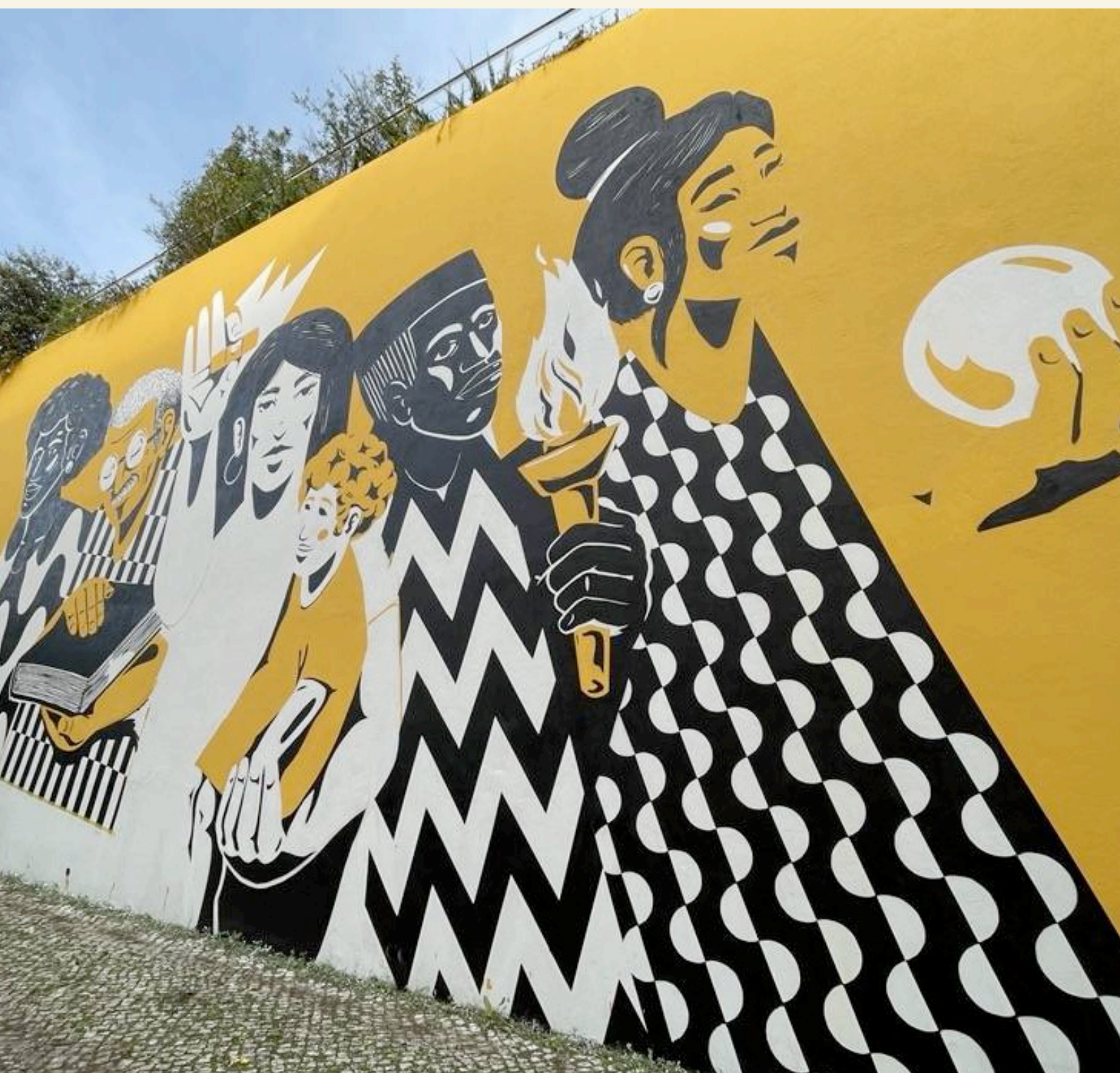


Sustainability at NOVA 2023

Facts and Figures June 2024





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NOVA University Lisbon
Campolide Campus
1099-085 Lisboa – Portugal
Tel.: +351 213 715 600

sustainability@unl.pt
sustainability.unl.pt

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COORDINATION
Julia Seixas
João Loureiro Rodrigues

DESIGN
Carmo Andrade

ILLUSTRATIONS
Madalena Matoso

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NOVA SCHOOLS



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Illustration: Madalena Matoso

A Comprehensive University

NOVA University Lisbon is a public higher education institution, with the mission of serving society at a local, regional and global level. NOVA's motto is to be 'a global and civic university'. NOVA's strategy supporting education, research and value creation is aligned with an international agenda and partners from different continents and is committed to benefitting society, culture and the economy, through innovation and contributions to the emergent challenges of this century.

NOVA is a comprehensive European university, that includes nine schools: science and engineering, social sciences and humanities, medicine, public health, tropical medicine, life science technologies, economics and business, law and data and information science. Despite spanning diverse scientific areas, NOVA schools share a common ambition and goals: advance and disseminate knowledge, promote the understanding of cultures, societies and individuals and

develop excellent research and teaching, with the aim of impacting the community and for the benefit of all.

The NOVA Strategic Plan 2020-2030 adopts Sustainability as a driver to develop solutions to the main challenges to individual, social and institutional development that are economically viable, environmentally friendly and socially fair, so that current and future generations can carry out their projects for a better future, as stated in [NOVA Sustainability Policy \(2021\)](#). There are several initiatives in place in the different schools regarding the implementation of the Agenda 2030 Sustainable Development Goals. At the University level, the goal is to gather and further develop these initiatives and actions to boost NOVA's credentials as a Sustainable University.

NOVA University is part of the European Universities alliance EUTOPIA MORE with a common overall ambition of institutional transformation guided by open, inclusive, and innovative principles.

EUTOPIA MORE takes transformation through Sustainable Development, which is being tackled by a dedicated working group, covering strategic areas as Climate Impact, that NOVA leads, Diversity, equity and Inclusion, Sustainability governance and leadership, Biodiversity, Education for sustainable development, Social innovation and social entrepreneurship, and Cultural sustainability.

Sustainability NOVA 2023 Facts & Figures reports key sustainability-related indicators regarding NOVA's activity and performance in 2023, from governance to education, research and value creation and innovation, as well as infrastructure and services, on environmental and social impacts, covering all schools and Campi. This edition starts a new section with selected cases to highlight how NOVA Schools are addressing the 17 SDGs.

Sustainability at NOVA 2023 Facts & Figures cannot be considered a complete Sustainability Report due to the absence of some key indicators and relevant information that are still under development.





João Sàágua
Rector

At NOVA University, our dedication to fostering academic excellence is inextricably linked with our commitment to contribute to the social, economic and environmental well-being of our planet.

As we pursue our strategic vision of being a global and civic university, we understand that sustainability is a fundamental principle that must permeate all aspects of our operations and activities.

Sustainability is not just a passing concern; it is a pressing imperative and a core value that underpins NOVA's mission. Over the past few years, we have witnessed it becoming increasingly more integrated into our educational programs, research initiatives, campi management, and community engagement. However, we will only succeed in doing so, if we keep an open and productive dialogue with civil society organizations, businesses, and government bodies. This collaborative spirit will enable us to apply our academic and scientific expertise to tackle local and global challenges, while simultaneously learning from the innovative approaches and insights of our partners.

The NOVA Sustainability 2023 Report highlights our steadfast commitment to advancing the United Nations' Sustainable Development Goals (SDGs) and adhering to the principles set forth in the Paris Agreement. It offers a comprehensive overview of our initiatives and achievements in these areas and, more importantly, it showcases NOVA's transition from supporting sustainability initiatives to becoming a proactive agent of change, embedding sustainable practices deeply into its institutional fabric.

There is always room for improvement and areas where we can further enhance our efforts. But based on what we have achieved so far, I believe we can look into the future now with more optimism and confidence. While the challenges we face are still significant, the potential for innovative and positive change is immense.

By continuing to prioritize sustainability, we are not only protecting our planet for future generations but also instilling hope and demonstrating that a sustainable future is within our reach. Our unwavering commitment to this cause will drives us forward, and together, united as an academic community and working with partners from all sectors of society, I am certain we will achieve extraordinary things.

My last words go to each and every member of NOVA Community: thank you for your ongoing support and dedication to sustainability and keep up the good work.



Júlia Seixas
Pro-rector for Sustainability

NOVA's journey to sustainability is becoming a consolidated work with the nine NOVA schools, through the Academic and Operational Councils, which have been proved to be a valuable governance model to manage and advance on sustainability ambition. In 2023 some new aspects deserve to be highlighted. New datasets and indicators have been created, on waste production and recycling allowing to know for the first time how NOVA is performed in this topic, and on commuting mobility of NOVA's community through a wide disseminated survey and focus groups.

In 2023, a new transversal project started named *Route Zero* to take NOVA's carbon footprint, either its direct and indirect emissions, including from its suppliers, and assess how NOVA will be able to achieve a net-zero emissions goal and how it will become a climate resilient organization. This project is the first action towards NOVA commitment to contribute for the Paris Agreement ambition, while takes the climate risk for its activities of education and research to prevent future losses. *Route Zero* is co-funded by Fundo Ambiental (Ministério do Ambiente e Energia) and includes a comprehensive plan to engage and share resources with all Portuguese Higher Education Institutions, along 2024 and 2025.

Also in 2023, the launch of the *SDSN Portugal* must be underlined. NOVA University led a consortium with CEiiA, a Centre of Engineering and Product Development and Instituto Marquês Valle Flor, a foundation for development and cooperation, to start the Portuguese-based network of the UN SDSN (United Nations Sustainable Development Solutions Network). UN SDSN was created in 2012 to mobilize the world's leading academic and research institutes and leverages their strengths to help promote practical solutions to sustainable development challenges and realize the SDGs and the Paris Agreement. Spanning six continents, the SDSN network comprises over 1,900 member institutions, primarily universities, coordinated by 55 National and Regional Networks.

The report *Sustainability at NOVA 2023 Facts & Figures* takes a similar format as previous editions, although with new design. This edition starts a new section to highlight how NOVA Schools are accomplishing the 17 SDGs, the reference framework taken to address sustainability in our organization. This report illustrates the effort of dozens of people from all schools and services who are taken sustainability topics and objectives as part of their mission in the University. Finally, I would like to thank the many people that contributed promptly and effectively to data provision and management, allowing to produce such a rich document that makes us proud of our journey. We are still far from our ambition, but the journey is becoming clearer every year and NOVA is doing bold steps in many aspects to become a Sustainable University.

Indicators 2023 | Overview

EDUCATION

24 687

STUDENTS

37%

Undergraduate and Integrated Master's programs

9%

PhD programs

54%

Master's programs

372

SUSTAINABILITY-RELATED COURSES

31%

Sustainability-focused

69%

Sustainability-inclusive



Most Popular



Worked on in 50+ courses

RESEARCH

2 154

PROFESSORS

561

RESEARCHERS

1 734

SUSTAINABILITY-RELATED SCIENTIFIC PUBLICATIONS

33%

of total NOVA scientific publications



Most Popular



Worked on in 100+ publications

INNOVATION & SOCIETAL IMPACT

57

SUSTAINABILITY-RELATED START-UPS

11

of them are Spin-offs

NOVA impACT! Challenges competition:

31

Applications

↑ 72% Relative to 2022

34

Participants

↓ 33% Relative to 2022

ORGANIZATIONAL SUSTAINABILITY

3 196

FULL TIME EQUIVALENT EMPLOYEES

↑ 7% Relative to 2022

71%

Female Staff

50%

Female Faculty

4 116

PSYCHOLOGY AND PSYCHIATRY APPOINTMENTS

+163

Students involved

1 104 478 EUR

GERAÇÃO NOVA GRANTS
50 650 Eur in 2022

Electricity

18,9

MILLION kWh

↓ 4% Relative to 2022

Water

208

THOUSAND M³

↓ 3% Relative to 2022

Gas

2,2

MILLION kWh

↓ 3% Relative to 2022

Emissions

3 591

TONNE CO₂

(CO₂ emissions estimation of Scope 1 and 2 according to GRI standards)

↓ 30% Relative to 2022

SUSTAINABILITY AT NOVA

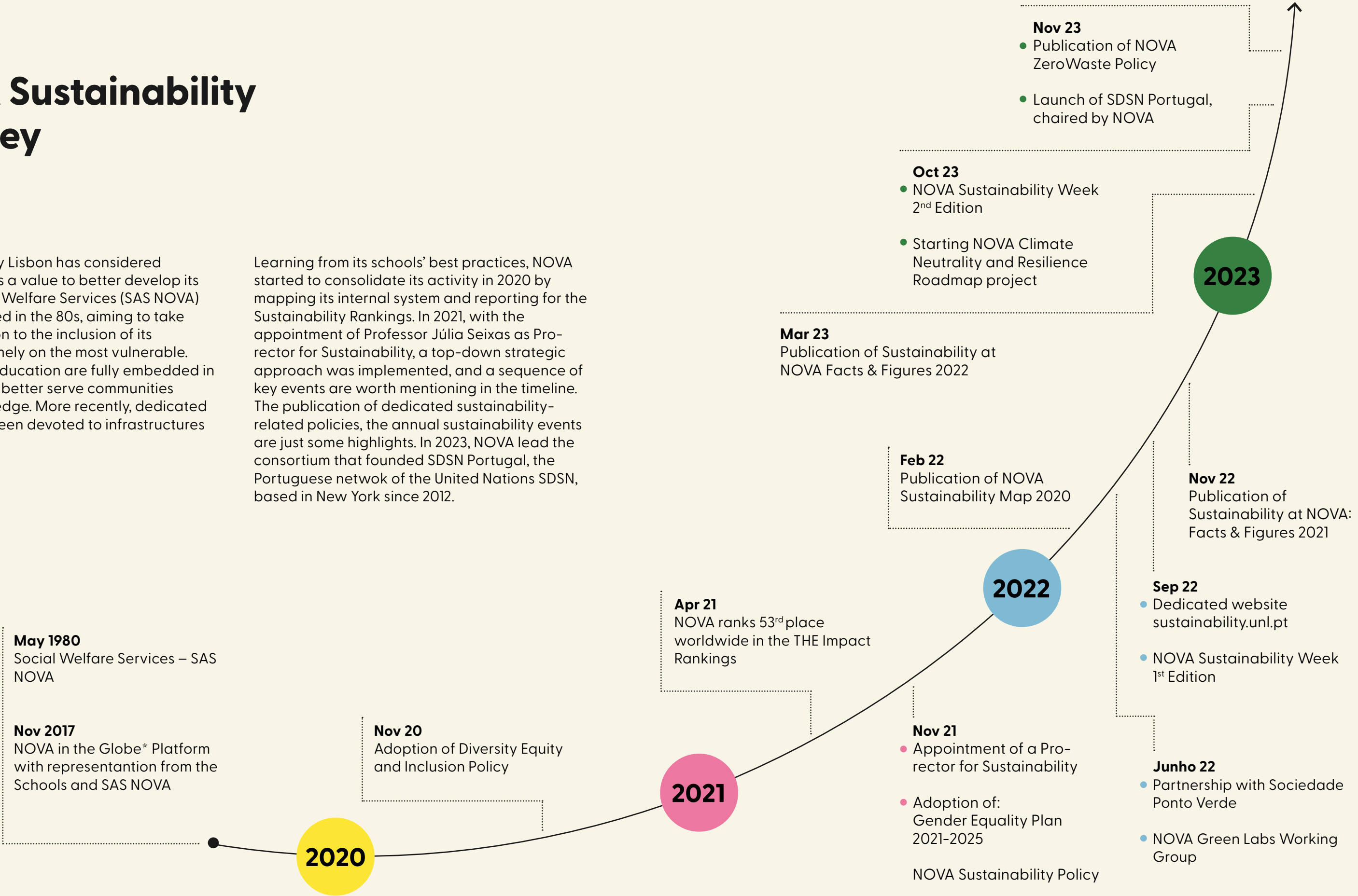


Illustration: Madalena Matoso

NOVA Sustainability Journey

NOVA University Lisbon has considered sustainability as a value to better develop its missions. NOVA Welfare Services (SAS NOVA) were established in the 80s, aiming to take special attention to the inclusion of its community, namely on the most vulnerable. Research and Education are fully embedded in the ambition to better serve communities through knowledge. More recently, dedicated attention has been devoted to infrastructures and services.

