is also committed to enhancing its long-term efforts to maintain a workplace that is open to everyone, regardless of nationality, ethnicity, race, disability, age, sexual orientation, gender identity, religion and any other characteristics. The principles of non-discrimination are also included in the University Charter.

Modern Slavery prevention

The University is committed to ensuring that there is no modern slavery or human trafficking in its supply chains or in any part of its business. It is committed to acting ethically in all its business relationships and to implementing effective systems to ensure slavery and human trafficking is not taking place. The University undertakes the following to prevent modern slavery: (a) Effective Human Resources policies, (b) Ensuring major contractors have undertaken appropriate action, and (c) Including appropriate clauses in purchasing and contracting contracts.

4%

Of all publications in Cyprus (Percentage of publications in Cyprus made by Frederick University between 2016-2021)





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

Research & Innovation activities

Frederick University places great emphasis on the development of R&I activities that, besides contributing to science and knowledge, directly benefit the society (businesses, government, citizens). These R&I activities are in the form of applied research for optimally addressing technological, economic, social and other challenges. Therefore, Frederick University encourages its members to continuously seek contacts and collaborations with relevant institutions and companies in the country. Overall, technology and knowledge transfer to the industry is practiced by the University through the promotion and support of the following functions:

- Consulting services to companies and other organizations
- Contract Research for companies and other organizations
- Participation in collaborative research and innovation proposals and projects with companies
- Establishment of collaborations with Incubators / Accelerators for supporting start-up ideas
- Participation in innovation and entrepreneurship competitions or hackathons
- Training programs responding to industry/ business needs through the University's Training and Certification Center (EKEK)

Training SMEs on blockchain

The University assists SMEs to improve their place in business economy through BCT4SMEs, a project that supports owners and managers of SMEs to use blockchain technology and benefit from its advantages.

Active Students

Through the 'Active Students' initiative, the University engages students in co-curricular activities. Students have the opportunity to apply theory to practice in real working conditions, develop and test innovative ideas, work with companies and organizations, and develop soft skills and competencies that are important for their future careers.

Spin-offs

A number of spin-offs have been established to exploit intellectual property that has originated from within Frederick University:

- Kyamos, a start-up that develops software to design and optimize engineering systems and facilities.
- HyStore Tech, with activities that cover H2 production, purification, storage and the use of H2 in applications such as green electricity production with H2/Fuel Cells.
- RF and Microwave Solutions, offering modelling, simulation, measurement, characterization and design of RF components in various technologies, circuits and antennas, as well as technical assistance and consultancy.
- Cloud Water, an R&D start-up focusing on low-cost GNSS receiver development and on high-level research on GNSS receiver's software and hardware development, as well as on GNSS Meteorology, Geodesy and Positioning, Atmospheric Remote Sensing and Weather Prediction.
- AlInfinite, exploiting specialised software developments, starting with the DineTours platform, a virtual tour and online booking platform.
- Euphyia Tech, which launches a brand new, innovative service for organizations in Europe: the Smart Readiness Audit.



Students participating in innovation competitions

Meeting of the partners of "HEInnovaSport" project which aims to strengthen innovation capacity



Students from various disciplines participate in the FUF (Frederick University Formula) Team and apply theory to practice

Students participating in innovation competitions

Frederick University encourages its students to participate in local and international innovation competitions. As an example, in April 2022 Frederick University students from various disciplines participated in Beyond Pre-Accelerator Programme and presented their innovative ideas in the field of Digital Health. Participants went through the entire entrepreneurial process, from generating business ideas to creating an MVP (minimum viable product).

Building innovation capacity and entrepreneurship skills

HEInnovaSport is one of 26 projects that have secured funding from the European Institute of Technology, with the participation of six universities, including Frederick University. The project's vision is to improve the innovation and entrepreneurial capacity of the participating institutions. HEInnovaSport calls for innovation and entrepreneurial capabilities and aims to convert them to business opportunities and societal impact. The project will strengthen innovation capacity through targeted efforts, exchange of best practices, and listening carefully to individuals and organisations that are proficient in innovation and entrepreneurship. HEInnovaSport will create synergies between Higher Education Institutions and the EIT Knowledge and Innovation Communities, EIT Health and EIT Digital. The partners are committed to becoming future key actors in sport science and public health innovations and entrepreneurship, better partners to society, and engines of impact for the benefit of local, regional and international innovation ecosystems.

10%

Of all publications in Cyprus (Percentage of publications in Cyprus made by Frederick University between 2016-2021)





Reduce inequality within and among countries

Accessible System and Social Media Application for Deaf Users

The University's Mobile Devices Laboratory is currently involved in Asm4Deaf, a project which aims at developing a cloud-based system and an innovative mobile application that supports the use of multiple sign languages within mainstream social media and networking platforms (e.g. WhatsApp, Viber etc.).

