# Education for a more sustainable world



# WHAT CAN WE LEARN FROM YOUNG EUROPEAN RESEARCH UNIVERSITIES?

**Authors:** Chiara Colella, Silvia Gómez Recio, Inês Roquero da Costa Pinto (YERUN Brussels Office).

# Table of content

# Executive Summary

"The higher education sector has an essential role to play in Europe's post-pandemic recovery and in shaping sustainable and resilient societies and economies", reads the introductory paragraph of the European Strategy for Universities, launched in January 2022.[1] The strategy sets out a new vision for European Higher Education Institutions (HEIs), in which sustainability is enshrined at the very core of European universities' work. The ambitious actions proposed by the European Commission (EC) aim to empower universities as actors of change in the green (and digital) transition.

Further to setting out a vision through the Strategy, in January 2022 the EC has also published a proposal for Council Recommendation on Learning for environmental sustainability, aimed to 'articulate a vision and shared understanding at EU level the deep and transformative changes needed in education and training for the green transition', among other objectives.[2]

Building on this favourable political momentum, and on the increasing importance that is given globally to the role that HEIs should play in the transition towards sustainability[3], this paper brings together examples from the Young European Research Universities (YERUN) on how to promote education on and for sustainability through curricular and extra-curricular activities. The objective is to connect on the one hand the vision set out by the EC with the actions that will be supported by the EU Members States, and on the other hand, the already existing practices and examples that exist within the YERUN universities. The latter indicate that there is already good progress taking place, and that the reality on the ground would really benefit from a coherent approach at European level, a joint vision whose cascade effect could have enormous positive repercussions on the development of a common understanding on Sustainable Development (SD).

The experiences presented in this paper have led to the identification of the following messages for policy makers to successfully translate the Council Recommendation into real opportunities for students, learners and the higher education community overall:

- SD should be considered and fostered in its environmental, social, and economic dimensions.
- A successful education for sustainability must be supported by a solid vision of the political and academic leadership.
- Communication, dialogue, and ownership are key to bring the whole academic community on board.
- Interdisciplinarity is necessary for a thorough understanding of SD.
- A project-based learning approach aimed at solving real-life sustainability challenges is instrumental to a thorough understanding of SD.
- SD needs to keep an international approach.
- Students' feedback must inform the different educational offers on SD.
- Students and the academic community must be empowered in meaningful ways to be leaders in SD.
- The adaptation of the academic curriculum requires expertise, training and skills development in SD.
- Universities must be equipped with adequate funding to bring in a holistic approach to SD and support the bottom-up initiatives by their communities.

With this paper, YERUN wants to contribute to these positive developments as an active promoter of SD. YERUN members expect that this work, together with that led by other universities networks as well as by the European universities alliances, can contribute to fostering a fruitful discussion in the higher education sector on the role of universities in building a greener, more inclusive, and more equal future towards a sustainable tomorrow.

1 European Commission (2022), A European Strategy for Universities, COM(2022) 16 final, Strasbourg, 18 January 2022 (link), p. 1
2 European Commission (2022), Proposal for a Council Recommendation on Learning for Environmental Sustainability, COM(2022) 11 final, Brussels, 14 January 2022 (link), p. 2. Please note that the adoption of the Council Recommendation on Education for Environmental Sustainability is expected in June 2022 and might be already out when this paper will be published.
3 UNESCO, Knowledge-driven actions: Transforming higher education for global sustainability, 2022 (link), p. 13

# Introduction

Education is key in the transition to a sustainable society. Yet, there is not yet a widespread knowledge of the challenges and the opportunities it entails, nor of the role that students and citizens can actively play in building a more sustainable world. Education institutions have a leading part to play in this transition and in highlighting the urgency of change.[4] In this context, the European Strategy for Universities marks a milestone for European HEIs. The document provides a vision for our higher education sector along four key objectives, one of which aims to empower universities as actors of change in the twin green and digital transitions.[5] Through a series of actions and initiatives promoted by the EU and its Member States, universities will be supported in developing whole-institutional approaches to sustainability.[6]

Furthermore, the EC's proposal for Council Recommendation on Learning for Environmental Sustainability recognises that learning for environmental sustainability is not yet a systemic feature of policy and practice in the EU.[7] Challenges are identified in the implementation and monitoring of related policies and in the lack of a clear vision, of specific targets, actions and indicators, which render the presence of sustainability in the curricular and extra-curricular offer sketchy and fragmentary. In this proposal, which nicely complements the vision set out in the Strategy, Member States are encouraged to align the current situation through a series of measures addressing the system, the learners, the educators and the education institutions.

These EU initiatives are in line with the political momentum at global level: since the launch of the United Nations' 2030 Agenda and its Sustainable Development Goals (SDGs)[8] in 2015, a plethora of student-led initiatives have been unfolding globally (i.e. Climate Students Movement, Green Office Movement, SOS – Students Organising for Sustainability International, Fridays for Future, among many others). Youth has been demanding governments around the world to address the climate emergency once and for all: we all recall Greta Thunberg's passionate speech at the United Nations in September 2019. Their voice cannot be ignored any longer. This is a clear example in which universities' role in addressing the youth's voice becomes evident, as they are the place where they can co-design new learning horizons with sustainability at their centre.

4 UNESCO, Knowledge-driven actions: Transforming higher education for global sustainability, 2022 (link), p. 13
5 European Commission (2022), A European Strategy for Universities , COM(2022) 16 final, Strasbourg, 18 January 2022 (link), p. 4
6 Ibid.
7 European Commission (2022), Proposal for a Council Recommendation on Learning for Environmental Sustainability, COM(2022) 11 final, Brussels, 14 January 2022 (link), p. 2
8 'The SDGs are a call for action by all countries to promote prosperity while protecting the planet. They recognise that ending poverty must go hand-in-hand with strategies that build economic growth and address a range of social needs including education, health, social protection, and job opportunities, while tackling climate change and environmental protection'. In: United Nations, "17 Goals to Transform Our World" (link) (accessed on 16.05.2022)

In this context, the Council Recommendation is very timely and welcome: while many initiatives on sustainability are already underway[9], they still tend to be scattered and are not yet part of a systemic approach across the EU.[10] Facilitating the sharing and peer-learning of educational approaches to sustainability among Member States can contribute to making it become a systemic part of education in Europe. Despite not being legally binding, the Council Recommendation will serve as a reference point for Member States on how education and training can contribute to a more sustainable future and what they could and should do to support them.

### Sustainability at YERUN members' universities

In recent years, sustainability has increasingly become an integral part of universities' life.[11] Many HEIs have already incorporated the SDGs into their institutional strategies, in management as well as in teaching and research, and this is considered part and parcel of their social responsibility agenda.[12]

YERUN members are strongly committed to sustainability: it is no coincidence that the YERUN Strategy 2021-2025 places sustainability among the main priorities of the network, within the focus area on "Responsible and Engaged Universities".[13] In line with that priority, since 2021 YERUN has fostered collaboration and best practice sharing among its members with the aim of advancing together in the implementation of the SDGs in the university life. According to an internal survey circulated in February 2021, all YERUN universities have integrated sustainability in their educational offer, and a great majority of them provide opportunities for students to engage with sustainability beyond the academic curriculum.[14]

One of the first aspects that has emerged from this work is that, despite the many initiatives on sustainability implemented by young research universities, a full implementation of the SDGs in higher education requires further efforts, a stronger vision and more political, structural and financial support. Translating ambitions into concrete actions and ensuring that the whole academic community – from students to leaders – feels part of this vision is easier said than done.

In the past months, YERUN has worked closely with its members to develop an overview of universities' involvement in SD, to better understand the role that not only education can play, but also research and leadership. With this paper, YERUN presents some inspiring stories of young European research universities promoting sustainability through their educational offer as well as student-led initiatives. The approaches offered are quite varied, ranging from dedicated courses, learning platforms, co-creation of projects, students' extra-curricular activities, and engagement with their communities.

These stories offer the possibility to explore ways by which sustainability can be achieved through education and students' involvement. Based on the takeaways emerging from the implementation of these practices, some policy recommendations are identified for EU and national policy makers to further support universities in their role of educating and inspiring the citizens and leaders of tomorrow through sustainability lens. YERUN members are advancing in the implementation of the SDGs, providing successful examples of what the Council Recommendation could lead to, in practice.

What can be considered a success when we talk about education for sustainability? How are universities integrating sustainability in the academic curriculum? And what do they need to better support the leaders of tomorrow?

This section includes 14 examples from YERUN institutions on how the SDGs can be integrated into formal education through different formats: single courses, Minors, Master's (MA) and summer schools. Some of these stories offer the opportunity to identify valuable takeaways, which can help us understand how the policies should best support HEIs in their work. These takeaways can be summarised under four main pillars: students, pedagogical approaches, teachers' education, and the institutional leadership.