Learning from its schools' best practices, NOVA started to consolidate its activity in 2020 by mapping its internal system and reporting for the Sustainability Rankings. In 2021, with the appointment of Professor Júlia Seixas as Pro-rector for Sustainability, a top-down strategic approach was implemented, and a sequence of key events are worth mentioning in the timeline. The publication of dedicated sustainability-related policies, the annual sustainability events are just some highlights. In 2023, NOVA lead the consortium that founded SDSN Portugal, the Portuguese network of the United Nations SDSN, based in New York since 2012.



* In 2019, NOVA in the Globe changes its name to NOVA 4 The Globe, focusing its activities on sustainability

NOVA Campi

8

CAMPUSES

9

SCHOOLS AND
INSTITUTES

4

MUNICIPALITIES
Lisboa, Cascais,
Oeiras and Almada

3

HALLS OF
RESIDENCE

821 066

m² TOTAL AREA

98 549

m² of Ground Floor
Area

494 167

m² of Green Area

287 832

m² of Gross Floor Area

460

Beds for students

- 1 NOVA School of Science and Technology | FCT NOVA
- 2 Nova School of Social Sciences and Humanities | NOVA FCSH
- 3 NOVA School of Business and Economics | NOVA SBE
- 4 NOVA Medical School | NMS
- 5 NOVA School of Law

- 6 NOVA Institute of Hygiene and Tropical Medicine | IHMT NOVA
- 7 NOVA Information Management School | NOVA IMS
- 8 NOVA Institute of Chemical and Biological Technology António Xavier | ITQB NOVA
- 9 NOVA National School of Public Health | ENSP NOVA
- 10 Rectorate

- i Alfredo de Sousa Residence
Campolide Campus
- ii Fraústo da Silva Residence
Caparica Campus
- iii Lumiar Residence
Lumiar Campus



FACTS AND FIGURES



NOVA Campi are diverse and lively precincts, including green areas and multi-purposed buildings encompassing classrooms, laboratories, canteens, offices and sports centres.

CAMPOLIDE CAMPUS



Campolide Campus is home to three Schools - NOVA IMS, NOVA FCSH and NSL, and to Alfredo de Sousa hall of residence. The Campus includes Colégio Almada Negreiros, a former Jesuit school from 1835 to 1910, and the rectorate building, awarded with the Valmor architecture prize in 2002. The Social Welfare Services are also located in this Campus. The campus is easily accessible by public transport. With a green area of 16 907 m², the Campus has pedestrian paths opened to the community.

CARCAVELOS CAMPUS



Also serving as a hub for internal and external community, Carcavelos Campus is the house of NOVA SBE with increasing number of students and visitors populating its modern buildings. Facing the sea, with an area of more than 66 000 m², it has low buildings and large open spaces. In April 2019, Carcavelos Campus won the award for Best Real Estate Project of the Year and Best Collective Equipment at the 21st edition of the Real Estate National Awards.

CAPARICA CAMPUS



Caparica Campus in Almada is home to NOVA FCT. With 27 buildings, including Fraústo da Silva Hall of Residence, a library, minimarkets, a day-care center, and a FabLab, the campus is the largest one, with 592 728 m². It is integrated in the urban tissue and accessible by public transport. NOVA FCT has an area of over 50% dedicated to outdoor spaces, including one pond for wildlife, and sports grounds.

Services available at the NOVA Campi and the three halls of residence provide amenities aiming to create the conditions for a smooth and happy daily life accounting for the very diverse needs of students, professors, researchers, staff and visitors, promoting inclusivity in terms of religion, sexual orientation, ethnicity or any other factor.

JUNQUEIRA CAMPUS



Junqueira Campus is the house of NOVA IHMT, carrying out its education and research activities in a building dating back to 1902. It is a robust, large building with wide walls lined with marble panels. Due to its privileged location, it has excellent sun exposure and a large area of gardens and forest, allowing its community to enjoy outdoor walks. IHMT is well served by public transport. The school's contribution to cooperation for health development in the PALOP countries (Portuguese-speaking African Countries) and East Timor has been recognised by the World Health Organisation as a collaborating center for Health Workforce Policy and Planning.



OEIRAS CAMPUS



Oeiras Campus hosts NOVA ITQB within National Agronomy Station campus with beautiful surroundings, including the vineyards of Carcavelos wine. The community benefits from all this green space, and students and faculty can be found strolling (or jogging) throughout the whole campus. The main building is set on a built space with 1 250 m².

SANTANA CAMPUS



Santana Campus is the NMS main Campus. Located at the top of Santana Hill in Lisbon, it includes the historical qualified headquarters' building from a 19th century design project by architect José Maria Nepomuceno. Two modern research buildings and the library completes the campus dedicated to medicine. NMS was the first faculty in Portugal recognized as an Eco-School and is awarded with the Green Flag since 2015.

AVENIDA DE BERNAL CAMPUS



Located in Lisbon, Avenida de Bernal Campus is home to NOVA FCSH's estate dating back to 1978. The Campus has a gross floor area of 24 892 m². FCSH is distinguished as an Eco-School and has been awarded with the Green Flag since 2018.

LUMIAR CAMPUS



Lumiar Campus in Lisbon hosts NOVA ENSP, part of the National Health Institute Dr. Ricardo Jorge facilities. The initial building project was developed by the architect António Pardal Monteiro and was completed in 1972, later extended in 1985. ENSP has been leading public health training for more than 50 years. World Health Organization (WHO) has designated the National School of Public Health as a WHO Collaborating Centre for Education, Research and Evaluation of Safety and Quality in Healthcare.

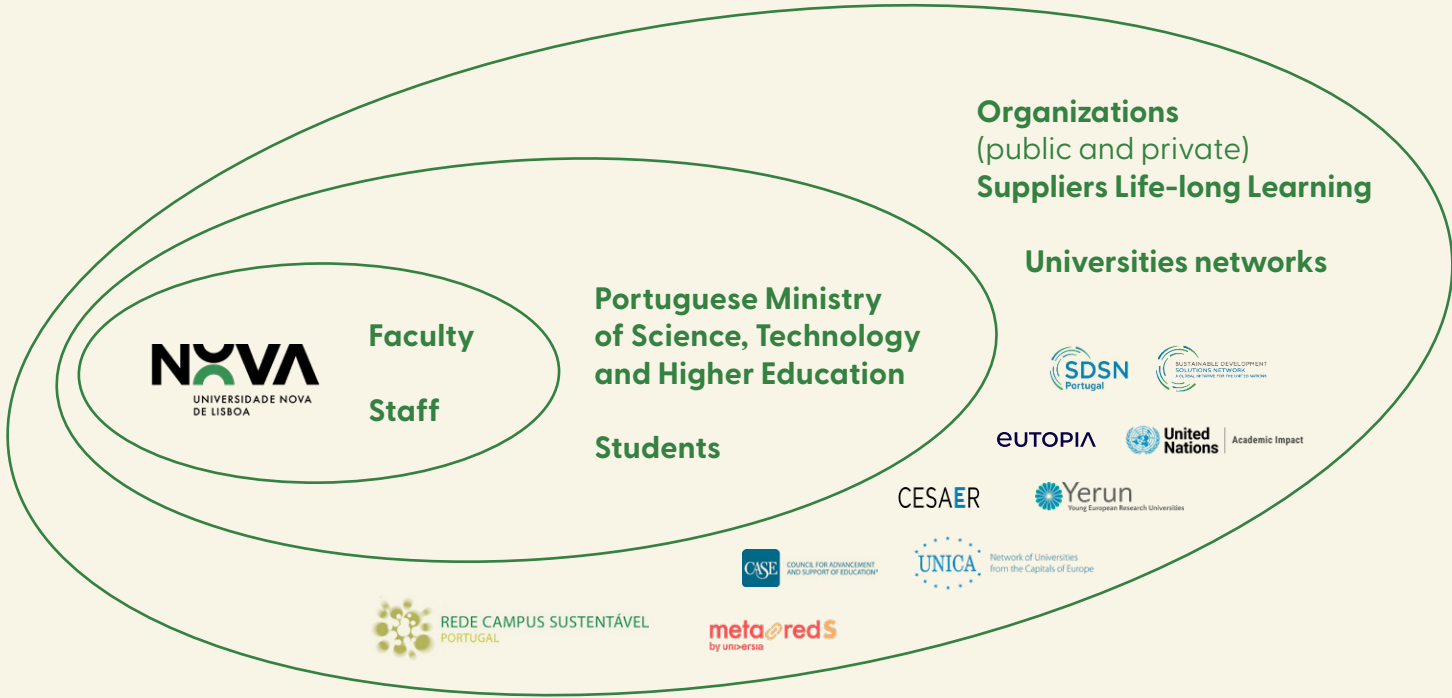
- Hall of Residency
- Heritage
- Bicycle and scooter friendly

- Open to the Community 24/7
- Clinic
- Daycare

- Shuttle
- Eco Campus
- Green Areas

NOVA Community in a snapshot

NOVA Community (“Comunidade NOVA”) includes students, professors, researchers and staff, as well as alumni, partner organizations and suppliers, national or international, working together to foster effective impacts in society, through an open-minded culture of cooperation and innovation.



29 740*
CAMPI POPULATION

2 715
FACULTY¹

2 154
Professors
561
Researchers

1 385
STAFF

24 687
STUDENTS²

Both national and international

9 128
Undergraduate and Integrated Masters' (37%)

13 224
Master (54%)

2 335
PhD (9%)

615
LIFE-LONG LEARNING STUDENTS

5 315
International Students (22% from degrees equivalent programmes and Life-long Learning)

121
Nationalities



*Includes Faculty and Staff, Students, and Researchers without contract with NOVA.

¹ Headcount, including professors and researchers.
² Degree equivalent programmes.



Sustainability is integrated at the highest level of NOVA’s governance model, as pointed by the rector in NOVA’s Strategic Plan 2020-2030 and legitimized by a Sustainability Policy published in November 2021. The Pro-rector is fully dedicated to sustainability matters, by igniting, facilitating and developing multiple initiatives and projects, through several teams and working groups, covering different topics. Mostly, action programmes are along with the transformation of the University towards high sustainability standards, as well as with the annual reporting on sustainability and the application to international sustainability-related rankings.

Schools are engaged to NOVA collective journey through the **NOVA for the Globe strategic platform**, joining representatives from all NOVA Schools. This platform is organized around two councils: the academic and the operational councils. Both councils share a common ambition: to transform NOVA into a sustainable university. In 2023, the representatives in the academic council were renovated by the Schools’ deans.



Illustration: Madalena Matoso

ACADEMIC COUNCIL

Including Professors from all nine NOVA Schools, plus a students’ representative, the Academic Council focuses its activity primarily on NOVA’s missions, in the intersection with sustainability. Regarding Education, the council aims to boost, develop and expand education for sustainability, translating into interdisciplinary collaborative projects between the academia of the various schools. Regarding Research, the council aims at creating conditions and incentives to expand the research carried out at NOVA with direct impact on the SDGs, the Paris Agreement, and European Green Deal. On Value Creation and Impact, the goal is to promote innovation with impact, disseminating its value through narratives and indicators (impact narratives are an exemplary case), fostering innovation and knowledge transfer.

Carlos Chastre – NOVA FCT
Graham Miller – NOVA SBE
Ana Santos Pinto – NOVA FCSH
Paulo Coelho - NMS
Claire Bright – NSL
Isabel Maurício – IHMT NOVA
Marco Painho – NOVA IMS
Nélson Saibo – ITQB NOVA
Teresa Magalhães – ENSP NOVA
Students' Representative

OPERATIONAL COUNCIL

Including staff from the different schools, from SAS NOVA and the rectory, plus a students’ representative, the operational council takes institutional practices and activities aiming to reduce environmental impacts, and the promotion of an agenda that impacts the social and economic dimension of the University’s community. Academic and Operational councils are chaired by the pro-Rector for Sustainability.

Marco Lopes – NOVA FCT
Luís V. Martins – NOVA SBE
Catarina Bernardo – NOVA FCSH
Manuel Salvador - NMS
Jorge Correia – NSL
Paula Pacheco – IHMT NOVA
Sara Ribeiro – NOVA IMS
Paula Chicau – ITQB NOVA
Vitória Ferreira – ENSP NOVA
José Malcato - SAS NOVA
Patrícia Ferreira - Rectory
Sudents' Representative

Other sustainability topics have dedicated governance systems. Equality and Inclusion is addressed by the Vice-rector for Quality Management, Accreditation, and Employability, Professor Isabel Nunes, who is responsible for supporting and implementing the plan and practices for Gender Equality in academia and research. Socio-territorial innovation, addressed by the Pro-rector Professor João Seixas, takes the students’ housing problem in hand, namely for those who live far from the Lisbon area, among other issues.

Also worth highlighting, NOVA Social Welfare Services (SAS NOVA) develop activities towards assuring equal opportunities and the well-being of students, providing access to scholarships, food, accommodation and health (physical and mental), as well as encouraging and promoting participation in cultural activities, sports and volunteering initiatives.

Two working groups were settled to deal with specific topics, due to its complexity and requirements: waste management and sustainability in wet laboratories.