Teaching Greek to TCNs

The University participates in the project "Greek Language Program and Mediation Services for Minor Third-Country Nationals (TCNs)", which is co-funded by the Asylum, Migration and integration Fund (90%) and the Republic of Cyprus (10%). Through the program, TCN primary school students are expected to acquire basic language skills that are essential for the smooth integration of TCN children in schools and in the Cypriot society.

Supporting Refugee Students

Frederick University is committed to providing equal opportunities for students from refugee backgrounds. The University's Scholarship Scheme supports refugee students financially and the Counselling Centre helps improve the wellbeing of students from refugee backgrounds.

Inclusion of persons with disabilities in sports

The issue of recruiting, supporting and training students with disabilities is a recurrent one in higher education institutions. Sports Disability Inclusive Experience (SHIE) is an Erasmus+ project that aims to offer students with disabilities training abroad, coupled with the discovery and/or practice of one or more sports activities, and more generally to promote their international mobility. The main elements of the project foresee that the beneficiary students will be considered in the same way as the "able-bodied" students in mobility, and will be mixed with them in the exercise of the sports activities and the follow-up of the training courses.

Digital Health Literacy for disadvantages adults

The project DHeLiDA: Digital Health Literacy for Disadvantaged Adults is a European cooperation project aimed at improving the digital health literacy among vulnerable target groups, especially elderly people and people with migrant background, by helping them gain new digital skills and learn how to access reliable sources on a topic as important as health. DHeLiDA is developing tools to enable citizens to better manage their health and illness online, improve prevention, enable more accurate diagnosis and treatment, and facilitate communication between patients and health care professionals. The project intends to fill the digital health literacy gap through the production of three main outputs:

- Crowdsourcing Platform on Digital Health Literacy
- DigCompHealth Foundation Framework
- DHeLiDA Training and Sustainability Toolkit

Supporting underrepresented groups

The University offers comprehensive services to enhance access to educational activities and self-development opportunities for students of all backgrounds, identities and experiences.

Anti-discrimination Policy

The University adopts a no-discrimination policy as explicitly expressed in article 4(c) of its Charter and does not accept any discrimination or bias, whether obvious or tacit, in its community in relation to ethnicity, race, color, religion or belief, disability, gender, or sexual orientation.

Students with Learning Difficulties & Disabilities

Frederick University is committed to establishing an academic environment that grants everybody an equal access to education. The Counselling Centre is responsible for providing support to students with learning difficulties or disabilities and has developed clear policies in order to safeguard an inclusive environment for all. Its primary role is to determine eligibility and to provide academic accommodations for students with disabilities. Newcomers with disabilities are required to participate in specialized workshops focused on enhancing their study skills. The workshops are provided by specialized professionals and cover topics such as time management, planning, stress management and goal setting. They also have priority access to support services such as peer tutoring. Finally, teaching staff is trained on inclusive teaching and



Frederick University's Counselling Centre provides support to students with learning difficulties or disabilities



Kick-off meeting of "DHeLiDA" project which aims at improving the digital health literacy among vulnerable groups

5%

Of all publications in Cyprus (Percentage of publications in Cyprus made by Frederick University between 2016-2021)





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

Managing Natural Disasters and Building Safety in Cyprus

Frederick Research Center coordinates “ISTOS” (Center of Innovative Solutions for Building Safety), a Horizon 2020 project that seeks to strengthen the field of Civil Engineering research in Cyprus, through a high-level collaboration that will work towards understanding natural disasters and assessing the vulnerability of communities, thus leading to achievement of enhanced post-disaster management results.

Smart urban coastal sustainability

Frederick University has joined EU-CONEXUS, a consortium of European Universities focused on Smart Urban Coastal Sustainability. EU-CONEXUS has been selected by the European Commission as one of four European University Alliances in the framework of the European Universities’ initiative. EU-CONEXUS’ mission is to develop innovative educational and research methods and interdisciplinary approaches covering societal challenges faced by urbanised coastal areas and sustainable development.

Contribution to National Policy Making

The University undertook studies for the Government Geological Survey Department (technical adviser of the state for all geo-matters) that are used for the Cyprus General Building Regulation and the Anti-Seismic Regulation.

Safeguarding our Cultural Heritage

Recognising the imperative need to preserve, protect and promote the cultural heritage, Frederick University offers the Postgraduate Program MSc in Conservation and Restoration of Historical Structures and Monuments which aims at training scientists of different specialisations in this field. The program covers not only the principles and methodologies concerning the protection and restoration of historical buildings, but also the sustainable restoration techniques and practices. Through the process of close examination of the subject-matter, students acquire the necessary assets to repair, reinforce, restore or even change the use of a historical building in a sustainable way.

Constructional analysis of historical buildings

A book titled “Constructional analysis of historical buildings” features ten years of research and documentation by Frederick University’s Department of Architecture. Students and academics of the Department analysed and documented a great number of historical structures within the decade 2011-2021. Twenty four of these monuments are included in the 416-page book.