9 See some examples in the YERUN April 2021 Newsletter (link)
10 European Commission (2022), Proposal for a Council Recommendation on Learning for Environmental Sustainability, COM(2022) 11 final, Brussels, 14 January 2022 (link), p. 1
11 Note to the reader: throughout this paper, "sustainability" is intended as "Sustainable Development" in its social, economic and environmental dimensions, in line with the approach of the 17 Sustainable Development Goals included in the UN 2030 Agenda for Sustainable Development. This disclaimer is important, given that "sustainability" often tends to be contemplated only in its environmental implications, neglecting its equally important social and economic aspects. For more information: "Three pillars of sustainability model", in Purvis, B., et al. "Three pillars of sustainability: in search of conceptual origins". In Sustainability Science 14(3): 681-695. (link)
12 European Universities Association (EUA), Universities and Sustainable Development Towards the Global Goals, December 2018 (link), accessed on 16.05.2022
13 YERUN Strategic Plan 2021-2025 "Enabling Talent to Grow" (link)
14 For more examples, see also the YERUN April 2022 Newsletter (link)

# CHAPTER 1

## Embedding sustainability
in the academic curriculum



**Students' role in informing the content and design of the course**

From the practices included in this section, a recurring aspect is the active role of **students** in the creation of the course: to increase their interest and motivation, it is important that they are involved by **informing the course designs** and providing evaluation in the pilot courses. This facilitates their engagement but also helps identify strengths and weaknesses of the educational offer provided. Another key aspect to consider is **students' active participation and interaction** during the course. It is important to balance guidance of students with the **autonomy** for them to explore topics they are more interested in. In this sense, **project-based learning aimed at solving real-life sustainability challenges** is identified as a useful pedagogical approach, likely to stimulate more active and deeper learning. By engaging in peer group discussions and reflection exercises, **students gain new insights related to teamwork, innovation, and sustainability**. Being based on real-life experience, acquired insights are likely to be transfer into real situations in future professional or academic life. **Student-business collaborations** can have additional benefits in stimulating businesses to innovate for more sustainable solutions. Some examples focus on postgraduate students' participation in actions of public and private institutions applying environmental and sustainability education in practice. This experience has given students a thorough picture of the diverse forms in which SD could be implemented in the real world, as well as ideas for future professional opportunities.
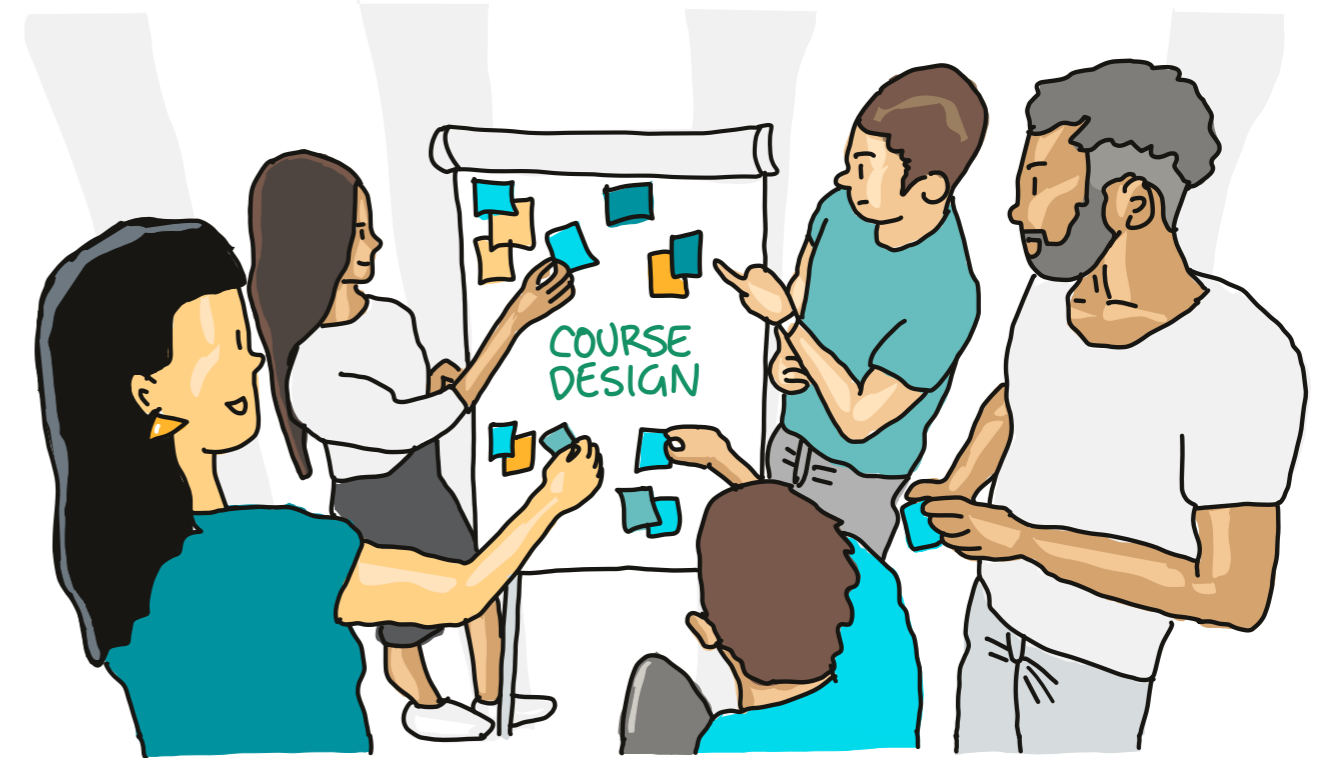
**Innovative and interdisciplinary educational formats**

**The interdisciplinary aspect is essential.** It is only through an approach that transcends the boundaries of the single disciplines that the true magnitude of the problem and its systemic character can be fully grasped. Not only do students get lectures from a diverse set of disciplines, but they also collaborate with students from various disciplines (e.g biologists, economists, architects, sociologists, communication, etc.). This approach makes them look beyond discipline boundaries and collaborate with people from different backgrounds.

The examples collected are set at different levels of the educational path, but in some cases **introducing the topic early in the curriculum** has enabled students to orient their further studies in a way that considers SD. The examples vary in their approach, some being compulsory at the beginning of the studies, others complementing existing studies and others totally available online and independent from the academic calendar. **These educational innovations are always unique**, depending on the institutions involved, the region, historical paths, the institution's educational culture and the actors involved.

**Future teachers learning about Educating Sustainable Development**

Establishing networks or groups of academics who have a strong interest in Education for Sustainable Development (SD) has proven to be valuable to create an interdisciplinary and international curriculum. This is particularly relevant given the differences among education systems in different countries but also within the same country. **Training the trainers** and including future teachers as students of SD is important to ensure that they become multipliers for future implementation of SDGs. Teachers are significant role models and can help learners develop the knowledge, skills and attitudes they need as responsible global citizens who take an active part in shaping social and sustainable futures. **Integrating ESD into the curriculum of teaching education** is an opportunity to adequately address this aspect.

A large part of environmental and sustainability education takes place in **informal and non-formal settings**. Therefore, is important to raise a generation of educators that can sufficiently develop and implement educational activities in such settings. **A connection of educational practice with research is necessary** for future educators to acquire proper epistemological and pedagogical skills for education for SD.

**Leadership's role in developing a university-wide vision**

Finally, leadership's drive is key in understanding the urgency of adapting the academic curriculum towards sustainability. The top-down decision of embedding sustainability across the university's study programmes can be a propulsor of university's educational approach. However, equally important is to leave the autonomy to the faculties and the university teachers on how to integrate the course in their own study programmes. This facilitates the take-up of the initiative by the academic staff.

# 1.1 Integrating Sustainability in the academic curriculum - University of Southern Denmark

In 2019, the University of Southern Denmark (SDU) declared itself an "SDG-focused university".[15] Since 2020, as part of its effort to reach this ambitious objective, SDU has been actively working for the integration of the 'SDG education' into the study programmes offered by the university. "**Introduction to SDGs**" is an online self-study course, equivalent to 1 ECTS, and available to all Bachelor students in the first year of their studies. Its goal is to provide a common introduction to SDGs by familiarising the students with SDG-related interdisciplinary and disciplinary research at SDU's five Faculties.

The initiative came from the **management**, who also allocated resources to its implementation. Following the decision to launch an SDG-course, a **steering group** was set up, composed of academics from different faculties and led by the Vice Dean of the Humanities Faculty. A key figure appointed was the **project leader**, whose charisma and personal qualities enabled communication about this top-down initiative to the academic communities and facilitated its uptake by all faculties.



*Figure 1: the different phases of the SDU course creation*

The creation phase of the course saw an active involvement of researchers, who developed a pilot version of the course in 2020. Following this pilot and based on the feedback received by the students, the course was officially launched in 2021. The implementation phase focused on two aspects: a 'technical' one, which saw the involvement of e-learning and educational consultants from the SDU Centre for Teaching and Learning, who co-developed the course and the platform on which it was offered; and a 'practical' one, in which each e-learning

consultants from each Faculty facilitated the integration of the course in their subjects.

There is a Danish and an English version of the current iteration of the course. It is designed as a self-study online course with inter-related modules, each with a focus on an individual or a cluster of SDGs: **Climate Change, Inequality in Health, Poverty, Innovation, and Environment and Resources**. Although each module has a specific SDG focus, they also build on other SDGs, given the interdisciplinary nature of the course.

A course evaluation followed the completion of the 2020 pilot course. From the feedback received, it emerged that students did not fully understand why they had to take the course and how it related to their degree. After this, a clearer rational was made in the final course, and a much stronger focus was put on interdisciplinarity.

Given the high level of autonomy that both students and teachers enjoy in the Danish higher education system, the integration of the course in the study programmes and the students' participation were not made mandatory. The uptake of the initiative was rather encouraged by the assumption that students have an "entitlement" to do this course. Evidence so far has shown three ways by which the course has been integrated into a majority of the study programmes:
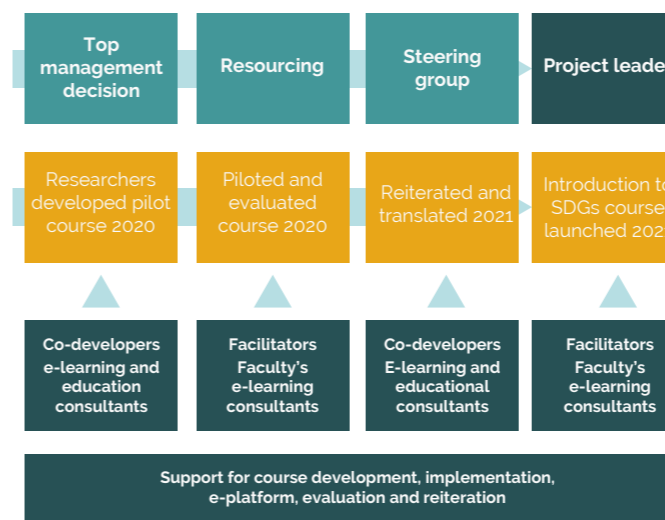
1. **Integration of the course into a first-year course**: in this case, the course teacher finding their own way to connect the course to the taught subject.