NOVA GreenLabs Sustainability in Laboratories

The activity of the NOVA GreenLabs working group was deepened in 2023, with professors and researchers from the four schools that have 'wet' laboratories on their campuses (FCT, NMS, ITQB and IHMT). A plan began to be developed to adopt good practices with a view to its international certification as Green Labs. In February, a “Sustainable Laboratories” webinar was held for the NOVA community.

[READ MORE](#)



NOVA FCT | Rita Sobral, Luisa Pinto Ferreira, Eduardo Mateus, Inês Coutinho and Andreia Ruivo, Alexandra Gonçalves
NMS | Ana Faria, Catarina Martins, Manuela Correia
ITQB | Carina Valente
IHMT | Pedro Cravo

NOVA Zero Waste Waste Management

NOVA Zero Waste' group was established in 2022 with the goal to leverage data and management practices in all Campus and schools. In 2023, a campaign started following a common protocol to map and monitor the NOVA waste ecosystem - what types and how much waste is produced, what waste collecting systems are in place, and what actors intervene along the process. NOVA follows the guiding principles for waste management decisions and actions, and the waste hierarchy defined in the EU Waste Framework Directive

(Directive 2008/98/EC), in order of priority: Prevention, Preparation for reuse, Recycling, Other types of valuation, Elimination. The ambition is to evolve towards the concept of Zero Waste: “The conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.” (Zero Waste International Alliance, 2018).



A protocol with Sociedade Ponto Verde (SPV), signed in June 2022, has been very successful to support training and advice on waste best practices as well as equipment supply.

NOVA FCT | Claudia Saque e Marco Lopes
IHMT | Dinora Lopes
ENSP | Flavia Casini
ITQB | Helena Matias e Paula Chicau
SAS | Jose Malcato
NOVA SBE | Marta Sousa
NSL | Miguel Ferrari
Reitoria | Patricia J. Ferreira
NOVA IMS | Raquel Antunes
NMS | Rogério Marchante
NOVA FCSH | Telma Inácio

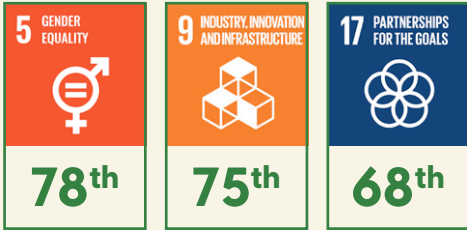
Sustainability Rankings



TIMES HIGHER EDUCATION | IMPACT RANKINGS

[See Overall Rankings →](#)

NOVA University annually assesses its performance on specific aspects of sustainability, by submitting information on selected SDGs within the framework of Times Higher Education (THE) Impact Rankings. The 2024 Impact Rankings report 2022 (last publication available) data and include 1 963 universities from multiple countries/regions. NOVA University Lisbon ranks between the 101-200 universities worldwide. Among these, NOVA stands out in the following positions in the respective Sustainable Development Goals (SDGs):



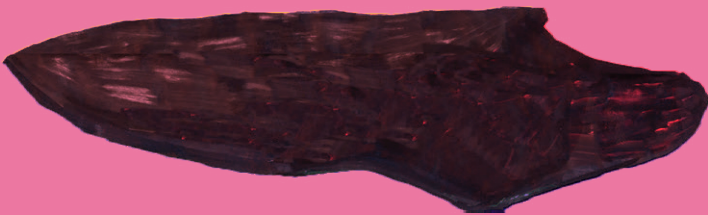
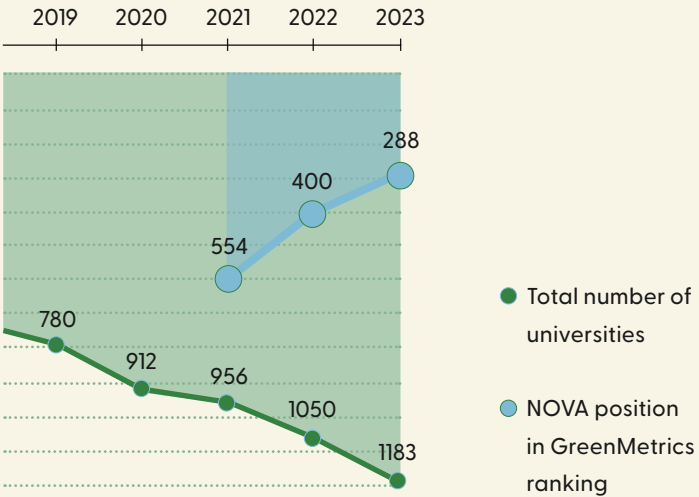
GREENMETRIC

[See Overall Rankings →](#)

For the third consecutive year, NOVA applied to the GreenMetric Ranking, consolidating its upward trajectory. In 2023 (last publication available), with data relating to the calendar year 2022, NOVA is ranked in position 288, among 1183 Universities, a significant increase compared to position 400 (among 1050 Universities) obtained in 2022.

The 9th International Workshop on UI GreenMetric (IWGM 2023) was held at Minho University, on 15-17 June 2023, and NOVA was proud to be selected to make a presentation on its *Whole-Institution Approach Towards Sustainability*, with a focus on engagement schemes.

[READ MORE](#)



Events

NOVA Sustainability Days 2023

NOVA Sustainability Days in 2023 was dedicated to NOVA partners, claiming for SDG17 as key to advance on R&D and on societal impact.



NOVA Sustainability days were held in 16 and 17 October. The first day featured webinars covering various topics, as organizational transformation for sustainable development, co-organized with EUTOPIA, NOVA initiatives for a sustainable university, the role of students in promoting sustainability at NOVA, research with impact on sustainability and integrating sustainability into education programs. The second day, a in-person event was dedicated to

partnerships, with examples such as Campus Sul, a collaboration with universities at southern Portugal, as well as examples from NOVA nine schools, in the words of the partner institutions (i.e. companies, public bodies) highlighting fruitful collaborations. The day closed with two intergenerational debates, with the involvement of students, focused on just climate transition and housing. These debates were covered by RTP, the public broadcasting television.

[READ MORE](#)

Networks

NOVA University Lisbon participates actively in several sustainability-related networks, either in Portugal and worldwide, reflecting NOVA ambition to affirm its commitment with sustainable development , by sharing and learning best practices.



RCS – SUSTAINABLE CAMPUS NETWORK

The Sustainable Campus Network is a cooperation network of people from national higher education institutions (HEIs) in Portugal for the implementation of the principles and practice of sustainable development in the environmental, social and economic aspects. NOVA University Lisbon is part of RCS since 2018.



UNITED NATIONS ACADEMIC IMPACT (UNAI)

In January 2023, NOVA University Lisbon has been recognized as a member of the United Nations Academic Impact (UNAI), joining a group of over 1600 institutions from more than 152 countries that are working with the United Nations to promote global priorities such as peace, human rights and sustainable development. Among the different events NOVA reported in 2023, NOVA Sustainability Days was particularly relevant. NOVA Schools also organized events in the context of the United Nations Academic Impact, such as the Estoril Conferences, organized by NOVA SBE and NMS.

[READ MORE](#)



SDSN PORTUGAL

Created in 2023, on the initiative of NOVA, CEiiA, and Instituto Marquês de Valle Flor, SDSN Portugal aims to mobilize universities, research centers and other knowledge networks, civil society organizations and companies to create synergies for the promotion of transformative solutions to accelerate the implementation of the 2030 Agenda SDG and the Paris Agreement goal. In 2023, it is worth mentioning the public launch event on November 2nd at the CEiiA facilities in Matosinhos, which was attended by the vice president of SDSN Global, Maria Cortes-Puch. SDSN Portugal is the national network of the UN Sustainable Development Solutions Network (SDSN) that works under the auspices of the UN Secretary-General and is chaired by Prof. Jeffrey Sachs from Columbia University.

[READ MORE](#)



EUTOPIA MORE – SUSTAINABILITY OFFICERS NETWORK (SON)

NOVA participates actively in the sustainability officers’ network of EUTOPIA MORE alliance, which join 10 European universities, through regular online meetings. In 19-23 June 2023, EUTOPIA week in Lisbon took place at NOVA, and two dedicated meetings allowed the substituir por Sustainability Officers Network members to discuss in depth possibilities of collaboration and projects in specific areas, like Climate Impact, that NOVA leads, but also on biodiversity, integrating sustainable development into education, and inclusion and equity.



METARED S – NETWORK OF SUSTAINABLE AND SOCIAL RESPONSIBILITY UNIVERSITY NETWORKS

MetaRed S is present in several Ibero-American countries, promoted by Universia and Santander Universities. MetaRed S involves the management of the positive and negative impacts produced by the university community, and the expectations and needs of the interest groups as established by the principles of Corporate Social Responsibility, adapted and applied to the educational field. NOVA University joins MetaRedS in 2023, being the Rector, Prof. João Sàágua the president and the Pro-rector Prof. Júlia Seixas, the executive secretary. During 2023, efforts have been devoted to exploring how to settle MetaRedS in Portugal, namely in association with RCS (Rede Campus Sustentável), which joins the majority of Portuguese Higher Education Institutions, in order to work in synergy and avoid duplication.

Sustainability in

- Research
- ✓ Education
- Innovation and Societal Impact



Research

“NOVA is deeply committed to tackle the complex challenges posed by sustainability, by promoting research aligned with UN SDGs and developing cross-disciplinary programs.”

ISABEL ROCHA
Vice-rector for Research, Innovation and Value creation

Research at NOVA is increasingly motivated to solve complex problems of sustainable development, across different disciplines and scientific domains. NOVA research community has aligned its agendas with sustainability challenges, be they technological, social or economic, in line with international trends and the scope of European missions.

Taking the lead in research contributing to the SDGs, NOVA creates momentum to raise awareness and capacity building, while inspiring others to contribute to the development of a more inclusive and sustainable society. Following the 2022 indicators, in 2023 NOVA increased the research outputs addressing all the SDGs, through co-authorship with many colleagues outside NOVA.

5 284

TOTAL PUBLICATIONS

15 708

AUTHORS

50%

With international collaboration

SDGs ADDRESSED BY PUBLICATIONS

1 734

33%

PUBLICATIONS ADDRESSING SDGs

7 932

50%

AUTHORS ADDRESSING SDGs

In 2023, NOVA published 1 734 publications contributing directly to different SDGs, accounting for 33% of total publications (32% in 2022), according to the Elsevier Sustainable Development Goals Mapping algorithm³.

The Factor Weighted Citation Impact, which reflects the impact of NOVA publications compared to the international average, of the total publications classified as SDG is 1.39. Publications with an impact higher than this value include: SDG3 - Good Health and Well-being (3.84), SDG 9 - Industry, innovation and infrastructure (2.16), SDG 12 - Responsible Consumption and Production (2.21), SDG 13 - Climate Action (1.90), and SDG 15 - Life on Land (1.79).

Did You Know?

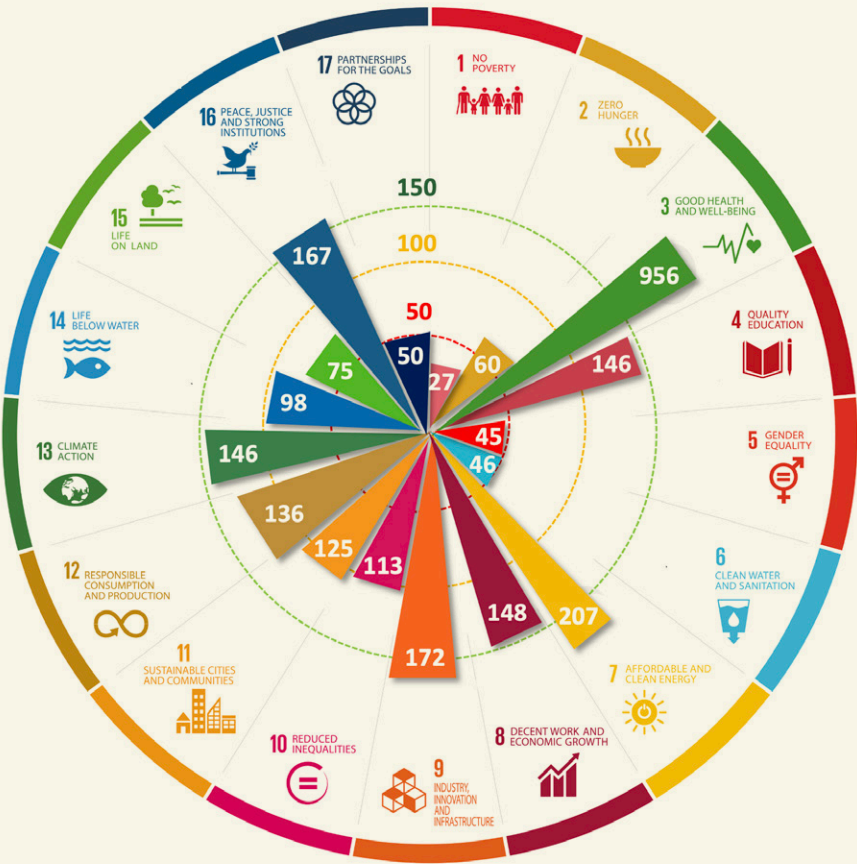
39%

Impact above world average of all the publications classified by SDG and indexed in Scopus (normalized citations per scientific area)

The graphic* shows the number of mentions of each SDG in the 1734 publications, meaning in some cases one publication may address more than one SDG. NOVA research delivers on all SDGs, with SDG 3, SDG7 and SDG9 at the top. A significant number of authors address the different SDG, namely SDG 3 (5 824), SDG 7 (784), SDG 9 (734), and SDG 13 (768). The publications consider a wide range of research interests from social science to health and STEM areas across all the SDGs.

*Note: the total research publications' distribution is approximate.

³<https://elsevier.digitalcommonsdata.com/datasets/6bjy52jkm9>



HIGHLIGHT!

Research Impact Narratives Challenge

Launched in 2023, the initiative invites professors and researchers affiliated with any of NOVA University's Schools to translate the impact of their research projects through engaging narratives, as research and innovation funding agencies are increasingly emphasizing the need to measure research impact. The Impact Narratives Challenge emerged as a must to equip NOVA's researchers with the skills and motivation to communicate the impact of their research in a language accessible to all. The Challenge received 31 applications from

eight schools, with a total of 224 faculty members and researchers involved in the research endeavours. The most represented narratives came from Social Sciences, followed by Engineering and Technology, and Medical Sciences. The jury distinguished six winners and five honourable mentions in the 1st edition of the Challenge, announced at the NOVA Science and Innovation Day. All distinguished narratives are published in detail in the magazine [NOVA Science 2023](#).

[READ MORE](#)

HIGHLIGHT!