Contribution to arts and culture

The Arts and Communication Department has a valuable contribution to the arts and culture of Cyprus due to its dynamic and outward-looking approach. During its 38 years of operation, it has produced more than 2000 graduates and has won more than 150 awards and distinctions in international and local competitions. The Department’s academics have participated in more than 600 exhibitions and have strong links with the industry and the community.



The University’s Urban Planning & Development Unit conducts urban planning research and provides consulting services



Frederick University offers the MSc in Conservation and Restoration of Historical Structures and Monuments, recognising the need to preserve, protect and promote the cultural heritage.



The University’s libraries are open to the general public.

Open library policy

The University libraries, which are among the largest libraries in Cyprus, are open throughout the year to the general public and are considered a focal point for the local community. There are fully equipped libraries at both University campuses (Nicosia and Limassol) with general-purpose PCs, uninterrupted internet access, comfortable and inspiring study spaces, meeting and conference tables and informal seating areas.

Urban planning research

The University’s Urban Planning & Development Unit deals with every aspect of built environment in its three dimensions (social, economic and environmental). The Unit’s research focuses on how spatial changes to the built environment affect the social and cultural life, the economy and the environment. The Unit also provides a variety of consulting services in the fields of Built Environment, Planning and Urban Design.

Platform for mapping of cultural heritage

Europe’s Cultural Heritage is at risk, endangered by environmental processes enhanced by climate changes and anthropogenic pressure. STABLE (STructural stABILity risk assEssment) addresses the design and development of a Thematic Platform, combining structural stability models, damage assessment simulation tools, advanced remote sensing, in-situ monitoring technologies, geotechnics and cadastral data sets with WebGIS application for mapping and long term monitoring of CH. This will enable effective monitoring and management of the CH to prevent, or at least reduce, catastrophic damages.

Portal for heritage buildings

The project “Portal for heritage buildings integration into the contemporary built environment” (PERISCOPE) aims to design and develop an innovative portal comprised of reliable and efficient technology-ready tools for the identification, classification, documentation and renovation of heritage buildings which can be exploited by a variety of stakeholders related to the conservation and retrofit of heritage buildings.

7%

Of all publications in Cyprus (Percentage of publications in Cyprus made by Frederick University between 2016-2021)





Ensure sustainable consumption and production patterns

Consulting projects

The University's Sustainable Energy Research Group is conducting a number of consulting projects on waste management, commissioned by the Ministry of Agriculture, Rural Development and Environment:

- Quantification of the amounts of food waste generated at each stage of the food supply chain in accordance with the Commission Delegated Decision (EU) 2019/1597.
- Development of an Action Plan on Green Public Procurement, identification and recording of green products and services that are available in the local market, identification and recording of similarities and differences among the popular European green standards and other standards, and development of an electronic Green Procurement database that will include a list of green products and services, standards, as well as a Register of Green Contracts for the preparation of the Action Plan on Green Public Procurement (PPC).
- Quantification, recording and development of Quality Control reports on single-use plastic products and waste, alternative options and development of a database of single-use plastic products.

Waste Management in Tourist Areas

Increasing the level of recycling for particular waste streams poses a significant challenge for highly touristic areas. Frederick Research Centre participates in the project Invalor 101 which is creating a network of touristic areas that will explore ways of collaborating in joint glass waste management actions. The project aims to achieve the transfer of glass up-cycling technology and construct a Pilot Unit for Municipal partners. The Pilot Unit will valorize glass waste to produce building products, through geo-polymerization techniques, thus enhancing recycling of this waste stream. It will be a mobile infrastructure shared by the members of the network, i.e. a small container-size unit that will be easily and economically transferred from one partner to another and treat peak waste in off season periods. A Sustainability Plan will be developed to define the conditions under which the network will operate efficiently and attract more members.

Food waste management in hotels

Hotels in Cyprus and Greece do not have a reliable system to effectively measure food waste thus they fail to address the issue of food waste. The project 'Food Waste Management IS for Hotels' (FW4H) aims to develop a system and platform which will use innovative technologies, mainly machine learning and data analytics, that aim to automate (e.g. food recognition) and simplify the collection of data in the kitchen and make it as simple, fast and seamless as possible. This will produce the least amount of friction for the kitchen staff, therefore enabling the incorporation of the system in the kitchen workflow.

Conversion of waste material

Frederick Research Center is involved in a number of research projects on the conversion of waste material from the construction industry.

It coordinates DEFEAT (Development of an innovative insulation fire resistant facade from the Construction and Demolition Waste). The general goal of the project is the conversion of waste from excavations, construction and demolition into a new, innovative thermal insulation and fireproof material, which can be applied to building facades.

Another example is the DIAVAL project, which plans to transform the diabase mud from waste to secondary raw material for the production of innovative binders and, hence, of marketable pre-casted building materials which will be mainly applied as paving blocks.