2. **As a 'stand-alone' course**: in some programmes, the course has been mapped as a stand-alone in the context of the "How to Uni" course, which is a course on how to become a university student.

3. **As an extra-curricular option**: available, but teachers might not connect it to their subjects.

**For more information click** here**, or contact:**

Dr. Donna Hurford, Senior Educational Consultant at the University of Southern Denmark:
dhu@sdu.dk

15  University of Southern Denmark, press release "UN's 17 Sustainable Development Goals become SDU's goals" (link), accessed on 16.05.2022

# 1.2 A mission-based educational approach – University of Limerick

The University of Limerick (UL) has pioneered an organisational wide strategic framework aiming to inspire collective action towards becoming a sustainable university. This strategic framework is underpinned by a mission-based approach[16] which will see UL's faculty, students, professional staff and neighbouring communities working collectively toward a portfolio of missions, each with its own set of targets and mission projects.

This approach is manifested in UL's **mission-led education model** which has piloted and designed a **challenge-based learning environment** to equip students as active citizens in response to the SDGs. The model is being actively prototyped in a 12 ECTS credit module as part of a MA in Business Analytics at the UL's Kemmy Business School. This **Digital Futures Lab (DFL)** is a 3-week full time online module/course that brings participants through a scaffold whereby they 1) map current systems and identifying leverage points for change, 2) adopt futures thinking to imagine possible and preferable futures, and 3) engage in market shaping design to consider how preferable futures can be achieved in concrete ways.

The DFL was partly a response to the shift to online learning triggered by the COVID-19 pandemic. The existing design of the course had to quickly adapt to an online setting. By integrating different digital tools[17], the DFL team has created a rich digital learning environment that supports participants to engage in virtual teams and in response to a common challenge. With this newfound experience in virtual studio learning environments, the UL team led on a successful Erasmus+ application (EULab).

The **EULab** is a unique programme developing a **studio-based virtual exchange** programme bringing together students from across 4 EU partner institutions (Finland, France, Ireland, and Spain) to work collectively on the most pressing issues of our time. This project aims to develop a **network of educators** with the capabilities and tools to design and deliver future EULab programmes. This ambition is supported by a 'Training the Trainer' programme and curriculum for Continuous Professional Development (CPD) module. This CPD module will be further supported by the production of a toolkit that will offer a step-by-step guide to running a futures lab, including the educational model, logistics and stakeholder engagement.

There is no set curriculum in the EULab and little 'formal' teaching. Instead, the programme offers a well-designed and tested flexible journey map, which supports a design-led process where participants work collaboratively to define and understand a particular problem area and then work through a series of stages, to ideate, prototype and test their propositions. Rather than having a prescribed list of skills or competencies or stakeholders to inform the lab, instead the teams and the organisers respond to the situations and issues that are being examined and consider what knowledge expertise or input is required.
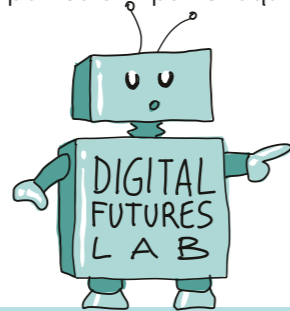


**For more information click** here**, or contact:**

Dr. Annmarie Ryan, Director Kemmy Business School:
Annmarie.Ryan@uLie

# 1.3 Interdisciplinary Sustainable Development - University of Klagenfurt



The interdisciplinary elective "Sustainable Development" is an instrument for the implementation of sustainability at the University of Klagenfurt. It is based on the following principles: **inquiry-based learning**, **problem- and research-based learning** and **building of learning communities**. Additionally, SD has to be considered from different disciplines. Hence, the course contributes to fulfilling the requirements of ESD in higher education, while helping students to gain important theories, competencies and methods to meet the demands of the present time and to ensure a future that is worth living.

The development of the elective started with personal contacts in all faculties and on a very open draft of what the elective could look like with different alternatives. Interested scientists of all faculties were identified and invited to further develop the elective and – if possible – to commit as a member of the teaching team. In the end, the teaching team included eight representatives of the four faculties (Cultural Sciences, Business Administration & Economics, Technical Sciences, and Interdisciplinary Research and Education).

The course was primarily designed for MA students, since an interdisciplinary reflection of sustainability topics requires basic knowledge of a discipline. The elective with scholars/lecturers from many disciplines was conceived to support the evolvement of a teaching and learning community. This **crossover from different disciplines** with both students and lecturers/scholars creates an informal network for sustainability in the university and the region at the same time. Besides having a multidisciplinary teaching team, the course module's interdisciplinary aspect is implemented by requesting students from different disciplines to analyse, synthesise, and harmonise inputs from their disciplines into a coherent result. In a follow-up lecture practice, partners are involved, allowing for the integration of non-academic knowledge into a transdisciplinary outcome.
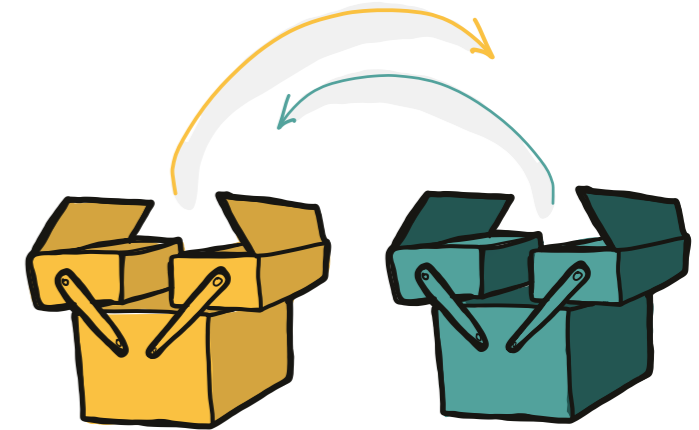
The basic contents of the elective "Sustainable Development" involve, inter alia, facets and history of SD, sustainable systems and growth, coping with contradictions, social conditions, communication, learning and education. Students must fulfil different tasks that support the mutual learning process. By discussing their ideas with the lecturers and partners from industrial and public management, NGOs, etc., students identify research questions and methodology, write and discuss text reflections, organise and conduct small research projects in groups, and finally hold plenary presentations. In addition, students work on selected topics in small groups to discuss sustainability from ecological, economic, technical, geographical, juridical, psychological, sociological, and educational points of view with the aim of working out contradictions and consistent aspects that are important for all students of the course. The results of these group projects are documented and prepared to inform other students about the essential outcomes and to support the contribution of further scientific or didactic discourse on the subject.[18]

**For more information click** here**, or contact:**

Prof. Dr. Franz Rauch, Institute of Instructional and School Development, University of Klagenfurt:
Franz.Rauch@aau.at

## 1.4 "Innovation in Teams" - University of Southern Norway

"Innovation in Teams" is the name of a new elective course at the University of South-Eastern Norway (USN) that focuses on interdisciplinary collaboration on **sustainable innovation**. The course is developed with support from the Norwegian Directorate for Higher Education and Skills.

The course is designed in such a way that students from different study programs are brought together into interdisciplinary groups. Each group connects with an external partner (e.g. a local business or a social partner) in need of innovation. The external partner has initially identified issues or challenges they need help with. In close collaboration, and with assistance from USN academic staff and facilitators, the student groups and external partners develop their project. The aim is twofold: 1) to create new and more **sustainable solutions to current sustainability challenges taking place locally**, and 2) to give students an arena to train their collaborative- and innovation skills for sustainability.

The innovation process is structured using the "Double Diamond innovation framework", that was originally developed by Design Council in 2005.[19] This framework divides the innovation process into four phases: 1) '**Discover**', where students research the issue thoroughly and check if their initial assumptions holds true 2) '**Define**', involves using their newly generated insights to frame the problem in a new way; 3) '**Develop**', is the phase where several different solutions are suggested; and finally 4) '**Deliver**', is when students select one or a few solutions and test them to learn if they actually work and how.

The course is developed iteratively with three consecutive pilots each fall semester 2021-2023. For each pilot, the number of participating faculties, study programs, academics and external partners gradually increase. The aim is to offer the course throughout USN. Researchers have followed Innovation in Teams and received good feedback from the students. Students have emphasised as positive that they have:

- Learned about collaborative tools and how to use them.
- Collaborated in interdisciplinary teams with professionals from trade and industry.
- Learned in a new and different way, something which is experienced as relevant and practical and that they will remember.

As one student mentioned: "*.. I believe that even if we get a bad grade, we have still learnt something – it will stick with us afterwards (...). I don't care so much about grades here because I've gained so much anyways.*"

Many of the participating companies and organisations have emphasised that also for them the course has been very useful, given that they have had many informative and stimulating discussions with students and experienced exciting working methods. For some, participating in the course also was a catalyst for an internal innovation process after completion.

**For more information click** here **(in Norwegian), or contact:**

Thomas Christian Espenes:
Thomas.c.espenes@usn.no

19 Design Council, What is the framework for innovation? Design Council's evolved Double Diamond (link), accessed on 16 May 2022.

## 1.5 Learning how to tackle climate change - University of Antwerp

The University of Antwerp (UAntwerp) has been running a **"Climate Change" course** since 2019. The idea of the course emerged from the outreach activities taking place at UAntwerp to raise awareness on climate change (e.g. lectures for general public). Those initiatives revealed that about every sector will somehow be affected by climate change, and that solutions need to come from various disciplines. Therefore, involving students in their learning process is absolutely key.

The 3 ECTS course can be taken by students from all disciplines, from the second year onwards. The goal of this course is to offer students a broad perspective on the matter of climate change, so that they can become fully aware of the complex character of the subject.

An introductory class highlights the **multi-, inter- and transdisciplinary** character of the climate issue and deals with the physical basics of climate change. After that, a series of thematical classes takes the focus on the perspective of a particular discipline, describing the causes and effects of climate change, as well as possible measures and instruments. The course also includes a group work, in which small and interdisciplinary groups of students approach a climate-related topic from different angles. This allows them to think critically and in a **solution-oriented** way on the topics of climate mitigation and climate adaptation.