NOVA Interdisciplinary Research Community on Sustainable Energy Systems

NOVA has launched its first Interdisciplinary Research Community (NIRC), under the topic of Sustainable Energy Systems, recognizing that interdisciplinary research can help Universities to foster collaboration, drive innovation, and address complex societal problems. Supported by Galp, NIRC brings together researchers from a wide range of disciplines, including environment, engineering and technology, law, social sciences, economy, and data management, to collaborate on research projects aimed at addressing the complex

challenges posed by Sustainable Energy Systems. So far, the community has almost 50 active members who have been participating in the different workshops and activities. A recent call for applications for the *Interdisciplinary Energy Research & Innovation Initiative* was launched, to provide funding to help the transformation of the best ideas from the community into ambitious projects, contributing to the transition to a greener and more sustainable economy.

[READ MORE](#)

Education

“NOVA University emphasizes the critical role of education in promoting sustainability, recognizing that students are future professionals and hopefully active members in societal development. Across various fields like

engineering, health, social sciences, and business, connections to sustainability are abundant and varied. It is essential for students to understand these connections to effectively address sustainability challenges.”

JOÃO AMARO DE MATOS
Vice-rector for Education and International Development

The nine schools of NOVA University Lisbon offer more than 270 undergraduate, masters and PhD programmes, structured into almost 4000 courses. In 2023, approximately 64% of NOVA students graduated in Arts & Humanities and Social Sciences, followed by STEM (24%) and Health (12%)⁴. In addition, NOVA offers life-long learning programmes.

GRADUATE STUDENTS	INTERNATIONAL STUDENTS
6 404	1 402 ^{22%}

NOVA FOUNDATION PROGRAMME – SUPERNOVA

In 2022, SUPERNOVA plans to expand/ed to Europe, giving students who complete this program the opportunity to enter European universities of excellence, namely: IE University, Ca’ Foscari University of Venice, Lancaster University and CY Cergy Paris University. For those who speak Portuguese, Algarve University is also a new opportunity for new partnerships. Outside Europe, NOVA Cairo is also an option. There were 57 students in the February edition, with the top 3 comprising the following nationalities: Brazil, Angola and Pakistan. The September 2021 semester had 48 students, with Brazil and Angola remaining in the top 3 nationalities, followed by Ukraine and Russia. The entry of these countries is related to the situation of war in which these countries find themselves.

STUDENTS February	STUDENTS September
57	48
Top Nationalities:	Top Nationalities:
Brazil Angola Pakistan	Brazil Angola Ukraine Russia

PhD STUDENTS	FACULTY INVOLVED ⁵
386	33
Since 1 st Edition	Since 1 st Edition
4 842	1 186

NOVA DOCTORAL SCHOOL

The NOVA Doctoral School offers transversal training courses for NOVA PhD students and PhD holders working at NOVA (Researchers and Professors). The courses are voluntary, free of charge, and require prior registration on the NOVA Doctoral School platform. Since the pandemic, most courses have been offered online, with some face-to-face editions starting again this year. From 2013, until the end of 2023, 232 editions of the courses have been held, with a total of 4 842 participations. In 2023, NOVA Pedagogical Innovation, together with NOVA Doctoral School, provided pedagogical development, supervision and transferable skills training.

⁴ RAIDES (2024)
⁵ Source: Professors’ Development Report

SDG ADDRESSED BY COURSES

382 10%

COURSES ADDRESSING SDGs

NOVA’s education programmes offer 382 courses where at least one SDG is addressed, representing 10% of the total courses offered. Most of the courses are part of the masters’ curricula. These indicators were updated by the course coordinators in all schools, via the Council for Teaching and Learning.



Most popular



Worked on in 50+ courses

117 31%

Sustainability-focused

The course title or description must indicate a primary and explicit focus on sustainability, i.e. on the interdependence of ecological and social/ economic systems or a major sustainability challenge such as climate change, according to STARS⁶.



Most reported

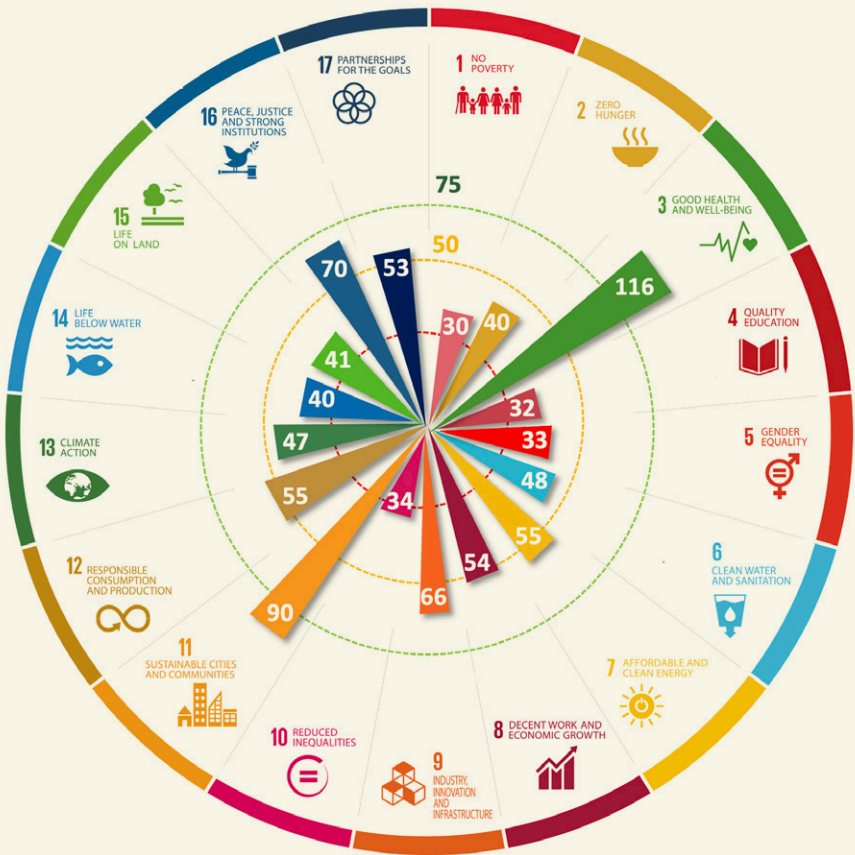
265 69%

Sustainability-inclusive

The course title and description do not unequivocally indicate that focus, but it is evident from the course description or syllabus that it incorporates sustainability challenges, issues, and concepts in a prominent way⁶.



Most reported



The graphic* shows the number of mentions of each SDG in the 382 courses, where one course may address more than one SDG. Although all the SDGs are addressed, SDG3 and SDG11 are the most popular. SDG7, SDG8, SDG9, SDG12, SDG16 and SDG17 are reported as addressed in more than 50 courses each. Looking at the 117 sustainability-focused courses, most are integrated in programmes on environment and sustainability, SDG11 and SDG7 are the most reported. The 265 sustainability-inclusive courses report mostly SDG3 and SDG16.

*Note: the graphical distribution of the courses per SDG is approximate.

HIGHLIGHT!

OCEAN Challenges Connected Community

Embebed in the EUTOPIA Alliance, NOVA lead the OCEAN Challenges Connected Community, including also Gothenburg University and Ca' Foscari University of Venice. It aims to respond to key societal challenges, such as claiming the Ocean as a solution to climate change and biodiversity loss (nexus ocean/climate/ biodiversity).

[READ MORE](#)



⁶ STARS stands for The Sustainability Tracking, Assessment & Rating System, a programme of the Association for the Advancement of Sustainability in Higher Education.

Innovation and Societal Impact

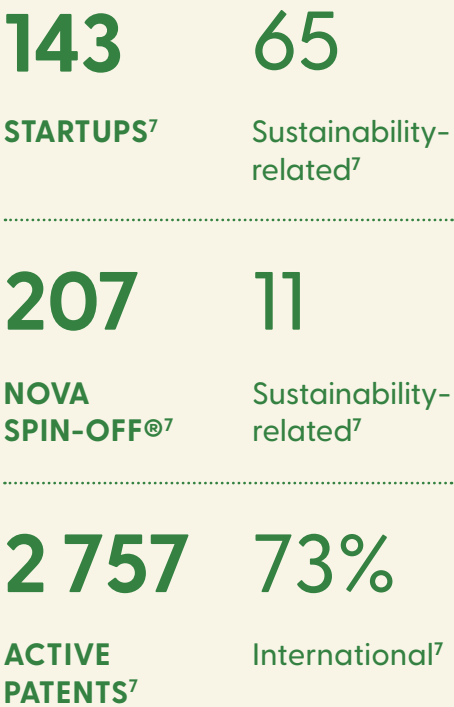


“NOVA’s third mission results are a reflection of a thriving community of faculty, researchers, students and staff with close interactions with industry and society in general. We are proud that a significant and growing number of our entrepreneurial projects directly address sustainability challenges, as a result of a strong incorporation of SDGs in our research and of our targeted programs.”

ISABEL ROCHA
Vice-rector for Research, Innovation and Value creation

The NOVA community has been increasingly responsive to societal and economic demands for expertise and knowledge in the various SDG domains. NOVA is proud to deliver and transfer knowledge and tools which feed into social and economic values. Several activities have been carried out across NOVA schools to promote entrepreneurship and innovation with social and environmental impact: (i) train

students in entrepreneurship, providing them with the mindset and tools to turn ideas into projects with impact; (ii) support new spin-off companies with services allowing them to grow and promote highly qualified jobs; (iii) foster knowledge-based and high-impact innovation through the valorisation of technologies and specialized knowledge, namely in liaison with industry and social organizations.



⁷ Accumulated values. The first start-up mapped was founded in 1996. NOVA's Spin-off [®] trademark started in 2018. The first patent was registered in 2005



ENTREPRENEURSHIP PROGRAMMES:

NOVA impACT! Challenges

NOVA impACT! Challenges, a partnership with Santander Universidades had its 3rd edition in 2023, gathering students from multiple Higher Education Institutions. The program ran for 3 weeks (26th Jun. – 15th Jul.), with teams having access to a budget line of 500€ each, workshops, specialized mentoring, and other resources to develop a proof of concept/ prototype. Solutions ranged from the development of innovative recycling gamification solutions, to risk assessment solutions for people with dementia and a geolocation platform for journalists. The winning team was awarded 2 000€ to continue developing the solution further.

[READ MORE](#)

HONORABLE MENTIONS

Apregoar

Knowing where things happen is essential for individuals and organizations to make informed decisions. Apregoar aims to equip people with localized information to better engage with and on behalf of their communities. The platform enables journalists (and other creators of public service content) to easily define the schedules and locations of events covered in their articles. Apregoar structures and saves these "geo news" through white-labelled products, allowing newsrooms to provide better context and relevance to their readers, along with back-office panels to assist them in managing and planning their own content effectively.

Students involved: Caroline Wentling



WINNER

Trash4Goods

Trash4Goods is a gamification platform that rewards users for recycling their electronic waste, empowering them to play a more active role in the circular economy.

Students involved: Afonso Ravasco **10**

Mindc@re

With the global increase in the number of people with dementia, MindC@re offers a digitally certified health platform that serves as a risk assessment solution for dementia. It combines data from two digital solutions: MindC@lc and MindBr@ce. The target users are family members, caregivers, friends, and helpers of individuals aged 50 and above.

Students involved: Célia Veríssimo, Margarida Pereira, Raquel Rosado e Silva

NOVA Empreneurship Academy

NOVA *Academia de Empreendedorismo* (NOVA Entrepreneurship Academy) is a MOOC (Massive Online Open Course) that seeks to democratize access to knowledge for all interested parties and is available, in Portuguese, through the NAU platform of the National Science and Technology Foundation (FCT, I.P.). The course is taught by professors from different NOVA schools, structured in six modules, from basic concepts to entrepreneurship tools and best practices and invite entrepreneurship and start-up founders to share their experiences. Each lesson lasts between five and ten minutes, for a total of eighteen lessons.

It's a free, short course, to be taken at each participant's own pace and aimed not only at university students, but also at anyone who wants to learn more how to manage their own professional projects. NOVA *Academia de Empreendedorismo* promotes long-life learning opportunities for all, aligned with SDG4.

In 2023, the 2nd edition had a high demand, placing it once again at the top of courses searched for and completed on the NAU platform. In just two months (November to December 2023), more than 3 300 people signed up, with registrations from various countries, and around 1 000 certificates of completion were issued (with the attribution of 1 ECTS). This figure is about three times higher than the international average for this type of course.

[READ MORE](#)

3 000+ REGISTRATIONS

970 COMPLETIONS

90+ NOVA STUDENTS

Circular InNOVA(tion)

Circular InNOVA(tion) is an Ideation and Entrepreneurship programme designed together with Sociedade Ponto Verde® aimed to respond to specific environmental and packaging waste-management challenges faced by this entity. The program was designed to generate innovative solutions to tackle the following challenges:

“How to create a fair pay as you throw system?”; “How to create an on-demand waste management system?”; “How to encourage society to reduce the amount of waste but also separate more and better?”

The teams participated in an ideation bootcamp and afterwards the selected ones would continue the program MVP phase (Minimum Viable Product). In this phase, each team received 1000€ for prototyping and in the end, one winner was awarded plus 5 000€ (in a pay for results system) to continue to develop the project further.

[READ MORE](#)

62+ REGISTRATIONS

5 TEAMS SELECTED

16+ STUDENTS

WINNER

Resíduos na Linha

The idea developed along a pay as you throw system that combines the measurement of weight and volume in the trash collectors. Using an RFID system, it will allow the clients using the system to monitor the amount of garbage disposed.

Students involved: Pedro Guerreiro, Tomás Silva, Diogo Sequeira, Gonçalo Marujo, Pedro Copeto, Duarte Riscado.

HIGHLIGHT!

Innovative Health Solutions for All

According to World Health Organization, about 1 in 5 people develop cancer in their lifetime, approximately 1 in 9 men and 1 in 12 women die from the disease, making cancer is a global burden. Access to innovative solutions to tackle the disease is a priority, putting R&D in the field in the spotlight. NOVA FCT researcher Paula Videira, with contributions from IHMT, have dedicated efforts from years through the company CellmAbs, a NOVA Spin-off®, creating monoclonal antibodies ('mAbs') specific to cancer cells, without affecting healthy cells, represents a fundamental advance, as it allows treatments that attack the disease more effectively and

with fewer side effects, as well as being personalised, i.e., adapted to the individual characteristics of the cancer in each patient. In 2023, a major step was taken to bring this research to the market. The agreement between BioNTech SE® and Portuguese biotech company CellmAbs, a NOVA Spin-off®, includes patented technology that originated at the NOVA FCT, developed in collaboration with the Portuguese Institute of Oncology of Porto (IPO Porto) and the Helmholtz-Zentrum Dresden-Rossendorf (HZDR) in Germany. This is a success story in the field of technology transfer and value creation, NOVA is proud of, to take benefits for all.