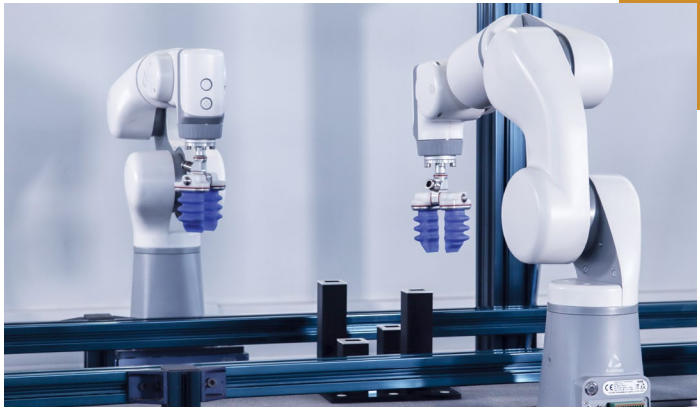
Frederick Research Centre also participates in the RAPCON project, which aims at converting an otherwise waste material, recycled concrete aggregates (RAC), into a high-value material, recycled aggregate concrete (RCA). It is expected that the effective introduction of RCA into the production processes will enhance the state-of-the art knowledge concerning the reuse of waste materials in construction industry and boost the recycling process in Cyprus with all possible economic, technical and environmental benefits.

Another project that uses waste material

from the construction industry is Blast and Fire Resistant Material (BAM). The project aims at the development of two innovative smart materials, which will be fire and blast resistant and will be manufactured with two different methods: i) the conventional precast method and ii) 3D printing manufacturing, using waste material from construction works. 3D printing is a novel method that offers faster and easier manufacturing, along with less waste generation.

10%

Of all publications in Cyprus (Percentage of publications in Cyprus made by Frederick University between 2016-2021)



Frederick Research Center is involved in a number of research projects on the conversion of waste material from the construction industry.



Take urgent action to combat climate change and its impacts

Monitoring natural disasters

The Eastern Mediterranean region is one of the most prominent hot spots of climate change in the world. Extreme weather and climatic phenomena in this region, such as extreme and heavy precipitation events, are expected to become more frequent and intense. Frederick University's Cyprus Ionospheric Research Group conducts research focused on developing systems that monitor and provide forecasts of climate-related hazards and natural disasters that occur due to climate change. Monitoring of severe and abrupt weather events is extremely important due to their detrimental impact on a wide array of economy sectors. The projects are expected to assist local authorities to adopt and implement disaster risk management strategies. The recently completed BeRTISS project developed a pilot transnational severe weather service by exploiting Global Navigation Satellite Systems tropospheric products to enhance the safety, the quality of life and environmental protection in the Balkan Mediterranean region. The project provides timely information and warning regarding severe weather events as well as long-term monitoring of weather and climate change in the region, through the mapping and visualization of water vapor for the first time in real time in this region. To achieve this, a new GNSS Analysis Center has been installed in Cyprus and is displayed in real

time on a dedicated online platform to provide the local authorities and the general public with early warnings of forthcoming severe weather events. The experience gained during the implementation of BeRTISS project led to the development of another project, PREWAM, the aim of which is to establish CloudWater, a start-up company with the ultimate aim to develop a unique product based on the novel concept of low-cost near-real time monitoring of PWV (Precipitable Water Vapor) over an area based on GNSS systems. PREWAM exploits low-cost dual frequency GNSS technology and rapid-prototyping for the development of an affordable PWV monitor that will facilitate nowcasting of PWV over a certain area of approximately 25 km². The monitor will be able to augment the operation of a nearby commercially available meteorological station in order to enhance monitoring of local weather conditions and provide real-time information to enrich weather forecasting on various spatial and temporal scales in the context of "Big-data" processing, exploiting high performance computing offered by an increasing number of agencies and companies nationally and globally. Another example is CyFFORS. In the framework of this project, the research team has developed a prototype flood-forecasting system in the form of a web-based platform which presents hydrometeorological forecasts. The platform provides in-situ and remote-sensed observations over Cyprus and Attica, Greece, and is supported by the

National Observatory of Athens (NOA), Greece. The overall objective of the project is to increase flood risk awareness and to promote preparedness against flooding. Finally, Satellite Water VApour Service Cyprus (SWVASCY) Cloudwater Ltd is a project that aims at developing a GNSS satellite Integrated Water Vapor (I WV) monitoring service that will be used for short range weather forecasting and early warning of severe precipitation events over Cyprus. Water Vapour is the most abundant of greenhouse gases (accounting for ~70% of global warming) and is a direct indicator of severe weather events such as heavy precipitation and floods as it can change rapidly.



Presented with the LIFE Award for Nature in 2022, the LIFE KEDROS project increases the endemic Cedar habitat's adaptation capacity to climate change.



Flood-forecasting platform developed by Cyprus Ionospheric Research Group



The University participates in awareness raising events on climate change and its impact on biodiversity.