The student evaluations thus far have been generally positive, and some students have indicated that it has really changed their thinking and the way they act on climate change. The course is also attended by external students.

**For more information click** here **or contact:**

Dr. Ann Crabbé, Senior researcher and member of the Research Centre on Environmental and Social Change of the University of Antwerp:
ann.crabbe@uantwerpen.be

Dr. Sara Vicca, Senior researcher at the University of Antwerp:
sara.vicca@uantwerpen.be

## 1.6 Multidisciplinary course on climate and biodiversity crises - Paris Dauphine-PSL

In 2020, a new course was launched at the University of Paris Dauphine-PSL on "**The Ecological Challenges of the 21st Century**". This course is part of a broader educational offer on SD and social responsibility at Dauphine-PSL. The course is attended by all first-year undergraduate students, regardless of the Bachelor they are enrolled in (computer science, economics, law, management, mathematics, politics, sociology, etc.).

The aim of this course is to enable students to understand the physical, biological, energetic and social mechanisms that determine climate change. It is consistent with Dauphine-PSL's overall ambition to train responsible students who will become professionals aware of the environmental, social and ethical consequences of their actions and decisions. The course consists of twelve sessions that provide students with knowledge to understand the scope of the issues surrounding climate change and biodiversity collapse.

The lessons were designed by a **multidisciplinary** team. They address the physical phenomenon of climate change, the rampant erosion of biodiversity, the way in which knowledge is produced on these two major

ecological risks, but also their socio-economic origins by looking at the history of ideas, their links with growth, or the emergence and expansion of the consumer society. The aim of the course is to teach the students to **think globally**, and to understand that the physics of climate change are linked to the life of the ecosystems and the structure of human societies.

After the first session, entitled "A History of Human-Nature Relations", which draws a broad picture from the Greeks to the Anthropocene, five lessons focus on climate and the movement of the Earth, the carbon cycle, the greenhouse effect, biodiversity, and the accelerating pace of climate change. A lesson is also devoted to the International Panel on Climate Change (IPCC) and its successive reports. Other lessons focus on energy issues, on the links between growth and the environment and another on the consumer society. A final session brings together all the key figures.

The twelve lessons are available both in an interactive virtual form and as a pdf. Five of the lessons are delivered in a lecture hall to 900 students. Each year, the inaugural lesson is an opportunity for students to discuss with guests from the business world and NGOs. In the 2nd year, the course continues with lessons on public policies, low carbon technologies, environmental justice, knowledge production and advocacy.
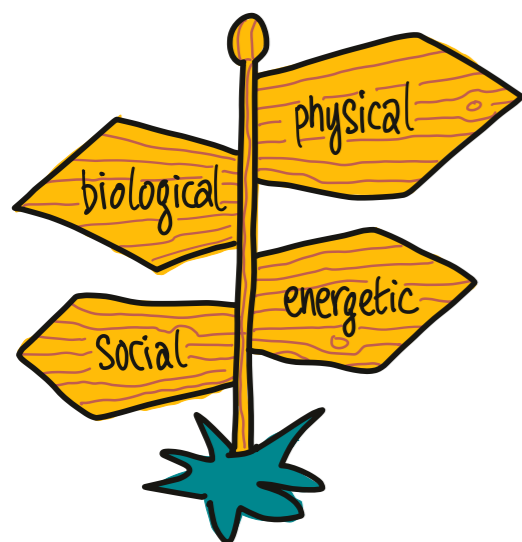
> **For more information click** here **(in French), or contact:**
>
> Prof. Arnaud Mias, Vice-President for Social Responsibility at Paris Dauphine-PSL
> arnaud.mias@dauphine.psl.eu
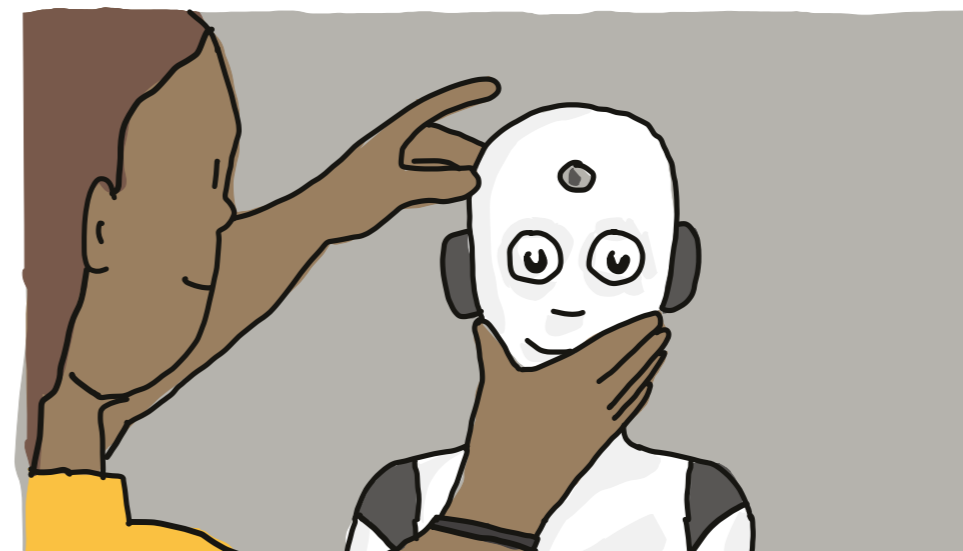


## 1.7 Course "Society, Sustainability and Digital Transition"- NOVA University Lisbon

NOVA University of Lisbon is a pioneer in Portugal in the education on environmental matters. Starting with a first degree in Environmental Engineering already 40 years ago, NOVA today offers a BA, a MA and a PhD programme on Environmental Engineering.

As SD became a central concern, many study programmes – from humanities to business and economics, health and medicine and science and engineering – of the NOVA schools have introduced the subject in many courses. The 2020 NOVA Sustainability Map Report[20] revealed that almost 20% of the courses running at the nine NOVA schools are related with sustainability, usually through the inclusion of the SDGs' scope and targets. The "Management Impactful Projects" course is an example from the NOVA School of Business and Economics, which challenges students to engage with an external organisation to co-create sustainable solutions to overcome existing problems and foster contribution to the 2030 Agenda. This course is mandatory for all BA students.

More recently, a specific initiative running at NOVA School of Science and Technology deserves to be mentioned due to its impact on undergraduate students. All 2nd year undergraduate students from all science and engineering programmes, including civil, mechanical, biomedical, chemical and biochemical engineering, have a compulsory 4-week intensive course on **"Society,**

**Sustainability and Digital Transition"**. This means that around 1,000 students, from any study programme, are enrolled, acquiring **fundamental literacy on sustainability**.

The syllabus includes: 1) training systems to think about the SDGs, starting from the driving forces and analysing its environmental, social and economic implications; 2) exploring visions and future pathways from the implications of production and consumption patterns, green growth and sustainable de-growth proposals; and 3) reflecting on aspects regarding globalisation and climate challenges to work out options for future generations.

Consolidating NOVA's sustainability journey, a detailed assessment of the curricula is now under development, aiming at promoting a greater alignment between traditional contents and the SDGs, and fostering a new perspective on their applicability in the real world.

> **For more information click** here **(in French), or contact**
>
> Prof. Julia Seixas, Pro-rector for Sustainability at NOVA University of Lisbon:
> julia.seixas@unl.pt

20 NOVA University Lisbon, 'Sustainability at NOVA' (link) (accessed on 19.05.2022)

## 1.8 Minor on Sustainable Development – Maastricht University

Maastricht University (UM) started the Sustainable UM 2030 programme in 2018. The programme includes a Sustainable Education pillar [21], whose aim is to increase awareness about sustainability among students and staff, to promote sustainability education at BA, MA and PhD level, to strengthen the link between research and education for sustainability (link with Sustainable Research pillar), and to offer education in a more sustainable way (link with Sustainable Operations pillar).

An important ambition of the Sustainable Education pillar for the period 2018-2021 was to enlarge UM's sustainability education portfolio and to promote competencies for SD in education [22] While there were several courses at UM providing interdisciplinary and integrated views on SD, this was not available to all students. The project team on Sustainable Education considered that the introduction of a UM-wide minor on SD could be an effective way to address the challenge of accessibility of ESD for students across the entire university.

The development of the minor was a challenging task, which took into account a series of conditions, guiding principles and sources of information:

- A **survey** among UM BA students was carried out to explore their **interest** in the Minor and the topics they would like to learn about. The results were informative and promising. Exploratory talks were also held with some staff from all faculties to assess their interest and support for the Minor.

- It was considered that students should learn about the environmental, economic, social, and institutional dimension of SD, but also about cross-cutting themes and interdisciplinary approaches. The development of key competencies for SD as prominent in ESD were considered important to be included in the minor offer as well.

- **Problem-based Learning (PBL)** is the educational method for the Minor, but where necessary and feasible it is supplemented by project-based learning (e.g. research-education projects in small student groups). **Heterogeneity** of students in tutorial groups in terms of nationality, discipline and gender was considered an important prerequisite for ESD.
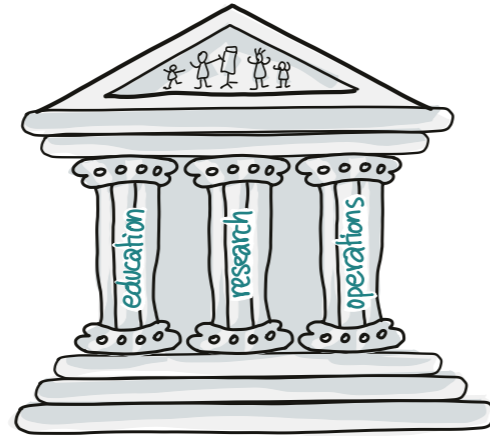
Based on the above, a first global design of the minor was proposed, providing the starting point to request funding from university management. The project group creating the design of the minor consisted of teaching staff from all faculties, educational experts, and was chaired by a project leader of the Sustainable UM 2030 programme. Feedback on the minor and course designs were provided by the project team on sustainable education, and in this process, also student feedback was sought from students from the various faculties and student representatives of the university and faculty councils.