Infrastructures and Services

Environmental Impact

Social Impact

NOVA University Lisbon is committed to its organizational transformation towards sustainability, aligning with the Sustainable Development Goals and the Paris Agreement ambition.

The sustainability performance of NOVA is based on the principle of leading by example. Selected environmental and social indicators highlight how NOVA has been taking responsibility for its own impact on sustainability.



Environmental Impact

NOVA is a large university with diverse infrastructures, various services and a vibrant multinational community. This provides the opportunity to adopt solutions and changes throughout its services and infrastructures management. The strategies employed to shape the community’s collective behaviour towards more sustainable patterns focus on material topics for the university, such as water and energy use, waste disposal and commuting options.

NOVA schools are developing several initiatives and projects to minimize resource use while improving service provision.

HIGHLIGHT!

Biodiversity

Reducing water consumption on NOVA's campuses is key, namely for irrigation. The Heritage and Infrastructure Division (DPI), in collaboration with NOVA sustainability team, converted a grassy part of its garden on Campolide Campus into a pollinators garden. These gardens feature a variety of plants (e.g., annuals, perennials, shrubs and bushes), attracting and supporting pollinators like bees and birds. Polinators gardens benefit the entire ecosystem while creating a beautiful landscape. This one in particular is near to one of the green corridors of Lisbon, expanding the benefits of the city ecological network.



HIGHLIGHT!

Green public procurement at NOVA

NOVA is building on expertise to develop a plan on green procurement procedures, impacts achieved and reporting practices. More than 40 people, from administrators, heads of procurement departments and staff from all NOVA Schools met in March, with experts, including from Portuguese Environmental Agency and NOVA FCT, to explore the adoption of ecological criteria in procurement, in line with the National Strategy for Ecological Public Procurement 2030 - ECO360.

[READ MORE](#)

Energy and CO₂ emissions

In 2023, NOVA continued to consolidate datasets on energy consumption and related CO₂ emissions, improving its accuracy under a continuous improvement process⁸.

Global indicators for NOVA University in 2023 regarding energy consumption show a downward trend:

- Electricity consumption was 18,9 million kWh in 2023, including 2,2% of domestic production at FCT and SBE campuses, which represents a decrease of 14% compared with 2019, and a decrease of 4% compared with 2022 (Figure 1).
- Gas consumption was 2,2 million kWh, including natural gas and LPG (i.e. propane and butane), which represents a decrease of 22% in comparison with 2019, and 3% with 2022 (Figure 2). The consumption of natural gas represents 65% of the total gas consumed, being LPG consumed only in the FCT campus (i.e. hall of residence and canteen).

Consumption of oil products are not significant within the NOVA total energy consumption, and remain similar to 2019, with 3 390 L of gasoline and 7 995 L of diesel used for domestic fleet.

The estimated CO₂ emissions – Scope 1 and 2, according to GRI standards, related to energy consumption, totals 3 591 t CO₂ in 2023, being 90% from electricity consumption. This number represents a decrease of 48% when compared with 2019 and of 30% compared with 2022 (Figure 3). The emissions of electricity consumption were calculated following the market-based method, based on emission factors from the NOVA power supply companies. CO₂ emission factors for gas and oil products are from the National Inventory Report (APA, 2022).

The significant CO₂ emissions downward trend is related with the electricity consumption and is due to two main reasons: the reduction in electricity consumption (14% compared with 2019 and 4% with 2022), and the decarbonization of the Portuguese electricity production system, with the closure of the coal power plants (in 2021 and 2023), and the increase of the renewables production (61% in 2023; 57% in 2022). On average, in comparison to 2019, the carbon intensity of the electricity purchased from the grid in 2023 decreased 40%.

ENERGY AND CO2 EMISSIONS AT NOVA

Electricity usage:



18,9

MILLION kWh

Acquired from the grid:

18,4

MILLION kWh

Own production:

409 532

kWh (2,2%)

Gas consumption:



2,2

MILLION kWh

School's fleet:

3 390

L Gasoline consumption

7 995

L Diesel consumption

CO₂ emissions energy-related:



3 591

T CO₂

Emissions per capita at NOVA:

121

kg CO₂

Campi population 2023:

29 740

⁸ The figures for previous years may differ from those already published, due to improvements on data gathering and methods, with impacts in the time series for data coherence.



SCHOOLS' OVERVIEW

The different schools and campuses are very diverse, with different sizes, occupancy profiles and characteristics. Correspondingly, energy usage (including electricity acquired from the grid and from own production), and related CO₂ emissions have different profiles, as shown in the graphics below. Although in some cases, there are Campus including consumptions managed both by the school and by SAS NOVA (e.g. the Caparica Campus includes NOVA FCT buildings as well as services managed by SAS NOVA at the students' residence Fraústo da Silva and the canteen), the results are presented by school (and not by Campus) following the criteria of management responsibility.

NOVA FCT is the top electricity consumer, followed by ITQB, primarily due to the extensive areas of energy-intensive laboratories, for research and teaching, accounting for 31% and 23% of total electricity consumption, respectively. In third place

as highest consumer comes NOVA SBE (21%), mostly attributed to a growing number of students and internal and external events and activities held within Campus. Together with NOVA Medical School, which also have considerable laboratory areas, the four schools account for 80% of total electricity usage at NOVA.

The consumption of gas is primarily due to SAS NOVA, to supply canteens and residence halls, accounting for 50% of the total gas consumption at NOVA. The remaining gas consumption is distributed by NMS, NOVA FCT, rectorate, ITQB and IHMT, in similar range of magnitude.

Regarding CO₂ emissions (scope 1 and 2) in 2023, NOVA FCT (28%), SBE (22%) and ITQB (20%) are the top emitters, due to its consumption profile. However, it must be underlined the downward trend observed in all NOVA schools due to the reasons explained before.

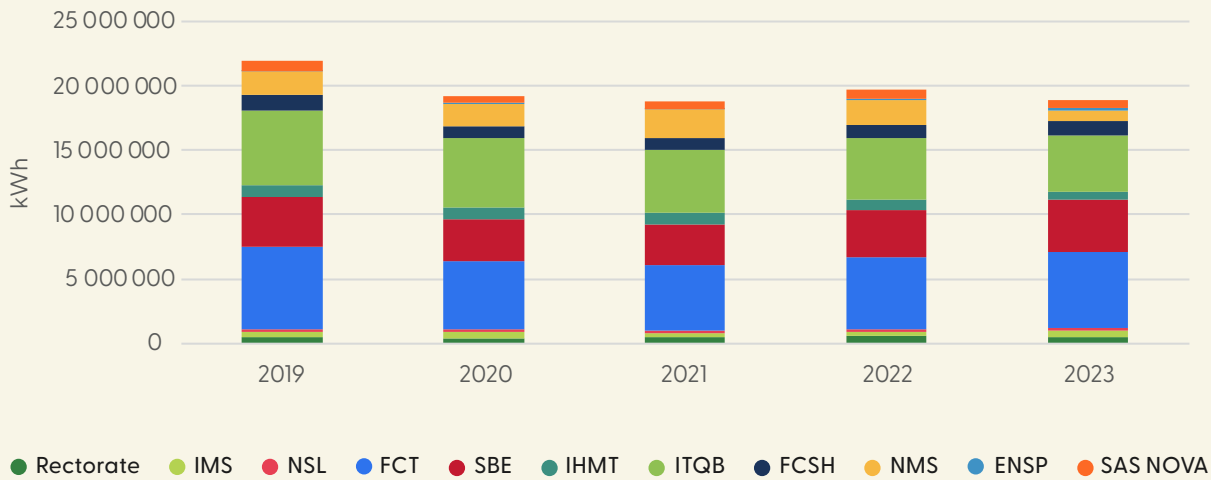


Figure 1 - Electricity usage per NOVA school for the period 2019 to 2023 (kWh)

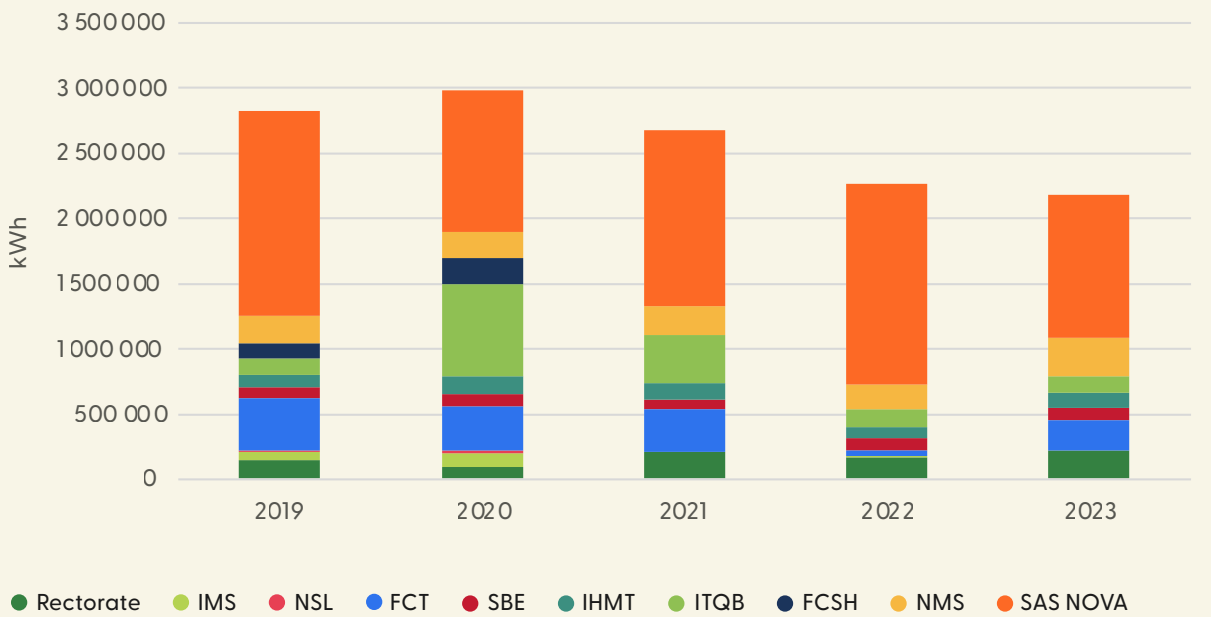


Figure 2 - Gas usage per NOVA school for the period 2019 to 2023 (kWh)

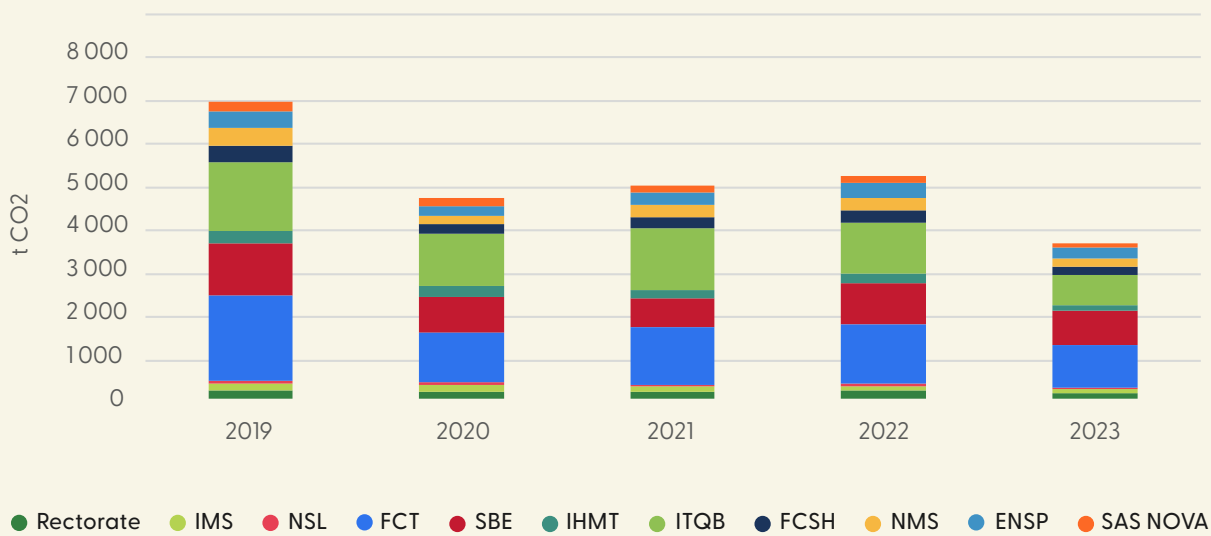


Figure 3 - CO₂ emissions per NOVA schools for the period 2019 to 2023 (t CO₂)

Water consumption

Water usage at NOVA provides different services including water for cooking, for toilets and bathrooms, laboratories and for irrigation. In 2023, total water consumption was 207 760 m³, with 17% from in-campus water extraction, namely at Campolide, FCT and SBE campus. It should be underlined that at SBE only, the in-campus water extraction represented almost 54% of the school total water consumed.

SCHOOLS' OVERVIEW

Water usage at NOVA schools and services has had slight fluctuations. NOVA SBE and NOVA FCT are the main consumers, representing 27% and 26% of the total University consumption, respectively, followed by ITQB (13%) and SAS NOVA (12%). Moreover, the rectorate deserves to be mentioned (9% of NOVA total water consumption), mostly justified by the irrigation of green areas in Campolide Campus.

The water usage at SBE has been increasing since 2019 (+80%), mostly attributed to a growing number of internal and external community utilizing its infrastructures.

NOVA water usage in 2023 decreased by 3% when compared with 2022, although it is still superior to the 2019 value (8% higher), as represented in Figure 4. This trend requires a reinforcement of the need to continue making a dedicated effort to improve water consumption the management.

ITQB also presents an increasing trend with a consumption of more 28% in 2023 in comparison with 2022, and more 72% with 2019. With an opposite trend, NOVA FCT has been decreasing its water usage, with a record in low water consumption in 2023 since 2019 (-22%). Also, SAS NOVA registered a decrease of 14% in 2023 relatively to 2022, being water used mostly in residences and canteens.

Water use must be taken as a priority to tackle resources management, meaning more effort must be allocated to changing behaviors and consumption patterns, and investment in efficient equipment.