Impacts of Climate Change on biodiversity

Frederick University's Nature Conservation Unit specializes on biodiversity conservation, natural resources management and environmental education and awareness in Cyprus. It participates in awareness raising events on Climate Change and, through its participation in research projects, information is collected on the impacts of climate change on biodiversity and measures are implemented to mitigate climate change. As an example, the recently completed LIFE KEDROS project aimed to enhance the endemic Cedar habitat's resilience and increase its adaptation capacity to climate change. The project improved the conservation status and resilience of cedar forests at risk from climate change in a Cyprus Natura 2000 site. The team undertook silvicultural treatments for the first time and reduced competition between mature and young cedar trees. They restored 12 hectares of degraded habitat, planted 8 hectares of new cedar habitat, and installed a seedbank for reforestation. The project won the LIFE Award for Nature of the 2022 LIFE Awards.

Climate Action Plan

The University has developed an Energy Policy to steer decisions related to energy use and is upgrading existing buildings to higher energy efficiency, while it has completed the requirements for the 50001:2018 Energy Management System.

Importantly, it pledges that by 2030 all buildings in which the University operates and are owned by the University (more than 80% of used premises) shall reach 80% renewable energy use and that by 2040 the University will use 100% of its energy from renewable sources.

To support this commitment, a Climate Action Plan has been developed, which is reviewed and updated on an annual basis to reflect the progress made, internal or external factors that may have changed and new strategies. The plan outlines the strategic targets of the University in relation to its energy use and monitors the implementation of relevant actions.

Actions are organized into the following target areas:

- Governance: Compliance with regulatory framework, policies, trainings
- Facilities: Building construction and renovation
- Energy Use: Energy production and use of renewable energy.

8%

Of all publications in Cyprus
(Percentage of publications in Cyprus made by Frederick University between 2016-2021)





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

Blue Limassol Forum

The Department of Maritime Transport and Commerce, in a strategic collaboration with Limassol Municipality, organize the annual Blue Limassol Forum which aims at promoting maritime and environmental awareness amongst local citizens and engaging them in decision making for Blue Growth and Environmental Sustainability. The Forum is a broad-based platform in which all stakeholders have a floor to speak. The first Forum focused on “Sustainable Coastal, Marine & Maritime Environment”. Invited speakers and participants discussed initiatives and examples of good practice to stimulate further dialogue and action demonstrating collaborative environmental leadership. Within the framework of the Forum, Frederick University and Limassol Municipality launched a research study on the environmental risks and economic benefits of sector activities within the coastal and marine area of Limassol bay. Analysis and findings provide strategic recommendations on risk mitigation practices. This is the first integrated research study intended to identify priorities and action for the benefit of Limassol and its citizens and it suggests a roadmap for future environmentally focused research projects for the coastal city of Limassol.

Environaut

Frederick University is one of six partners in the “ENVironmental Officer in the NAUTical Tourism Industry” (EnviroNaut) project, during which the first ever environmental qualification for nautical tourism companies will be developed. The project aims to bridge the gap between the training and skills needed in the boating industry, while enhancing the positive environmental impact that the recreational boating sector can have. It is associated directly with the marine environment in both open seas and coastal zones, as it aims at developing and disseminating a training program that codifies and presents the legislative framework as well as ways of safe compliance. The resulting course will be online, free and accessible to all. The curriculum will respond to targets set by the European Green Deal and the UN Sustainable Development Goals (SDGs). The EU funded Erasmus+ project is formed by a multidisciplinary consortium, coordinated by the German Maritime Federation (BVWW), which represents around 450 companies in the recreational boating industry in Germany. EBI (European Boating Industry), representing the national organizations of the recreational boating industry in Europe, also participates in the consortium along with the German Ocean Foundation (Germany), the Sea Teach educational center (Spain), the National Technical University of Athens (Greece) and Frederick University (Cyprus).

Enriched academic programs

The University has enriched its BSc in Maritime Studies Programme with new courses on maritime and marine environment, coastal risk assessment, etc.



Enabling the strategic development of a sustainable open sea aquaculture industry through “OS Aqua” project



“EnviroNaut” project is developing the first ever environmental qualification for nautical tourism companies



The University and Limassol Municipality co-organize the annual Blue Limassol Forum which promotes maritime and environmental awareness

Developing an open sea aquaculture industry

Frederick Research Centre participates in OS Aqua (Open Sea Aquaculture in the Eastern Mediterranean), a national project that aims to establish a road map for the future development of marine aquaculture in Cyprus and the Eastern Mediterranean, thus enabling the strategic development of a sustainable open sea aquaculture industry. In addition to significantly increasing food production, the project aims to minimize impact to the natural environment. The project will define and designate maritime zones, design aquaculture stations, develop protocols and tools for cost effective ongoing monitoring of offshore aquaculture stations and conduct a financial sustainability study. The Open Sea Aquaculture in the Eastern Mediterranean (OS Aqua) Project is co-financed with €800.000 by the European Regional Development Fund and the Republic of Cyprus. More specifically, the project will:

- Develop an integrated model for use in environmental impact assessments of aquaculture in the Open Sea of the Cypriot territorial waters and an

- information system that will be able to record environmental parameters.
- Develop a Marine Spatial Plan to designate zones of Open Sea aquaculture areas. The National Marine Spatial Plan of Cyprus will reduce environmental impacts and conflicts with other coastal/marine activities as it will promote marine aquaculture in open sea fish cages.
- Design aquaculture stations and select fish species considering state-of-the-art in aquacultural technologies.
- Develop protocols and tools for cost effective ongoing monitoring of offshore aquaculture stations in Cyprus.
- Investigate the financial feasibility of expanding aquaculture activities further away from coast.