The UM-wide minor on Sustainability (25-30 ECTS) started in September 2021 and is available to students from across the six faculties of the university. It has been built by teaching and research staff from all faculties with various academic backgrounds and it is composed of a unique collection of courses, including skills modules in which students develop their competencies for SD. Students are offered an optional research project on sustainability. The minor is accessible to almost all UM students and aims for a unique cross-faculty learning experience.

**For more information click** here **or contact:**

Dr. Ceren Pekdemir, Coordinator Sustainable Education UM, Lecturer MSc Programme Sustainability Science, Policy and Society, Maastricht University:
Ceren.Pekdemir@maastrichtuniversity.nl

21 Fischer, M. & v.d. Wetering, F. (2018), Sustainable UM 2030: Definition, programme, and organisation, 18 February 2018 (link).
22 These are Collaborative (education and research are best organised in teams rather than individually), Open (being open minded and inclusive), and Research Education (about the integration of research and education).

## 1.9 Studies for Sustainable Future - University of Eastern Finland

The University of Eastern Finland (UEF) seeks to **embed SD in all its education** activities. Elements of SD are integrated into teaching materials and methods, as well as in thesis supervision in accordance with the university's curriculum guidelines. The aim of the integration is to ensure that every student is comprehensively educated about SD.

The environment and SD are emphasised in the university's fields of study. The education offered by the Faculty of Science and Forestry at UEF naturally covers a wide range of academic subjects related to the environment and SD, but sustainability and responsibility are also included in many of the academic subjects offered by the university's other faculties. For instance, in teacher training, students are taught how to holistically take aspects of SD and responsibility into account in teaching.

For the academic year 2022/23, UEF is launching a new multidisciplinary **minor subject on Sustainable Development**. This new introduction, "Studies for Sustainable Future", offers insights into different dimensions of sustainability with a focus on environmental themes and natural resources. In addition, there are many MA programmes, minor subject studies, and international MA programmes focusing on SD at UEF.

**For more information click** here**, or contact:**

Dr. Outi Ratamäki, Senior Lecturer, Environmental law and policy, University of Eastern Finland:
outi.ratamaki@uef.fi

## 1.10 MA in Sustainable Development and Global Governance – UC3M

The MA in Sustainable Development and Global Governance (MASUS) at the Universidad Carlos III de Madrid (UC3M) offers a **multidisciplinary training** in the analysis of problems related to SD and global governance. Based on an understanding that environmental and socio-economic sustainability are closely linked and that global governance has an imminent role in both, MASUS provides comprehensive training to tackle multifaceted challenges of sustainability. Due to its flexible structure and breadth of elective courses, it facilitates specialisation in various areas of sustainability, according to students' individual interests.

MASUS offers conceptual and methodological training in different areas of SD based on four modules: (1) Introduction to sustainability; (2) socioeconomic sustainability, focused on issues like hunger, poverty, inequality, gender, and sustainable work; (3) environmental sustainability addressing issues such as climate change, biodiversity, ecosystems, and environmental impact analysis; (4) global governance dealing with geopolitics of natural resources, conflict and development, international law and green politics, among others.

This MA programme goes beyond knowledge about complex challenges of sustainability. Embracing a **hands-on approach**, it equips students with necessary skills to generate evidence-based comprehensive solutions in addressing the challenges of sustainability.

**For more information click** here**, or contact MASUS Directors:**

Işik Özel:
iozel@clio.c3m.es

Esteban Nicolini Alessi:
nicolini@clio.uc3m.es

## 1.11 Virtual Academy for Sustainability - University of Bremen

Inspired by the UNESCO goal "Education for Sustainable Development" (ESD)[23], the Virtual Academy for Sustainability (VAS) of the University of Bremen has been offering online courses on sustainability for the past ten years. Initially financed by the German Federal Environmental Foundation and the Federal Ministry of Education, the University of Bremen took it over since August 2021.

The VAS aims to support other HEIs to implement ESD in the academic curriculum, and they do so through the production of free and worldwide available online open educational resources. So far, 22 online courses (each one addressing one or more SDG) are currently available on the platform. Most of the courses are in German, four are in English and one in Spanish, and the VAS is working on further expanding its offer in other languages too.

The VAS currently has more than 40 partner institutes in Europe and others from all over the world. The **online learning videos** are produced at the University of Bremen and are freely available to everyone on YouTube. Examinations, however, can only be done via partner universities that have agreements with the VAS. Students get ECTS via the university where they take the course from. The assessment takes place digitally, via electronic examinations run at the partner university and hosted from the University of Bremen. Since 2012, over 20,000 examinations have been passed (about 2,500 per semester). **The courses are not linked to the semester structure**: students can take them whenever, at the pace they prefer, they want and get assessed when they feel ready. Further to the production of educational resources, the VAS also works in the field of research on online teaching for SD.

Over the years, the VAS has experimented with different didactical formats, with the objective of **increasing students' involvement in the learning process**. The transdisciplinary nature of ESD calls for different didactical approaches to (digital) teaching. At the VAS, the learning concepts are offered in four formats: learning videos and digital assessment (to develop basic knowledge and understanding), blended learning (to deepen previously learned knowledge), digital collaborative groups (student's own work in the form of podcasts, video commentaries, students peer review), and collaborative research-based learning (students work on their own small research projects).

**For more information click** here**, or contact:**

Katharina Lingenau, Coordination "Digital Teaching and Learning" Virtual Academy of Sustainability:
lingenau@uni-bremen.de

Jonas Joachims, Virtual Academy of Sustainability:
joachims@uni-bremen.de

---

23  UNESCO (2019) Framework for the implementation of Education for Sustainable Development (ESD) beyond 2019, 3 September 2019 (link).

## 1.12 Network for Sustainable Teacher Education - University of Potsdam

The project "UP Network for Sustainable Teacher Education" is one of the model projects at German HEIs funded by the German Academic Exchange Service since 2021. It is directed by the University of Potsdam (UP)'s Center of Teacher Education and Educational Research and guides the development of the **university's teacher education** expertise and resources, initiatives, and collaborations that supports the university's internationalisation strategy. The project pursues the vision of an **interdisciplinary, transnational network** with partner institutions, with the goal of establishing and expanding international partnerships, acquiring (inter-)cultural and language competencies of students, integrating intercultural focal points into teacher education programmes, and creating new learning and exchange opportunities for students and staff.

The experience of the working group "Internationalisation of Teacher Education" demonstrated the potential of interdisciplinary, international networking and laid the foundation for the project, which consists of twelve sub-projects involving various subjects and departments of teacher education with ESD as a cross-cutting theme. The common interest in both **internationalisation and sustainability** forms the ideal basis for interdisciplinary, high-quality education, which is even more important for future teachers as they will play a vital role when it comes to implementing the 17 SDGs and preparing younger generations.

The UP interdisciplinary Summer School "**Teaching the SDGs**" constitutes the heart of the project. International lecturers and up to 60 students from institutions all over the world will bring in a variety of expertise, disciplines and perspectives. An introductory keynote contextualises the topic of ESD. On that basis students will work in four subject-specific study groups on the topics of Green Cities, Clean Water, Global Citizenship and Teaching the SDGs in Music Education. In interdisciplinary workshops, they will acquire strategies for a **transformative pedagogy** that will enable them to help shape schools for sustainable futures. They will for example get to know the Identity Project as a way of **engaging in culturally diverse classrooms**. As an additional inspiration, students are invited to attend the Better World Award UP ceremony, which recognises MA theses and dissertations at the University of Potsdam that make a significant contribution to our global society. The programme is rounded off by social activities in Berlin and Potsdam that also address the SDGs and provide opportunities for international exchange and personal connections.

The summer school is just one of many initiatives in the context of sustainability within the "UP Network for Sustainable Teacher Education". The network also contributes to a project week that was designed in cooperation with a secondary school in Potsdam on a real-life, relevant topic with the involvement of a German school abroad. Issues of SD are studied from disciplinary perspectives and discussed with the school students with ample practical relevance.



**For more information click** here **(in German), or contact:**

Prof. Dr. Britta Freitag-Hild, Deputy Director of Center for Teacher Education and Educational Research and Project Director of DAAD-project "UP Network for Sustainable Teacher Education" Teaching English as a Foreign Language:
freitagh@uni-potsdam.de

Stefanie Goertz, Project Coordinator of DAAD-project "UP Network for Sustainable Teacher Education":
Stefanie.Goertz@uni-potsdam.de

## 1.13 MA in environmental and Sustainability Education - University of Cyprus

The MA programme in "Environmental and Sustainability Education" offered at the University of Cyprus (UCY) aims to develop the students' ability to **critically reflect on SD in an educational context** and to strengthen their abilities to develop, design and evaluate educational initiatives that can contribute to SD. Questions from various disciplinary and interdisciplinary starting points in relation to both **formal and informal educational contexts** are explored and possibilities and challenges for the educational practice are discussed and problematised.

Through the programme, beginning and experienced environmental educators, including teachers, non-formal educators, environmental or park managers, zoo or botanic garden educators can acquire skills in basic and applied research, designing and developing curricula, evaluating and reforming educational policies, and develop skills for critically analysing recent trends and findings related to environmental and sustainability education. The programme also supports ongoing professional development of in-service teachers. After successful completion of the programme, it is expected that participants:

- Learn about environmental and sustainability education foundations and approaches, and environmental action in schools and non-formal settings.
- Critically review and analyse perspectives in educational science on complex phenomena and processes of change within SD.
- Apply a scientific approach in relation to theoretical, practical and policy-related aspects of environmental and sustainability education

and apply research-based knowledge to start new or enhance existing environmental education programmes.

- Develop skills for designing and running research in Environmental and Sustainability Education (ESE).
- Get acquainted with a range of quantitative and/or qualitative research methods and acquire experience in applying these methods to the collection and analysis of data and in promoting the study of basic and applied questions in ESE.
- Use available research evidence and develop detailed suggestions for educational policy changes taking into consideration existing needs and constraints of the educational system, to continuously optimise the effectiveness of the teaching-learning process.