WATER CONSUMPTION AT NOVA

Water usage:



207 760

m³

Per area unit:

0,25

m³/m²

Per capita:

7,0

m³

Own resources:

36 234

m³ (17%)

821 066

m² (Total area)



Campi population 2023:

29 740

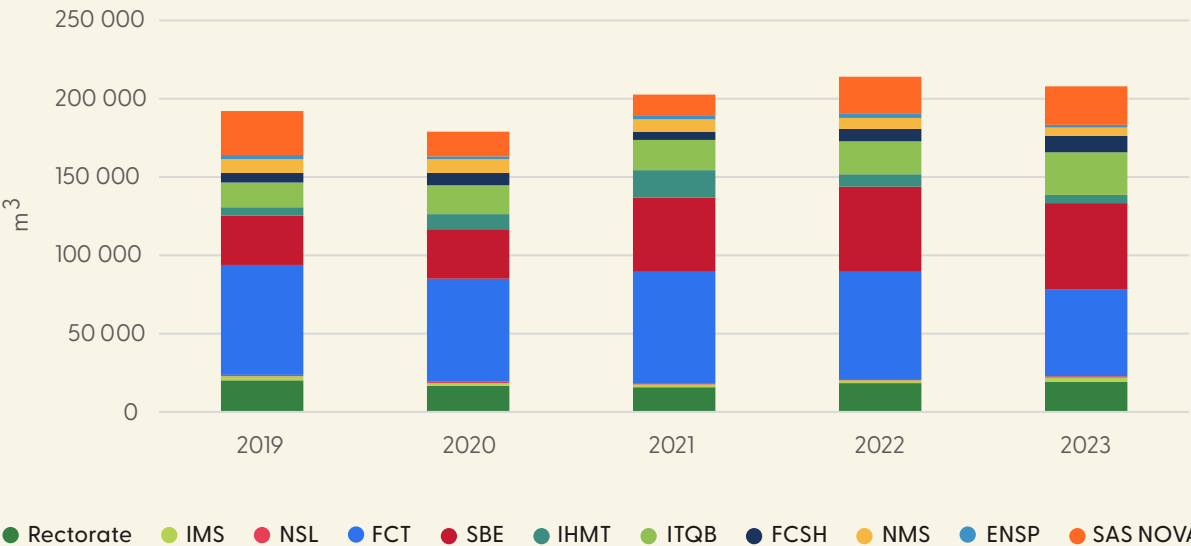


Figure 4 - Water usage by NOVA schools for the period 2019 to 2023 (m³)

Waste Management

At NOVA, waste is understood to be any substance or object that NOVA discards or has the intention or obligation to dispose of, namely paper and cardboard, glass, packaging, bio-waste (i.e, waste from green areas and gardens, food and kitchen waste from catering units), hazardous waste catering units, hazardous waste, electrical and electronic waste and others that fall within the scope of Directive 2008/98/EC. After the creation of the NOVA Zero Waste group in 2022, the first challenge was to map and monitor NOVA's waste ecosystem - what and how much waste is produced, what waste collecting systems are in place and what actors intervene. NOVA has 28 external waste collection islands, spread across its Campi, that serve as collecting points for door-to-door selective waste collection by certified waste management entities.

In 2023, a campaign was developed following a common protocol elaborated in collaboration with waste management experts to estimate waste production in all NOVA schools. The campaign ran for 24 working days, in which at least twice a day the filling capacity of each waste container (i.e. glass, paper and cardboard, packaging and mixed waste) was assessed to correlate with the amount of respective waste produced. At the end, an indicator of waste produced per working day, total and per category, was estimated.

In 2023, NOVA University produced a total of 1108 tonnes of waste, from which 705 tonnes are mixed waste (64%). Therefore, an overall 36% of selected waste collection, which may be taken as a proxy of the recycling rate, slightly above the national average (33%). Organic waste from canteens comes in second as

the most produced waste category at NOVA (15%), currently selectively collected at three schools (NMS, SBE and FCSH-Berna). Paper corresponded to 12% of all waste produced in 2023. Despite not having another data series to compare 2023 with, this campaign allowed for a more informed decision making and prioritization of actions. Accordingly, framed by the waste management plan of each school, NOVA set the goals of improving the recycling rate and decreasing waste production through the approval of a common Zero Waste Policy (see Highlight on page 57).

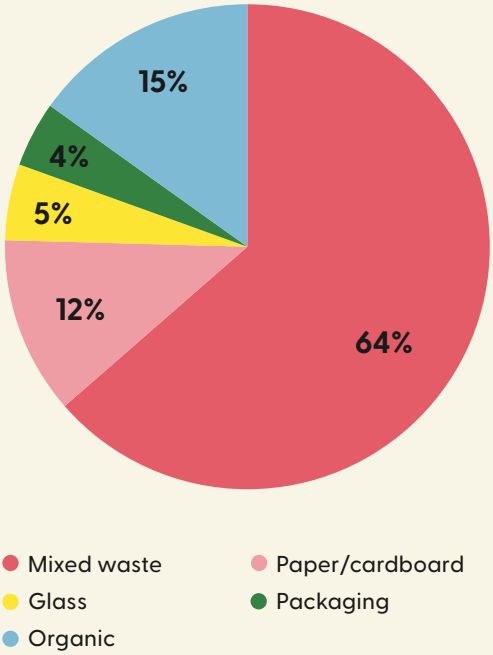


Figure 5 - NOVA waste production per category of waste in 2023



NOVA participated in the RE-SOURCE, an open innovation program, challenged by its reference partner Sociedade Ponto Verde. As a partner in pilot projects, NOVA had the opportunity to share with the participating start-ups a management challenge. Students' behaviour towards recycling has settled NOVA's main challenge in this edition and a project is under development. In 2024, NOVA FCT (the Organic Unit that offered to implement the project) will benefit from an intervention from the Swedish start-up NUDGD. Sociedade Ponto Verde will finance this initiative with €63,000.

SCHOOLS' OVERVIEW

Total waste produced at NOVA is unevenly distributed by its Campi and proportional to their dimension, population and intensity of services and activities provided (Figure 6).

The challenge, as to continue to monitor waste production, will be to decouple NOVA's growing number of programs and initiatives from an increase of waste production. Adding to this, the waste campaign has demonstrated that, for almost all NOVA's schools, per capita unsorted waste surpasses that of recyclable waste, as illustrated by Figure 7. This will need to be at the spotlight in NOVA's journey to reach the goals set by its Zero Waste Policy.

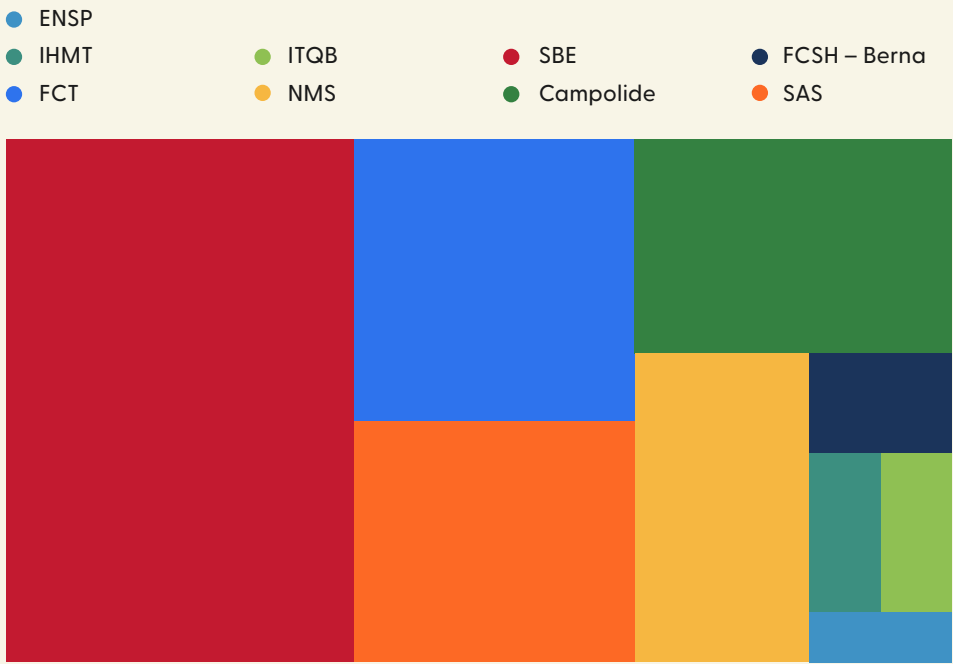


Figure 6 – Distribution of total waste produced at NOVA per school in 2023

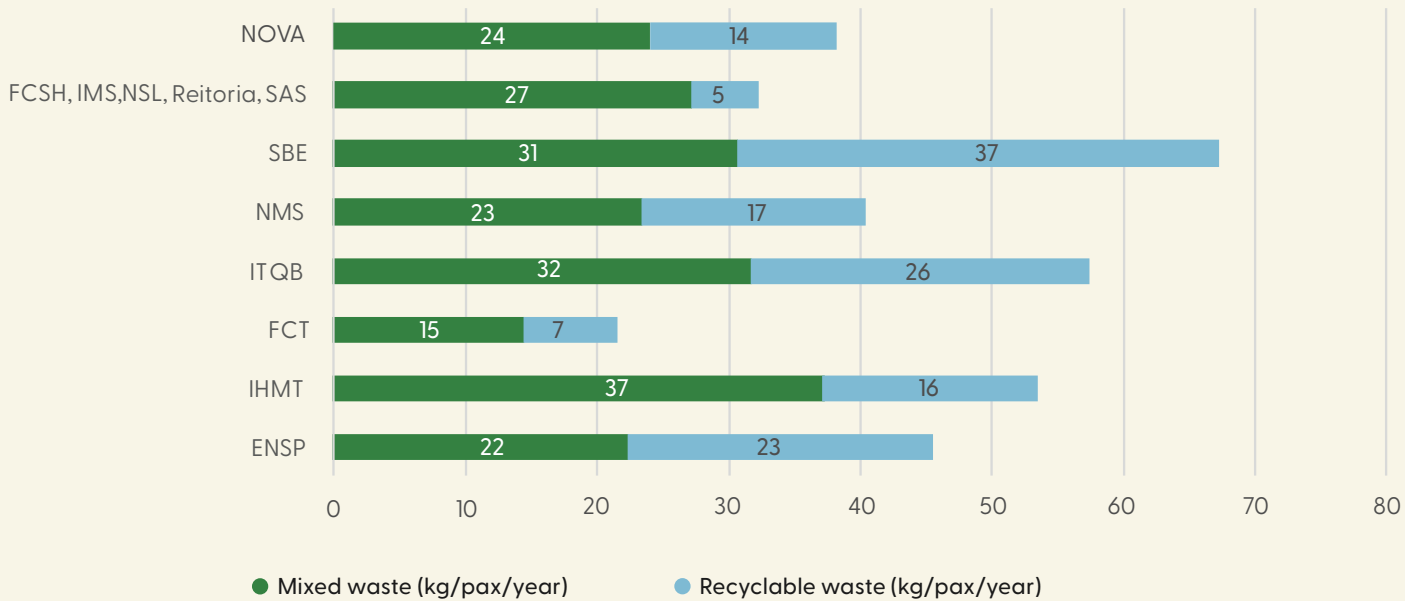


Figure 7- Estimated annual* waste production in 2023, by Campus

* Considering 255 working days



HIGHLIGHT!

Zero Waste Policy approved in November 2023

Zero Waste is here defined as “Conservation of all resources through the production, consumption, reuse and recovery of products, packaging and materials without burning and without disposal on land, water or air that threatens the environment or human health” (Zero Waste International Alliance, 2018). The scope of this policy includes all types of waste generated at NOVA's Campi, including categories recognized by legal frameworks.

NOVA adopts the waste hierarchy defined in the EU Waste Framework Directive (Directive 2008/98/EC) as guiding principles for its decisions and actions in terms of waste management. The hierarchy includes, in order of decreasing priority, the following options: prevention, preparing for reuse, recycling, other types of recovery, disposal. This guideline has the dual objective of improving

resource efficiency and minimizing the adverse impacts resulting from the generation and management of waste.

The policy lists 10 comprehensive guidance objectives to meet the above-mentioned goals, such as promoting circular economy options within Campus, establishing partnerships with waste management operators and Municipalities where NOVA's schools are located, and promote training to foster competencies development within key actors and services. Expected outcomes of this policy range from promoting environmental responsibility regarding consumption, enhancing resource use and saving costs in acquisition and disposal, and positively influencing NOVA's stakeholders and overall society to adopt good practices.

[READ POLICY](#)

Mobility

In 2023, NOVA launched the first cross-sectional mobility survey across all schools, prepared by NOVA FCT. This work, carried out in partnership between the Sustainability and the Socio-Territorial Innovation areas at the rectory, aims to understand the mobility patterns of NOVA’s community, which is essential to develop sustainable mobility solutions. A total of 2 334 participants from all schools answered the survey, including students, faculty, non-faculty and researchers, corresponding to 7% of NOVA’s population. Figure 8 depicts the most frequent place of residence during the school year for the respondents. Despite the clear higher density within Lisbon’s Metropolitan Area, there are still cases where people live far outside of the city.

Preliminary results show the travel time from home to school, corresponding to the total commuting time. On average, arriving to Campus takes students 46 min and non-students 39 min. More than 70% of student respondents

said they use public transportation regularly, surpassing the non-student counterparts. The results have also shown that 74% of non-student population use only individual vehicle as primary mode of transport, while 50% of students use solely public transportation. These results have different justifications given by the respondents. The use of public transportation was mostly attributed to its affordable prices and to the absence of owned car or drivers’ license. These vastly surpassed other possible motives, such as comfort, accessibility, or social and environmental concerns. When asked about what could be improved regarding public transportation options, most respondents answered frequency and reliability of schedules. Saving time is pointed by those using individual transportation as the most important factor, followed by the averting of transshipments and walking. The results show that 70% of those using individual transportation travel alone.

Despite being indicative, these results shed light to the need to address seriously how NOVA community uses commuting mobility options, as this aspect is crucial regarding sustainability standards, including reducing commuting time (a proxy of well-being) and reducing the carbon footprint of the University. This will require partnering with key actors in the region, such as transport operators and soft mobility providers. On the other hand, the results also showcase the need to raise awareness amongst both student and non-student communities and collaborate to provide more convenient and sustainable options. A more elaborated results analysis will be presented in the report next year.