2%

Of all publications in Cyprus (Percentage of publications in Cyprus made by Frederick University between 2016-2021)





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

Nature Conservation Unit

Nature Conservation Unit specializes on biodiversity conservation, natural resources management and environmental education and awareness in Cyprus. The Unit constitutes the de facto point of reference in the environmental conservation sector in Cyprus. Its infrastructure includes a Plant Ecophysiology Laboratory and a Plant Genetics Laboratory, while - to date - it has been involved in more than 45 projects, nine of which are European LIFE projects. These projects focus on two main thematic areas:

- Biodiversity conservation. The Unit projects in this area aim at the implementation of the Natura 2000 Network, the conservation of endemic, rare and threatened species, the impacts of climate change on nature and biodiversity, the management of ecosystems and the rehabilitation of ecologically degraded areas.
- Environmental education and education for sustainable development. Projects in this area aim at enhancing education and raising awareness about the rich biodiversity of Cyprus and the importance of nature conservation. Moreover, they aim at promoting favourable environmental attitudes among the people. Some activities also focus on educating and training young educators on issues relating to conservation and sustainable development.

Contribution to National Policy Making

The University plays an important role in the promotion and implementation of related policies. Specifically, through the participation in research projects that involved Governmental Departments and NGOs, the implementation of the Habitats and Birds Directives in Cyprus was promoted, as well as the adaptation of forest policies, dealing with invasive alien species, sustainable use of genetic resources and management of natural resources.

Using IoT for forest management

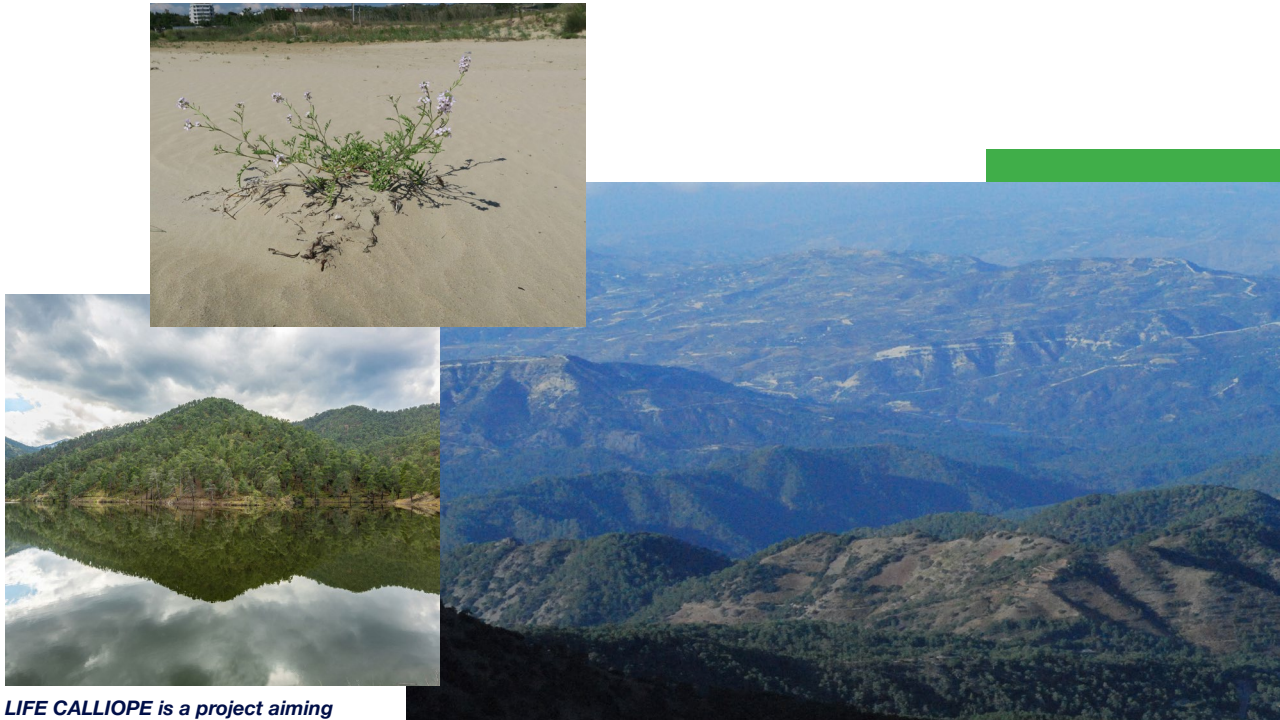
Frederick University participates in Green-HIT project, which will develop a holistic IoT platform for forest management and monitoring using cutting-edge Information and Communication Technologies to promote digital and green technology. The platform will support (a) prevention, detection, and reaction to forest fires, (b) afforestation and/or reforestation recommendations, (c) protecting forests from illegal logging and hunting, (d) monitoring forests and forest areas, and (e) forest mapping and inventory by collecting, combining and analyzing field data and remote sensed data. Green-HIT will fundamentally transform how forests are managed and monitored, supporting forest departments and dependent communities, scientific communities and regulatory authorities. The project will enhance the effective collaboration between enterprises and the research community.