The programme includes courses on educational research methodology and curriculum development, and courses on the foundations of ESE, its social and political aspects, the use of learning theories and related current research. The participants in the programme have the opportunity to engage with the work of environmental NGOs.

**For more information click here, or contact:**

Prof. Kostas Korfiatis, Department of Education: korfiati@ucy.ac.cy

## 1.14 Summer School in Sustainable Practice - University of Essex

The **Summer School in Sustainable Practice** was founded in 2017. This intensive two-week programme is now in its fourth year and has been a great success. It is open to all Essex students free of charge and there are about 30 places annually. The Summer School has two main aims: the first is to enable students to deepen their knowledge and understanding of the climate/environmental crisis and enhance their sustainability and ecological literacy; the second aim is to enable students to develop their confidence, skills and capabilities and empower them as change-makers in their future jobs and everyday lives as citizens. On completion of the programme, students receive a Certificate in Sustainable Practice, their participation appears on their Higher Education Achievement Record (HEAR) and counts towards the "Big Essex Award", which recognises students' extra-curricular activity.

The Summer School brings together students from different disciplines across the Faculties of the Humanities, Social Sciences and Life Sciences. Given that many students have never studied the climate/ecological crisis or sustainability, there are no pre-requisites; just a desire to learn and share ideas. There is no formal assessment: students are expected to attend all sessions and do an hour's preparation each day. The programme is inspired by Freireian principles[24] and, where possible, uses **active, collaborative and experiential pedagogies**. Sessions last about four hours a day and have varied formats. Some are classroom-based and combine lectures, guest talks, class discussion and exercises. But students also go out and about on campus and in the Colchester area to find out what is happening in the University and locally to reduce carbon emissions, foster biodiversity and promote sustainable food and transport.

The programme is carefully structured to **move from theory to practice** and from the realities of the crises to sustainable solutions. The first week opens with lectures and guest talks on topics such as the science of climate change, resilience, and agroecology. These are complemented by two field trip days where students learn how key concepts relate to practice: the first field trip involves volunteering at an organic farm that runs on community supported agriculture principles; the second is to a local nature reserve which was created on the site of a disused quarry. The second week starts with talks on strategies for moving to a zero-carbon economy and society, as well as sustainability initiatives at the University. Students then spend two days working in groups on small-scale projects before presenting their work in the final session. Projects have covered a wide variety of topics, such as raising awareness of how to live sustainably, reducing meat consumption, local walks, sustainable fashion and devising plans to improve facilities on campus. In some cases, students have continued these projects either in their own time or as part of a final year undergraduate module in **community engagement.**

Past students have really enjoyed the Summer School and find the combination of classroom and practical learning significantly enhances their knowledge and understanding. Although only two weeks, for many students the Summer School is a turning point in their understanding of the climate and ecological crisis. It is often a catalyst for getting involved locally and going on to further studies and careers relating to sustainability

24  Freire Institute, Concepts used by Paolo Freire, in Freire Institute website (link), accessed on 16 May 2022.

**For more information click here, or contact**

Dr. Jane Hindley, Senior Lecturer, Deputy Director, Interdisciplinary Studies Centre (ISC), School of Philosophy and Art History, University of Essex: janeh@essex.ac.uk

# CHAPTER 2

# Encouraging students'
## leadership in sustainability

How can students be empowered to become leaders in sustainability beyond their curriculum? What are successful examples of their active involvement in projects that can have an impact in their communities and on their own perception of their role in promoting SD?

The cultural change needed to take forward SD cannot be achieved solely via formal learning, but also through extra-curricular activities in which students are empowered to develop their leadership in sustainability. This section describes two initiatives of Green Offices in the universities of Antwerp and Konstanz, and several other initiatives of students' engagement in sustainability activities from the universities of Rijeka and Rome Tor Vergata.

From these examples, we can see that **involving students in meaningful ways** in designing the solutions related to learning for environmental sustainability is key in making them feel active players of change instead of being mere recipients of educational policies. This goes further into the **implementation** of activities, where an **active engagement** of students and participants directly contributes to the outcomes. When looking at the progress made, these practices indicate the importance of starting small and taking a step-by-step approach. Various activities contribute differently but in the same direction, through networking, people connections, expertise and ideas. Students' actions, academic change and operational change evolve with different speeds; what is important is to puzzle them together in order to see the bigger picture. The engagement among different players does not stop within the boundaries of the university but enlarge towards other stakeholders, private companies, public administration, and local and international communities (Quintuple Helix Model).

Non-formal educational activities, such as the ones led by the Green Offices at universities offer the opportunity to **institutionalise efforts** made to promote a sustainable institution, to keep engagement high, and to integrate all university members in the sustainable development of universities. They are an important step towards embedding a sustainability culture and facilitate the engagement of the university community at all different levels.

## 2.1 Green Office and Certificate 'N' - University of Konstanz

The Green Office Movement was founded in Konstanz in 2010 and now counts 65 Green Offices in 10 countries, handling a total of about 750 projects. Before the launch of its Green Office (GO) in 2015, the engagement with sustainability at the University of Konstanz was mostly taking place on a voluntary level of students engaged in sustainability projects, without a structural establishment of sustainability at the university and with only a few lectures dealing with the topic.

The lack of a more clustered and harmonised approach led to some important challenges, mostly connected to the lack of knowledge transfer and the continuation of students' involvement. The creation of the GO was part of the solution. Thanks to the launch of the state-aided programme "Funding for innovative activities" in November 2013, the GO was founded two years later in April 2015.

The GO is an official part of the University administration (the Staff Unit Sustainability acting as a superior entity). It cooperates regularly with the General Students Committee for budget and projects. Until 2020 the GO used to be financed yearly from funds. Since then, it receives an assured budget (until 2026) from the university. All GO members are officially employed by the university as "student assistants".

The activities of the GO revolve around seven topics: Operations; Community; Education and Research; Internal Coordination; Internationality; Finance; and Marketing. The Green Office's activities are supervised by an Advisory Board composed of 12 members coming from the student body, the leadership, the administration, the academic staff, as well as external members. The Advisory Board has a crucial role: it discusses the office's strategic development, and it provides feedback and specialised and methodological input.
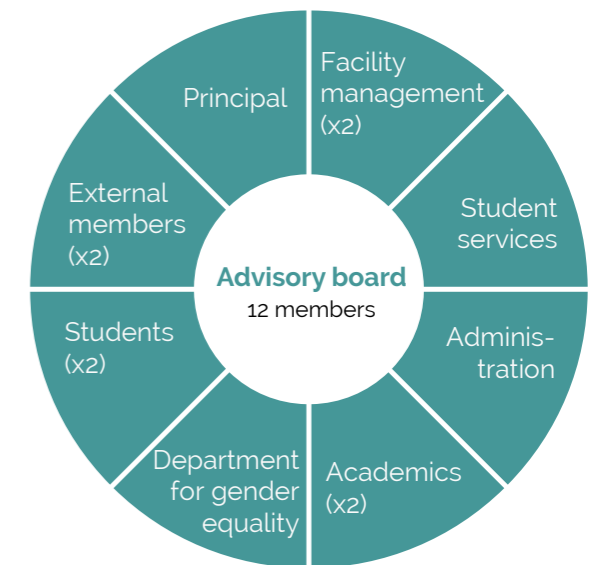


*Figure 2: Composition of the Green office's Advisory Board and its role*

Despite the support that the GO has from the university, it also faces some challenges: for example, the internationalisation of the GO activities suffers from the fact that the integration of Erasmus+ students is hindered by the lack of harmonisation in the learning agreements (as participation in sustainability activities is not recognised for ECTS). Furthermore, financing student initiatives is not always possible when budget is not made available. Moreover, since the GO is led by students, who stay at the university for the time of their studies, fluctuation in the team is a natural challenge. An efficient transition management comprising defined structures and processes is therefore one of the keys for sustainable success of a GO.

The GO of the University of Konstanz organises a series of activities on sustainability. **Project Week Sustainability** is a week full of activities, presentations, workshops, excursions and movies, with the goal of **generating attention** and strengthen sustainable communities. Every two years, the GO also publishes a **sustainability report** which assesses the status quo of the sustainability activities run at the university and establishes benchmarks. Furthermore, in cooperation with the VAS (case study 1.11) the GO also supports students in the "key competencies" seminars (3 ECTS) on sustainability run at the university.

**Qualification N**
The sustainability certificate for students

**Learning objectives**
- Students are able to compare different sustainability concepts.
- Analyse and criticise social developments on the basis of sustainability criteria.
- Create recommendations and solution statements.
- Have an interdisciplinary perspective on sustainability topics

Practice

**Closing presentation**

**Practice-based projects or internship**
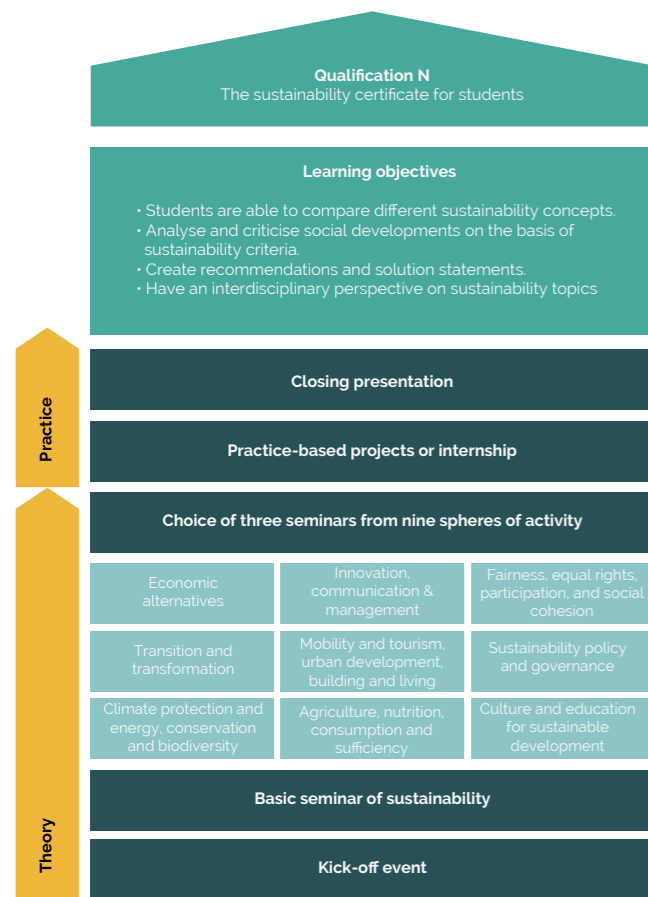
**Choice of three seminars from nine spheres of activity**

| Economic alternatives | Innovation, communication & management | Fairness, equal rights, participation, and social cohesion |
| Transition and transformation | Mobility and tourism, urban development, building and living | Sustainability policy and governance |
| Climate protection and energy, conservation and biodiversity | Agriculture, nutrition, consumption and sufficiency | Culture and education for sustainable development |