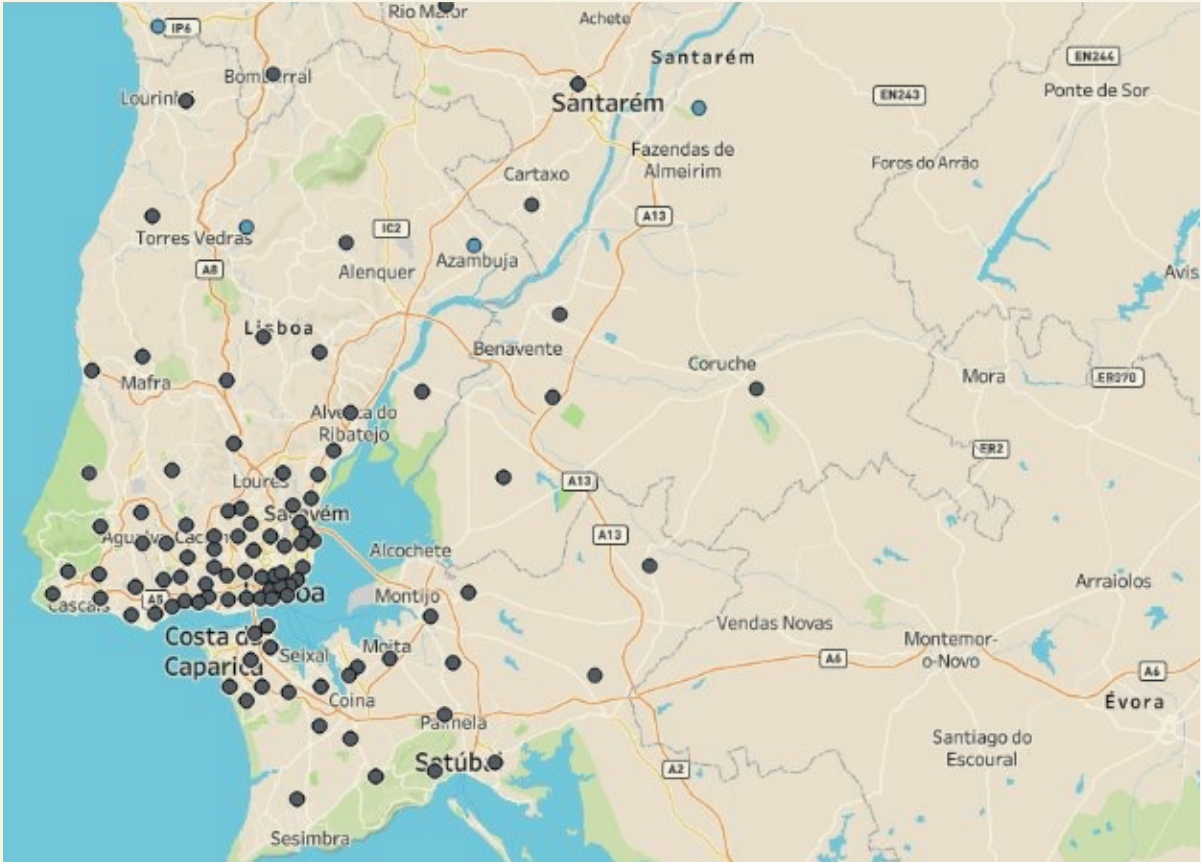


Figure 8- Place of residence of survey respondents

Paper consumption

All NOVA schools have been taking dematerialization processes to increase efficiency and reduce the use of resources (e.g. paper, printers, tonner). Paper consumption is registered from the year 2019 onwards. In 2023, around 6 600 reams of paper were used across all schools, which corresponds to 3,3 million paper sheets. It should be noted that compared with 2019, paper consumption at NOVA has decreased significantly (-61%), as shown in Figure 9. This is partially attributed to the digital transition, namely prompted by the pandemic.

Most paper use was attributed to services at schools (e.g. financial processes) and exam papers and answering sheets. The University is actively working on strategies to address paper consumption through its Zero Waste Group, focusing on digitalization strategies and raising awareness on the topic. To strengthen NOVA’s ambition on the topic, a target of reducing paper consumption by 30% in the next 2 years was provisionally approved by the board of directors in December 2023 (with the possibility of being adjusted as it is monitored).

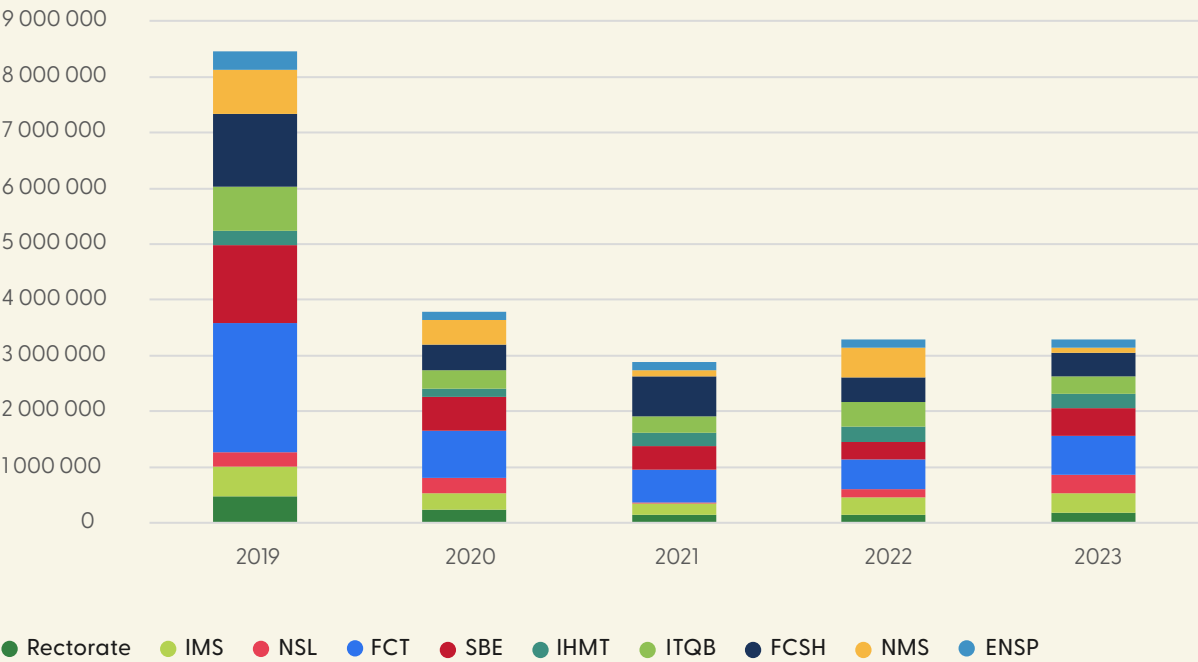


Figure 9- Paper consumption by NOVA school for the period 2019 to 2023 (number of pages)

SCHOOLS’ OVERVIEW

Most schools have shown a significant decrease in paper consumption since 2019 and are working towards continuing on this path namely through digitalization of processes. This will require behavioral changes not only within services but also in teaching and in evaluating methods. The latter could be addressed, for instance, by transitioning exam taking to a digital platform, when appropriate, already happening in NOVA SBE. For some schools, project management and research projects were found to be significant contributors for paper consumption. To develop effective paper reduction strategies, it might be necessary in some cases to disaggregate the data by detailing the consumption within each division or type of use.





Route Zero

In 2023, NOVA University started the *NOVA Roadmap for Climate Neutrality and Resilience* project, co-funded by the Environmental Fund, through a protocol signed during NOVA's annual sustainability event (NOVA Sustainability Days).

Route Zero encapsulates NOVA's vision of Higher Education Institutions (HEI) as amplifiers of knowledge, innovation and partnerships for climate action. Since the last quarter of 2023, NOVA has been setting the groundwork for its net-zero commitment and

climate resilience plan. Meeting this goal requires a systemic transformation across the infrastructures and Campus, institutional processes, daily practices and collective behaviours. NOVA Route Zero will estimate the University carbon footprint (scopes 1, 2 and 3), for a base year and up to 2040, and will identify cost-effective decarbonization options, while mobilize the community, stakeholders and peers for a common and ambitious future. The project will last until July 2025.

The project's ambition and its cross-cutting nature demand for a unique governance model, within which the NOVA 4 The Globe platform has a very active role. At the end of 2023, workshops were held for the Academic and Operational Councils, with the aim of exploring the scope, ambition and priorities of each school regarding NOVA's climate action.

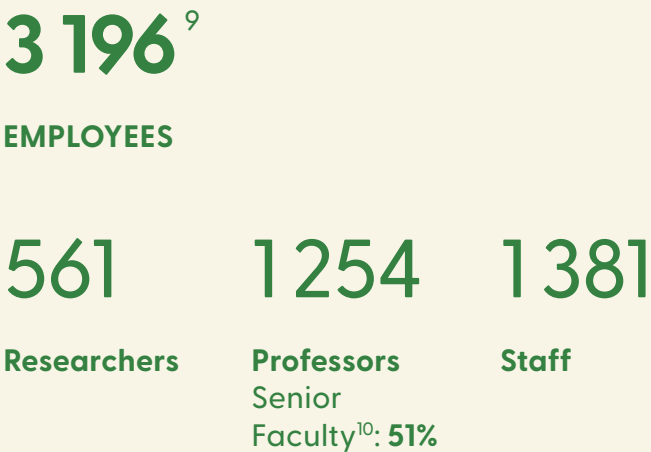


Social impact

Social sustainability reflects NOVA University Lisbon’s responsibility to ensure the health and well-being of its community, which includes not collaborators (teaching and non-teaching staff), and students and alumni. The creation of NOVA’s Office for Equality and Inclusion is a special highlight in 2023.

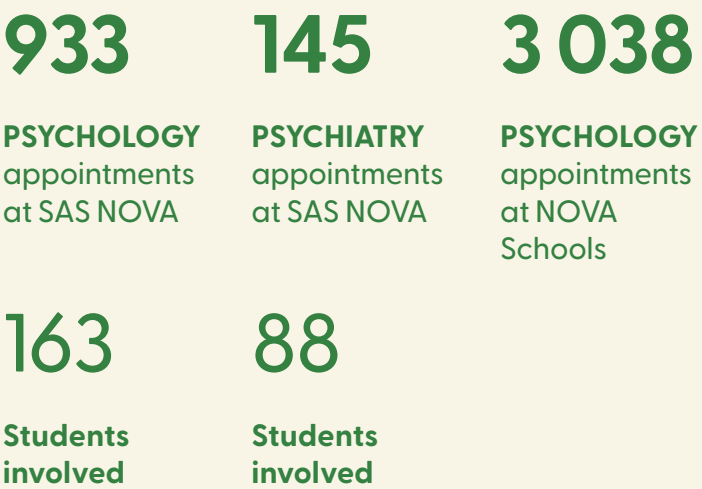
EMPLOYMENT

While promoting sustained, inclusive and sustainable economic growth, NOVA generates employment opportunities for faculty and staff. Values are presented in, accounting for different type of contracts.



WELLBEING

NOVA’s Social Welfare Services (SASNOVA) offers a wide range of services to students and staff (check the list of services). Some Schools also offer Psychology appointments to their students, NOVA FCT reported 27 group sessions.

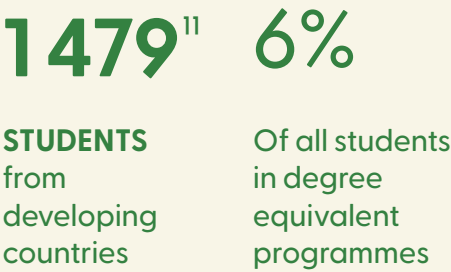


Equity, Diversity and Inclusion

DIVERSITY IN EDUCATION

NOVA’s students and faculty members come from all over the world, including a significant proportion of students from developing countries. Since language plays an important role as an inclusion factor, NOVA’s Schools offer degrees and courses both in Portuguese and English.

NOVA has also been addressing the inclusion of people with disabilities and from immigrant minorities, working together with organizations and local communities. Examples of such commitment include Nova SBE inclusive Community Forum, which addresses the lives of people with disabilities though employment or education, and NOVA Refugee Clinic, that gives legal support to migrant communities.



VOLUNTEERING AT NOVA



⁹ FTE – Full Time Equivalent.
¹⁰ Professors in a career track.

¹¹ Degree Equivalent Programs
¹² FTE – Full Time Equivalent

INCLUSION IN EDUCATION

Access to education is a major institutional concern, given its role in driving social mobility. To facilitate access, Portuguese state grants supported 9% of NOVA Students in 2023.

2 403 497 EUR

STATE GRANTS TO NOVA STUDENTS

1 104 478 EUR

GERAÇÃO NOVA GRANTS

NOVA Social Welfare Services manages three Halls of Residency and Canteens across NOVA Campuses, aiming to promote inclusiveness, supporting vulnerable students. NOVA's Halls of Residency are located in Lisbon and Almada and offer low-cost accommodation to students and faculty members. In the context of increasing accommodation prices in the Lisbon Metropolitan Area, this support is critical to students coming from other parts of the country, or abroad. Canteens offer subsidized complete meals to students.

Halls of Residency

Alfredo de Sousa – Campolide Campus:

180 112
Total beds Subsidized

Fraústo da Silva – Caparica Campus:

210 130
Total beds Subsidized

Lumiar:

70 20
Total beds Subsidized

Canteens

65 263 19%
Subsidized meals¹³ Vegetarian

¹³ Students' meals only
¹⁴ All Professors in a career track.

HIGHLIGHT!

NOVA Office for Equality and Inclusion

Launched in November 2023, the NOVA Office for Equality and Inclusion is a new structure within NOVA's Rectorate, outlined in the university's Strategic Plan 2020-2030. In addition to ensuring the implementation and monitoring of NOVA's Gender Equality Plan, the office's broader commitment is to support Equity, Diversity and Inclusion (EDI) among NOVA's community and to promote a learning, research and work environment that is fair, inclusive and based on equal rights and opportunities.



GENDER EQUALITY

Gender equality in universities accounts for parity among employees, at faculty and student levels. It is relevant among peers but also an important consideration in career progression and seniority.

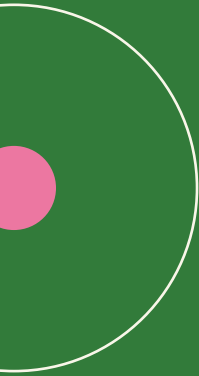
71%	50%	51% ¹⁵	55% ¹⁵
FEMALE STAFF	FEMALE FACULTY	FEMALE STUDENTS	FEMALE GRADUATES
	46%	71%	
	Female senior faculty ¹⁴	Health	
	40%	37%	
	Publications by female authors	STEM ¹⁶	
		54%	
		Arts & Humanities/ Social Sciences	

¹⁵ Degree Equivalent Programs.
¹⁶ STEM: Science, Technology, Engineering and Mathematics.



NOVA SCHOOLS AND SUSTAINABLE DEVELOPMENT GOALS

SELECTED CASES



Several NOVA activities are relevant contributions for the SDG Agenda 2030. A selected number of highlights and publications, as of 2023, were taken from all NOVA schools, considering indicators on research outputs as well as events and initiatives disseminated through the media. Selected publications took into consideration the Elsevier Sustainable Development Goals Mapping



Algorithm and the Field Weighted Citation Impact (FWCI), both available through NOVA Research Portal. Each one of the selected highlight and publication were analysed in detail, considering Sustainable Development Goals' scope and its targets.