Achieving conservation status

Cyprus is among the top EU countries in terms of land area covered by the Natura 2000 network. The island is home to rare and endemic species of flora, fauna –including birds– and habitats. The primary objective of Pandoteira project is to achieve and maintain a favourable conservation status for important species and habitat types in Cyprus, through actions in the whole Natura 2000 network. The project will fill knowledge gaps for species and habitats, improve the governance of the network, exploit ecosystem services and implement action and management plans for species and habitats. It also aims to positively influence land users, owners, local population and other stakeholders in understanding the importance of the Natura 2000 network and embracing it.

Protecting dune ecosystems

Along the central Adriatic coast of Italy and the northwestern coast of Cyprus, large dune ecosystems and sublittoral marine habitats are seriously threatened by human activities. The aim of LIFE CALLIOPE, in which Frederick University participates as a partner, is to protect coastal dunes, sublittoral sandbanks and marine reefs along these areas, to mitigate direct and indirect human threats. The project will implement integrated management for coastal and marine areas to conserve target habitats and species, in line with the European Integrated Coastal Zone Management strategy. Wooden walkways will be placed to reach the beaches to reduce the impact of foot traffic, dune vegetation will be restored by planting seedlings of local species, juniper maquis will be restored, the alien species acacia saligna in Cyprus will be eradicated, and the biodiversity of marine reefs and submerged prairies will be protected. Awareness raising activities will also be implemented.



LIFE CALLIOPE is a project aiming to protect coastal dunes, sublittoral sandbanks and marine reefs along the coastline of Italy and Cyprus.

“Pandoteira” project aims at protecting species and habitat types in the Natura 2000 network.

6%
Of all publications in Cyprus
(Percentage of publications in Cyprus made by Frederick University between 2016-2021)





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

Principles on corruption and bribery

Frederick University pledges to maintain an ethical conduct, both internally relating to its operations and investments, as well as externally. It adopts a zero tolerance approach to bribery, money laundering and any other form of corruption. Statements of ethical conduct are signed by all officials of the University, forbidding the direct or indirect offer of payments to a public official or other individual in the private sector that may be considered to fall within the definition of bribery. In addition, a strict framework is enforced on the University conduct relating to gifts and/or facilities to public bodies, foreign government representatives and individuals from the private sector. All such activities are transparently recorded in the organization's accounts. The University accounts are externally audited by reputable accounting firms to ensure due practices are followed.

Human Rights Events

The University organises on-campus or online events (lectures, conferences, seminars) to raise awareness on human rights issues and discuss relevant topics (such as trafficking, war in Ukraine, medical negligence), or to provide vocational training to professionals, such as lawyers, legal counsellors and others.

GIG-Arts conference

In 2022 the University, through its Department of Law, co-organised and hosted the 6th European multidisciplinary conference on Global Internet Governance Actors, Regulations, Transactions and Strategies. Titled "Global Internet Governance and International Human Rights. Whose Rights, Whose Interpretations?", the two-day conference presented and discussed developments in Global Internet Governance (GIG) and their implications in and beyond this field of research. The Conference brought together scholars from all over Europe to examine the governance of human rights in the digital world. The conference was co-organized and co-sponsored by Frederick University (Cyprus), COST Action GDHRNet - The Global Digital Human Rights Network (EU), Leibniz Institute for Media Research Hans-Bredow- Institut (Germany), LIP6 Laboratory, Sorbonne Université & CNRS (France) and the Media Governance and Industries Research Lab & Jean Monnet Centre of Excellence FreuDE, University of Vienna (Austria).

Inclusive representation

The University strongly believes in inclusive representation of its community in the operations. This is clearly embedded in its Charter which implements the following principles: all academic bodies are headed by elected representatives, in all bodies of governance adequate representation from students is present, the Senate, the supreme academic body, comprises solely of students and elected academics with the exception of the inclusion of the Director of Administration and Finance, at the University Council, the supreme administrative body, there is equal representation between appointed members and elected representatives from students, academics and administrative personnel. The University facilitates the existence of a student union. Students are provided adequate office space and facilities so that they can undertake their different functions, including elections.



The GDHRNet COST Action explores the challenges posed by the online context to the protection of human rights.