Theory

**Basic seminar of sustainability**

**Kick-off event**

*Figure 3: Learning goals of Certificate 'N'*

## 2.2 Green Office's involvement in the climate week - University of Antwerp

In 2009, a month before the climate summit in Copenhagen[25], a couple of junior researchers and university staff members from the environmental service (operational) and the (academic) institute of environment and sustainability from the University of Antwerp, mobilised the whole university community to emphasise the emergency of Climate action. The action sorted some important results:

- Publication of an open letter in a Flemish newspaper, with many academic and other subscribers (rector, all the faculty deans and the university board included).

- Organisation of a **climate week** on all university campuses, in nearly all faculties. More than 25 open courses were given, and professors twisted their 'normal' lesson into a climate related topic, with the approach from their own expertise – and most of those courses were open to all interested students and (non-academic) staff. Student unions organised during that week screenings of documentaries, movies and other fun activities for the students. University catering services also served low-water footprint meals.

Furthermore, the **"Certificate 'N': sustainability certificate for students"** started in the winter term 2017/18 and is open for all courses of study in an optic of interdisciplinarity. The course is run in cooperation with the Centre of Transferrable Skills for the theoretical part and by the GO for the practical part. It also involves cooperation with external partners such as environmental associations, municipalities, companies, etc.

> **For more information click here, or contact:**
>
> Dr. Hilmar Hofmann and Luisa Hoffmann, Staff Unit Sustainability at the University of Konstanz: hilmar.hofmann@uni-konstanz.de and luisa.2.hoffmann@uni-konstanz.de
>
> Maximilian Düerkop, Coordination Operations the University of Konstanz' Green Office: greenoffice.projekt@uni-konstanz.de

Since then, UAntwerp organised six climate weeks[26] with open courses, collaborations with the catering services and with a couple of student unions. From 2018 on, the Climate week is co-organised by the student Green Office (GO) team, which was established during that academic year.[27]

Besides the organisation of a climate week, the GO students support the student unions to become more sustainable and waste free. They help to increase the visibility of existing sustainable projects, choices and actions at the different university campuses (give cabinets, weekly short chain organic vegetable bags, collective gardening, *plog*[28] actions, etc.) for all the students via social media, the student gazette and online information.

In that same year (2018) during the climate week, interested staff and students were brought together to co-create an ambitious climate action strategy[29], with actions in 11 domains (e.g. research and education, international travel, energy and buildings). This bottom-up approach lead to a roadmap for the coming 10 years for UAntwerp to become Climate neutral by 2030, and fossil free by 2050.

> **For more information, click here or contact:**
>
> Carla Uwents, Environmental Office of the University of Antwerp: carla.uwents@uantwerpen.be

---

26  In 2014, 2015, 2018, 2019, 2020, 2021 (although those last two were 'light' versions because of the Covid pandemic)
27 The Structure of the UAntwerp's Green Office follows the model mentioned in the case of University of Konstanz.
28 Picking up litter on the street while jogging/walking.

---

29 Climate Action Strategy, University of Antwerp (link), accessed on 16.05.2022

## 2.3 Student engagement initiatives - University of Rome 'Tor Vergata'

The University of Rome 'Tor Vergata' aims at playing a leading role the promotion of the territorial sustainability, by collaborating with different sectors. Its Sustainability Plan released in 2014 includes the actions required to reduce long-term negative externalities - with particular reference to greenhouse gas emissions - generated by the university's activities. The new mission and vision of Tor Vergata aim to contribute to people's education and training, to scientific research and technological, organisational and social innovation needed to achieve the SDGs.

In 2016, in collaboration with the Unipolis Foundation, Tor Vergata proposed the creation of the Italian Alliance for Development Sustainable (ASviS) with the intent to grow the awareness on the importance of the issues addressed in the UN 2030 Agenda for Sustainable Development. In the same year, a committee for the implementation of the Mission and Vision of sustainable development in the University was set-up, bringing together representatives of each Department of the

University. In 2018, the committee created a University Green Office. Tor Vergata plays an important role at international, national and local level and promotes:

- Research programmes on SD with a special attention to multidisciplinary approaches (economics, management, biology, engineering).

- Agreements with other academic and non-academic institutions oriented to SD and promote/implement sustainable local and international network agreement, with Global Compact Italy, Sustainable Development Solution Network, SDSN Mediterranean, Asvis, Next, RUS (Universities Sustainable Network), YERUN.

- Several courses on SD[30]; a Master (called "Maris") on "Reporting Innovation Sustainability"[31]; a Summer School on "Multidisciplinary Sustainable Development Labs"; and "The New Economy Labs - Preparing for the Future", whose main aim is to stimulate the students' self-entrepreneurship

---

25 Copenhagen Climate Change Conference - December 2009, in United Nations Climate Change website (link), accessed on 16.05.2022

---

30 Tor Vergata, 'Lo Sviluppo Sostenibile nel piano di studi' (link), accessed on 16.05.2022
31  Maris Master di II livello (link), accessed on 16.05.2022

and grassroots mobilisation, by enabling meetings, and creating synergies between local entrepreneurs and creative students.

Tor Vergata pays particular attention to its relationship with the Municipality of Rome and its territory, with a view to contributing to the improvement of the citizens' quality of life and bringing future perspectives for firms and institutions living and operating on the territory. For these reasons the Department of Management and Law, Faculty of Economics increased the engagement of different stakeholders (students, academic staff, professors, researchers, local actors such as municipalities, associations, private companies) in various projects that helped the local community and territory:

- **Ethical Cash Mob:** this is an initiative of animation and mobilisation of citizens that takes place in a specific territory and whose goal is to match responsible citizens and businesses. Tor Vergata has been organising various Ethical Cash Mobs promoting Fairtrade since 2015. All the Cash Mob have been organised in the context of "The New Economy Labs - Preparing for the Future" by the students and academic staff for promoting ethical business in the territory where the university is located.

- **Civic Crowdfunding Campaigns:** this is a collective funding of public works and projects (outside the budget of the administration), carried out by citizens, organisations and private companies, sometimes in collaboration with the public administrations. Some examples of such campaigns led by Tor Vergata are:

  o "Saturday in Library", allowing the Library of the Faculty of Economics «Vilfredo Pareto» to be open on Saturday morning (first Civic Crowdfunding project in Italians Universities).

  o "A playground for Aurora", to buy accessible games for disabled children for an inclusive playground. The area has been re-generated in name of Aurora, died at seven months due to a very rare cerebral cancer[32].

  o "Tor Vergata for the Coronavirus emergency", to help Policlinic Tor Vergata (University' hospital) during the Coronavirus' lockdown (collected €26.525)[33].



**Other projects promoted by Tor Vergata's Green Office:**

GOCCIA: this is a practical and light stainless-steel bottle, completely carbon neutral, that is made by compensating, with certified reforestation projects, the carbon dioxide emissions emitted during the different stages of production. Furthermore, free drinking water fountains have been installed in the University.

SEDIA: thanks to this project, seven solar charging Stations with outdoor Smart Benches were installed on the Tor Vergata campus. The benches allow those who sit on them to charge their electronical devises via USB doors. The energy is self-produced by the bench via the sun light. Thanks to the project, the Tor Vergata Campus is equipped with convivial benches making the outdoor spaces more usable by the university community for educational and recreational use, without sacrificing the eco-sustainable aspect.

M'ILLUMINO DI MENO: the campaign invites to reduce energy consumption to a minimum, by turning off the largest number of unnecessary electrical devices, creating a moment of symbolic energy silence.

**For more information, click here or contact:**

Prof. Gloria Fiorani, Department of Management and Law:
fiorani@economia.uniroma2.it

Dr. Irene Litardi, Department of Management and Law:
litardi@economia.uniroma2.it

---

32 In this specific case the promoters of the initiative in the Roman University were a group of students in collaboration with the GCS research group, Department of Management and Law, the profit company (Ecozema, VeioGas, Fairtrade) and non-profit organisations (Next-Nuova Economia per tutti).
33 More information here (in Italian).

# 2.4 Student-led activities - University of Rijeka

The University of Rijeka (UNIRI), Faculty of Tourism and Hospitality Management (FMTU), is the only institution in Croatia fully focused on education, human resources development, and scientific research in the field of SD with an emphasis on tourism at all levels of education. Students are offered a vertical education starting with the undergraduate programme in Management of Sustainable Development (4 years, 240 ECTS), the postgraduate programme in Sustainable Tourism Development (1 year, 60 ECTS), and the postgraduate university doctoral programme in Management of Sustainable Development (3 years, 180 ECTS).

In addition to the formal education, students and faculty employees are engaged in various extracurricular activities that promote the SDGs. To implement the principles of SD in everyday study and business, an Eco-Committee has been established at the Faculty, composed of students' representatives from all years of study, representatives of employees (teaching and administrative staff), representatives of local associations, and representatives of local self-government units. Meetings are held twice a month and various activities related to social and environmental issues are organised. Some of the activities held are:

BLUE CLEANUP: "**Blue Clean-Up** – Let's do it Mediterranean" is a joint one-day action to clean the sea, underwater environment, and coastal areas. It is part of the regional project "Let us do it Mediterranean", in which the countries of the Mediterranean participate with the common goal of a clean Mediterranean Sea. The goal is to make students and citizens aware of the need to protect the environment and the sea on which and with which they live.

Anti-Bullying Day (**Pink Shirt Day**): During the Anti-Bullying Day - Pink Shirt Day students and employees wear a pink shirt with the message "Violence stops here!". This commemorative day highlights the fight against bullying and reminds everyone that the University is a place of zero tolerance for violence.

**Digital Cleanup Day:** The World Digital Cleanup Day takes place around the world every year on 19 March, and FMTU also participates in this day: through a dedicated workshop, students became aware of their online habits and of the importance to reduce their digital footprint and introduce digital hygiene.

**Eco-Recipes**: Students design eco-recipes twice a month that is posted on social media. The goal of the eco-recipes is to make students and faculty aware of the environmental footprint of certain foods, which may also be simple and available from local producers.

**Student Tips to Save Energy and Water**: To contribute to SDG Goal 6 Clean Water and Sanitation and Goal 7 Affordable Energy from Clean Sources, and as energy costs continue to rise, students created energy conservation tips to improve energy efficiency.

**Green Library:** In the Faculty Library there is a "green" corner with books and articles thematically related to SD, climate change, energy efficiency and ecological footprint, all based on examples from tourism.

**For more information click here, or contact:**

Prof. Marinela Krstinić Nižić, Ph.D, Vice-Dean for Development at the University for Rijeka:
marikn@fthm.hr

# Policy recommendations

The practices presented in this paper show us that HEIs are on a good track to fulfil their role of active promoters of SD. They also indicate that there is no single path to reach the objective of fostering a new generation of students which is aware of the challenges that the transition towards sustainability brings about, and which has the critical thinking necessary to convert those challenges into new opportunities for the future. On the contrary, this objective can be reached through multiple ways, all of which can be very valuable and adapted to different contexts. While some are more advanced than others, all should be celebrated because all are unique – depending on the institutions involved, their geographical and socio-economic context, their history, their educational culture and the actors involved.

The examples presented in this paper give us the opportunity to identify some key recommendations that policy makers should keep in mind in the implementation of the Council Recommendation on learning for environmental sustainability:

**Sustainable development (SD) is much more than environmental sustainability:** its social and economic aspects are equally important and should be fostered at the same degree as environmental protection. Neglecting them will hamper the efforts made on other fronts to ensure diversity and inclusion, in which universities also play a crucial role. In that sense, "learning for environmental sustainability" should enlarge to important aspects relating to SD, whose ultimate objective is to promote prosperity while protecting the planet.

**An effective education for sustainability must be supported by a solid vision by the university's leadership.** Education leaders need support in managing the organisational change that the green transition requires. Supporting the development of training programmes run at international level could be a good solution. Moreover, the existing dialogues among international partners (e.g. by memberships to international networks such as YERUN) on SD helps to support the actions taken at every university and convinces leadership of the need to tackle the 2030 Agenda.

**Communication and dialogue are crucial to bring the whole academic community on board:** experience so far shows that many in the academic community do not yet see the urgency of embedding sustainability in their programmes. This can be seen as an intrusion in their teaching curricula and methods. Fostering dialogue among the academic community will help overcome this gap and understand the reasons behind possible skepticism and lack of motivation. Dialogue and early engagement mitigate the feeling of having something imposed on oneself, and rather foster the feeling of belonging to a common project for the well-being of future generations.

**Interdisciplinarity is key to a thorough understanding of SD:** sustainability should not be taught in silos, but rather in a way that considers the implications that different disciplines have on it and vice versa. This will encourage students to think beyond the borders of their own disciplines and to consider different perspectives when approaching a sustainability-related topic.

**A project-based learning approach aimed at solving real-life sustainability challenges** is a useful pedagogical approach, likely to stimulate active and deep learning. This also helps students better understand SD in the context of their own surrounding reality at local and/or regional level and to think beyond their campus, and to consider synergies between their university and the other sectors operating in their community.

**Sustainability needs to keep an international approach:** the initiatives on sustainability run by the universities could be better linked to the activities that exchange students do while studying abroad. However, international students have a hard time in getting their participation in credit-bearing activities recognised by their home university. This is a bottleneck that could and should be addressed, especially in the context of the Erasmus+ programme. Having more cooperation would mean encouraging exchange students to participate in sustainability activities while also achieving their learning objectives.

**Students' feedback must inform the different educational offers on SD:** it is very important to listen to the students' feedback on the educational offers provided, and to involve them in designing solutions related to learning for environmental sustainability. This will make them feel active players of change instead of mere recipients of educational policies and will ensure that the knowledge they gain does not stop in class but remains with them as they make their way into the professional world.

**Students must be empowered in meaningful ways to be leaders in sustainability:** parallel to the formal education, it is very important that students are actively involved in extra-curricular projects and/or initiatives, by collaborating with other societal actors such as private companies, public administration, third sector, etc. This way, they will have a clearer understanding of the fact that change can only be achieved if everyone plays their part, and they can have a first-hand impression of the impact that they themselves can make.

**More support for student initiatives on sustainability should be provided.** Students must be empowered to be active actors of change and should be given hands-on opportunities to learn. "Learning by doing" might never be more effective than in this context. Sustainability must be learnt not only in the classroom setting, but concretely experienced via projects and initiatives. Students already organise an impressive number of activities, via their Green Offices but not only. Many of these initiatives, however, do not advance due to the lack or continuation of funding.

**The adaptation of the academic curriculum requires experts.** This expertise is acquired with training and skills development. Teachers need support to develop the competences needed to communicate sustainability to their students and to deal with criticism, lack of motivation, misconceptions that they might be faced with during the teaching and learning process. Furthermore, sustainability is interdisciplinary and educational methods and process of learning need to reflect this.

**Universities must be equipped with adequate funding to support the sustainability initiatives** run by their students, within the Green Offices and beyond. Relying on a stable funding can allow for the development of a long-term vision, and for the continuity of those initiatives that otherwise tend to fade out with the students' turnover. This risk can only be avoided through a formal integration of sustainability into the university's structures, offer and vision.

# Conclusion

This paper represents one important outcome of the work of the YERUN ad hoc group on SDGs and shows what being "Responsible and Engaged Universities" means in practice. By collecting the examples presented above and identifying key takeaways, the paper facilitates a better understanding of how young research universities are integrating sustainability in their educational offer, of the challenges they are facing in this endeavor and of the solutions they have developed so far. This learning approach that considers students, teachers, leaders and surrounding communities is key in reaching that joint vision that the UN 2030 Agenda for Sustainable Development and the EU initiatives mentioned throughout this paper aim to achieve.

Based on the examples collected in this paper and on the policy recommendations identified, YERUN aims to bring some new perspectives on the topic of Education for Sustainability, and to encourage further exchanges of views and experiences within the academic community and beyond. It is only by learning from each other and creating solutions together that we can achieve the critical mass needed for real change.

YERUN's commitment to the SDGs will continue, with further work on the topic of research and sustainability and on the leadership's role in fostering this much needed cultural change of which universities are leading promoters.

# Bibliography

- Design Council, "What is the framework for innovation? Design Council's evolved Double Diamond" (link) (accessed on 16.05.2022)

- European Commission, Proposal for a Council Recommendation on Learning for Environmental Sustainability, COM(2022) 11 final, Brussels, 14 January 2022

- European Commission, A European Strategy for Universities, COM(2022) 16 final, Strasbourg, 18 January 2022

- European Universities Association (EUA), Universities and Sustainable Development Towards the Global Goals, December 2018

- Freire Institute, Concepts used by Paolo Freire, in Freire Institute website (link) (accessed on 16.05.2022)

- Maastricht University, Fischer, M. & v.d. Wetering, F., "Sustainable UM 2030: Definition, programme, and organisation", February 2018

- Master Maris (link) (accessed on 16.05.2022)

- NOVA University Lisbon, "Sustainability at NOVA" (link) (accessed on 19.05.2022)

- Purvis, Ben, et al. "Three pillars of sustainability: in search of conceptual origins". In Sustainability Science (2019) 14:681–695

- Rauch et al. "Designing and Implementing an Interfaculty Elective "Sustainable Development" at a University: Concepts, Developments and Lessons Learned", in ARISE - Action Research and Innovation in Science Education (2021) 4(1), X-X

- Tor Vergata University of Rome, "Lo Sviluppo Sostenibile nel piano di studi" (link) (accessed on 16.05.2022)

- Tor Vergata University of Rome, "Economia promuove la campagna di civic crowdfunding "Aiutiamo a curare di più" (link) (accessed on 16.05.2022)

- UNESCO, Knowledge-driven actions: Transforming higher education for global sustainability, 2022

- UNESCO, Framework for the implementation of Education for Sustainable Development (ESD) beyond 2019, 3 September 2019

- United Nations Climate Change, "Copenhagen Climate Change Conference" (link) (accessed on 16.05.2022)

- United Nations, "17 Goals to Transform Our World" (link) (accessed on 16.05.2022)

- University of Antwerp "Climate Action Strategy" (link) (accessed on 16.05.2022)

- University of Limerick, "Sustainable University Strategy 2022-2030" (link) (accessed on 13.05.2022)

- University of Rijeka, "Sustainable Development Goals" (link) (accessed on 16.05.2022)

- University of Rijeka, "Svako četvrto dijete u Hrvatskoj izloženo je vršnjačkom nasilju!" (link) (accessed on 16.05.2022)

- University of Rijeka, "On Saturday 18th, BACKTOBLU organised the Beach clean-up in Kostrena, as part of the World Clean-up Day!" (link) (accessed on 16.05.2022)

- University of Southern Denmark, "UN's 17 Sustainable Development Goals become SDU's goals" (link), (accessed on 16.05.2022)

- YERUN, April 2021 Newsletter (link)

- YERUN, Strategic Plan 2021-2025 "Enabling Talent to Grow" (link)

Young European Research Universities