The 6th European multidisciplinary conference on Global Internet Governance Actors, Regulations, Transactions and Strategies was hosted at Frederick University in 2022.



Frederick University Council includes elected representatives from students, academics and administrative personnel.

Academic freedom

The University allows the free and open exchange of ideas and it is thus committed to upholding the values of academic freedom and freedom of expression. These values are specifically safeguarded in the University's Charter under article 4(a) which specifies that all members of the university community can develop new ideas without fear of sanctions or censorship, and article 4(b) which specifies that all members of the University can freely express themselves.

The Online Context to the Protection of Human Rights

The Department of Law participates in the GDHRNet COST Action which will systematically explore the challenges posed by the online context to the protection of human rights. The network will address whether international human rights law is sufficiently detailed to enable governments and private online companies to understand their obligations vis-à-vis human rights protection online. It will evaluate how national governments have responded to the task of providing a regulatory framework for online companies and how these companies have transposed

the obligation to protect human rights and combat hate speech online into their community standards. The matters of transparency and accountability will be explored. It will propose a comprehensive system of human rights protection online, in the form of recommendations of the content assessment obligation by online companies, directed to the companies themselves, European and international policy-making bodies, governments and the general public. It will also develop a model which minimises the risk of arbitrary assessment of online content and instead solidifies standards which are used during content assessment; and maximises the transparency of the outcome. It will achieve scientific breakthroughs (a) by a qualitative and quantitative assessment of whether private Internet companies' provide comparable protection of human rights online in comparison with judicial institutions, (b) in the form of a novel holistic theoretical approach to the potential role of artificial intelligence in protecting human rights online, and (c) by providing policy suggestions for private balancing of fundamental rights online.

2%

Of all publications in Cyprus (Percentage of publications in Cyprus made by Frederick University between 2016-2021)





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

International Networks

Frederick University is currently leading three international projects on integrating SDGs in Education, funded by the European Commission involving more than 20 partners from Europe, Asia and Africa. It has been involved in cross-sectoral dialogue about the integration of the SDGs in formal (course curricula), non-formal (capacity building) and informal (e.g. public campaigns, advocacy through social media) education sectors. In the context of this collaboration, Frederick University has contributed to the integration of SDGs and ESD in multiple academic disciplines through the development of innovative Toolkits and Pedagogical Methods applying transformative learning pedagogies.

Member of SDSN

Since 2019, the University has been an institutional member of the UN SDSN, which brings together Universities, NGOs, research institutes, international organisations and governments to develop and promote solutions, policies and public education for sustainable development.

Founding Member of SDSN Cyprus

The University is one of the founding members of SDSN Cyprus which aims to assist Cyprus in creating the necessary roadmaps, strategies, and policies to achieve the SDGs. By cooperating through education, research, and policy analysis and by involving the people through reliable information and SDG awareness projects, Frederick University aims at maximizing Cyprus' contribution to the global effort for achieving Sustainable Development.

Sustainability strategy

The SDGs are embedded in the University's strategy, and incorporated in its teaching, research and daily operation. The University is committed to integrating the SDGs in a holistic way. In this framework, a category in the University training plan is dedicated to SDGs and includes workshops aiming at empowering academics to be able to incorporate SDGs in their courses content, teaching practices, research, and community actions, but also enabling administrative staff to embed SDGs in daily operations, policy making and university reporting.

To demonstrate its commitment to the SDGs, Frederick University annually presents the SDGs Action Awards.



The University implements on and off campus outreach activities related to the Goals.



Educating the Community

The University plans and implements on and off campus outreach activities related to the SDGs. It has implemented several successful campaigns on promoting and raising awareness on issues such as gender equality, gender-based violence, human trafficking, human rights and more.

Public, private and civil society partnerships

Frederik University has established relationships with local, regional and international NGOs, local authorities and government bodies for SDG policy development. It also initiates and participates in cross-sectoral initiatives that facilitate dialogue about the SDGs, such as conferences involving local authorities, government or NGOs. Through its research, the University also participates in international collaboration on gathering or measuring data for the SDGs, reviews comparative approaches and develops educational material and international best practices on tackling the SDGs.

Sustainability Awards

To demonstrate its commitment to the SDGs, Frederick University Council decided to dedicate a specific category of the annual Michael Frederickou Awards, the most prestigious awards granted by the University, to 'The SDGs Action Awards' which recognise:

- practices or activities from Frederick University faculty, staff, students and alumni that show significant impact with respect to contributing to SDGs or
- outstanding individuals (Frederick University faculty, staff, students and alumni) who are demonstrating that it is up to us to inspire and enact change.

The awards are presented every year during an official ceremony and any member of the University community is eligible to apply (faculty members, administrative staff, students & graduates).

Sustainable Development Goals Steering Committee

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Mr Marios Pelekanos

Associate Professor, Department of Architecture

Prof. Costas Mantzalos

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Ms Natalie Christofides

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