Illustration: Madalena Matoso

GOAL 1
NO POVERTY

End poverty in all its forms
everywhere

Indicators

SDG related Research Outputs

27 2%
SCIENTIFIC PUBLICATIONS of total
SDG related publications

4 FCT	6 FCSH	2 NMS	3 NSL
8 IHMT	2 NIMS	2 ENSP	

SDG related Courses

30 8%
COURSES of total
SDG related courses

2 FCT	1 FCSH	23 SBE	1 NSL
3 ENSP			



Highlight!

NOVA SBE
Susana Peralta, Bruno P. Carvalho
e Miguel Fonseca

The Social Elevator: Is being born poor
a fatality?

One in four people who grow up in low-income families is poor and the children of unskilled workers have a risk of poverty rate three times higher than the children of specialists in intellectual activities. The conclusions are from the report ‘Portugal and the Social Elevator: Is being born poor a fatality?’ Released on the International Day for the Eradication of Poverty, the study points the financial situation of the household is “an important determinant of the intergenerational transmission of poverty”, but not only that. The Social Balance report 2023, as part of the Social Equity Initiative, draws a socio-economic portrait of Portuguese families and provides a basis for transversal discussion on situations of poverty and social exclusion in the country. Income, employment status, access to education and health, housing conditions and social and political participation are also important factors.

SDG Target: 1.4

[IN THE NEWS](#)

Relevant Publication

NOVA FCT
António Abreu

Exploring the Asymmetric Effect of Internal and External Economic Factors on Poverty: A Fresh Insight from Nonlinear Autoregressive Distributive Lag Model

The asymmetric impact of internal (education, military, health expenditures, governance quality) and external (foreign direct investment, trade opening) factors on poverty reduction was assessed using a non-linear ARDL (autoregressive distributed lag) co-integration approach for the period 1981-2019. Results show that these factors have varying effects on poverty, underscoring the importance of considering non-linear relationships. This study contributes to the understanding of poverty economics by examining multiple factors and employing a non-linear approach for analysis, with implications for poverty reduction policies.

SDG Target: 1.1 and 1.2

[READ MORE](#)

GOAL 2

ZERO HUNGER

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

Indicators

SDG related Research Outputs

60 3%

SCIENTIFIC PUBLICATIONS of total SDG related publications

28 FCT	4 FCSH	1 SBE	7 NMS
2 NSL	7 IHMT	3 NIMS	7 ITQB
1 ENSP			

SDG related Courses

40 10%

COURSES of total SDG related courses

12 FCT	23 SBE	3 NMS	1 ITQB
1 ENSP			

Highlights!

NMS

Summer Medical School: Lifestyle

Summer Medical School: Lifestyle is an innovative education program at NOVA Medical School focusing in Medicine of the Future, promoting disease prevention and healthy lifestyles among younger people. Designed for kids aged 6 and over, the second edition of the summer school took place in July 2023. Activities are aligned with science, nutrition, mental health, and physical exercise. 64 children from 6 to 14 (16 per week), and 10 from 15 to 18 years old were involved.

SDG Target: 2.2

IN THE NEWS

ITQB NOVA

Carlota Vaz Patto

Living Lab GPeaPort

As part of the DIVINFOOD EU Project, the Living lab aims to increase the number of farmers producing Grass pea and develop innovative production methods that respect biodiversity; as well as Participate in the development of new food products using grass pea. Joining cantinas chefs, seed producers, municipal services, consumers, local gardeners' associations, agricultural schools and researchers, including in culinary innovation, the Living lab GPeaPort promote different activities, such as participatory field trials, cross breeding scheme, citizen-based focus groups, and Workshops.

SDG Target: 2.4

WEBSITE



Relevant Publications

NMS

Filomena Gomes

Is nutritional support effective in malnourished polymorbid medical inpatients?

Like other inpatients, nutritional support is effective also among polymorbid medical inpatients, a vulnerable population with high healthcare costs.

The authors conduct a reanalysis and update recent meta-analyses, identifying 16 randomized trials. Nutritional intervention significantly reduces mortality and unplanned hospital readmission rates, with notable improvements in nutritional outcomes. By exploring the case of polymorbid medical inpatients, the study addresses a particular form of malnutrition.

SDG Target: 2.2

READ MORE

NOVA IMS

Eric Vaz, Bruno Damásio and Fernando Bação

Urban habitats and food insecurity: Lessons learned throughout a pandemic

Food deserts (an area that has limited access to food that is plentiful, affordable, or nutritious) and urban inequality in Canadian cities, particularly Toronto, are connected to COVID-19 hotspots. By using geographic information systems and machine learning, the research identifies clusters of food deserts and their socio-economic profiles. A strong correlation between food deserts, low-income areas and COVID-19 hotspots was found, highlighting environmental injustice and reduced liveability. The integration of policies that involve public health and spatial decision-support establish a multi-functional understanding of the complexity of food security. The approach offers a comprehensive strategy to combat food insecurity and its associated socio-economic challenges.

SDG Target: 2.1

READ MORE

GOAL 3

GOOD HEALTH AND WELL-BEING

Ensure healthy lives and promote well-being for all at all ages

Indicators

SDG related Research Outputs

956

SCIENTIFIC PUBLICATIONS

55%

of total SDG related publications

154 FCT	38 FCSH	23 SBE	305 NMS
8 NSL	211 IHMT	26 NIMS	53 ITQB
138 ENSP			

SDG related Courses

116

COURSES

30%

of total SDG related courses

10 FCT	1 FCSH	27 SBE	37 NMS
4 NSL	7 IHMT	2 NIMS	11 ITQB
7 ENSP			

Highlights!

ENSP NOVA

Social Prescription Portugal

Social Prescription Portugal is a network that integrates researchers, professionals from various areas, service users, managers and policy makers and aims, in a collaborative approach, to enhance skills, share experiences and disseminate strategies for the effective and sustainable implementation of Social Prescription in Portugal. Social Prescribing (fazer associar este link, não estou a conseguir! <https://www.ensp.unl.pt/knowledge-centers/prescricao-social/>) creates connections between people, health care and support resources in the community to improve their health, well-being and quality of life. Around 900 patients have already been prescribed with such treatments.

SDG Target: 3.4

[IN THE NEWS](#)

IHMT NOVA

25 doctors from Guinea-Bissau finished the specialization course on public health

The Portuguese Institute of Hygiene and Tropical Medicine (IHMT) has been an active implementation partner of IANDA Guinea Saúdi since 2020, a project co-financed by the European Union (EU), Camões I.P. and the Calouste Gulbenkian Foundation. In 2023, 25 doctors from Guinea-Bissau finished the international specialization course on public health. Also the National Health Conference took place in Bissau, with an active contribution of the Institute, supporting the organization and the technical contents.

SDG Target: 3.c



Relevant Publications

ENSP NOVA

Christopher Millett

Ultra-processed food consumption, cancer risk and cancer mortality: a large-scale prospective analysis within the UK Biobank

The association between ultra-processed food (UPF) consumption and cancer risk and mortality, in a large British adult cohort was assessed through datasets from the UK Biobank participants, (N = 197426, 54.6% women) suggesting higher UPF consumption correlates with increased incidence and mortality of overall and specific cancers, notably ovarian cancer in women. Food items consumed were categorised according to their degree of food processing using the NOVA food classification system.

SDG Target: 3.4

[READ MORE](#)

ITQB NOVA

Carla Brites

Potential of Legumes: Nutritional Value, Bioactive Properties, Innovative Food Products, and Application of Eco-friendly Tools for Their Assessment

Legumes are essential protein sources, rich in dietary fiber and phytochemicals, with proven health benefits like reducing cardiovascular disease and cancer risks. Increased consumption of legumes is emphasized due to their nutritional and functional value. Additionally, the review encourages the adoption of innovative, eco-friendly methodologies for assessing legume composition, aiming to promote their wider dissemination and utilization.

SDG Target: 3.4

[READ MORE](#)

GOAL 4

QUALITY EDUCATION

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

Indicators

SDG related Research Outputs

146

8%

SCIENTIFIC PUBLICATIONS

of total SDG related publications

17 FCT	91 FCSH	3 SBE	5 NSL
7 IHMT	21 NIMS	26 NIMS	2 ENSP

SDG related Courses

32

8%

COURSES

of total SDG related courses

2 FCT	24 SBE	3 NSL	1 ITQB
2 ENSP			

Highlights!

NOVA SBE

Scholarships awarded

1.5 million euros was the amount to scholarships to master students in need in 2023. It was the academic year in which the most scholarships were awarded. “No one is left out and stops studying at Nova SBE due to financial difficulties”, said Pedro Oliveira, dean of the School. Generous donors, such as foundations and private companies, have been partnering with Nova SBE to create more opportunities and initiatives allowing talented students to meet their full potential and achieve their goals.

SDG target: 4.3

[IN THE NEWS](#)

NOVA IMS

APPLICA-TE 8th Edition

The 8th Edition of NOVA IMS Challenge – APPLICA-TE took place in June 2023. The idea competition invites students from 7th to 12th grade to create an app with one unique goal: to contribute to achieving one of the 17 SDG. This initiative promotes sustainable development and entrepreneurial spirit among young people, through quality education.

SDG Target: 4.4

[READ MORE](#)



Relevant Publications

NOVA IMS

Vitor Santos

A Reference Model for Artificial Intelligence Techniques in Stimulating Reasoning, and Cognitive and Motor Development

The integration of Artificial Intelligence (AI) in education was explored highlighted the necessity of understanding AI’s role in supporting cognitive and motor development, as well as reasoning, within pedagogical methods. A reference model for utilizing AI techniques in software to enhance education is proposed, offering concrete examples to illustrate its potential impact.

SDG target: 4.4

[READ MORE](#)

NOVA FCSH

Ana Valente Rodrigues, and Paulo Nuno Vicente

Experimental Science Teaching practices in the 1st Cycle of Basic Education in Portugal: an analysis of the reports of the General Inspectorate of Education and Science

The practices of 1st Cycle of Basic Education (CEB) teachers, regarding Experimental Science Teaching in Portugal, was examined based on reports from the General Inspectorate of Education and Science (IGEC). Findings reveal that while many teachers engage in practical science activities, they do so sporadically and often in a decontextualized manner, lacking active student involvement and emphasizing knowledge over skills. Assessment of learning in these activities tends to focus on knowledge rather than holistic development.

SDG Target: 4.1

[READ MORE](#)

GOAL 5

GENDER EQUALITY

Achieve gender equality and empower all women and girls

Indicators

SDG related Research Outputs

45

3%

SCIENTIFIC PUBLICATIONS

of total SDG related publications

4 FCT	24 FCSH	1 SBE	1 NMS
10 NSL	2 IHMT	1 NIMS	2 ENSP

SDG related Courses

33

9%

COURSES

of total SDG related courses

2 FCT	24 SBE	3 NSL	2 NIMS
1 ITQB	1 ENSP		

Highlight!

NOVA FCSH

25 years of Women’s Studies

The working group Faces de Eva – Women’s Studies, founded by Professor Zília Osório de Castro at NOVA.FCSH, celebrated 25 years of activity in 2023. Among many initiatives (postgraduate training, short courses and conferences), the scientific journal (six-monthly) with the same name has been publishing, promoting women’s claims and equal opportunities. Currently integrated into the CICS. NOVA research unit, the working group presented a visual chronology of the covers of the 50 issues of the journal dedicated to Women and Gender Studies that has been published since 1999. It was displayed in the atrium of the Vitorino Magalhães Godinho Library, at Colégio Almada Negreiros.

SDG Target: 5.5

[READ MORE](#)



Relevant Publications

NOVA SBE

Lisbeth Rodrigues

Historical gender discrimination does not explain comparative Western European development: evidence from Portugal, 1300-1900

The notion that gender discrimination significantly contributed to the income gap between Southern and Northwestern Europe is challenged. Through a comprehensive analysis spanning six centuries and utilizing a new dataset, the study concludes women in Portugal historically did not face greater discrimination compared to counterparts in Northwestern Europe. Similar gender wage gaps and marriage patterns suggest other factors influenced income divergence.

SDG Target: 5.5

[READ MORE](#)

IHMT NOVA

Paulo Ferrinho, Isabel Craveiro, and Mohsin Sidat

Is workplace violence against health care workers in Mozambique gender related?

Violence against health care workers (VHCW) in Lichinga, Mozambique is reassessed, highlighting a gendered dimension. Findings suggest women, compared to men, are less aware of policies to address VHCW, feel discouraged from reporting, and are more frequently threatened or harmed by opposite-sex aggressors. Addressing gender in VHCW research is crucial to effective intervention strategies.

SDG Target: 5.2

[READ MORE](#)

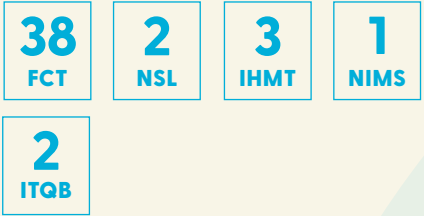
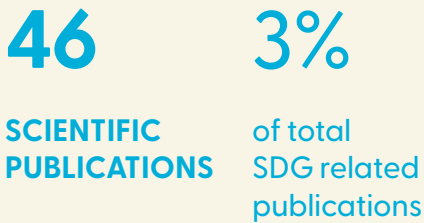
GOAL 6

CLEAN WATER AND SANITATION

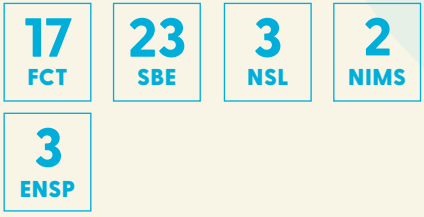
Ensure availability and sustainable management of water and sanitation for all

Indicators

SDG related **Research Outputs**



SDG related **Courses**



Highlight!

NOVA SBE

Thirst Project

Thirst Project is a nonprofit organization that works with the support of young people to END the global water crisis by building freshwater wells in developing communities that need safe, clean drinking water. It seeks to create a generation of socially conscious young people, and it has active teams spread across the globe, made up of students who made the decision to make a difference and, effectively, save lives. The NOVA Thirst Project Portugal teams' main objectives are to raise awareness among the student community about the problem of the global water crisis, as well as to raise funds for the construction of drinking water boreholes in the neediest communities. In 2023, students collected more than 1.5k Eur from initiatives developed in partnership with other students' clubs at Nova SBE.

SDG target: 6.1

[WEBSITE](#)

Relevant Publication

NOVA FCT

Sónia A. C. Carabineiro

Green Synthesis and Photocatalytic Dye Degradation Activity of CuO Nanoparticles

This study introduces a novel method for synthesizing CuO nanoparticles (NPs) using *Seriphidium oliverianum* leaf extract as a reducing and stabilizing agent. The CuO NPs show high potential for degrading water-soluble industrial dyes, indicating their effectiveness in treating wastewater. This suggests that bio-mechanochemically synthesized CuO NPs could play a crucial role in efficiently removing dyes from water, contributing to efforts aimed at ensuring clean water availability.

SDG target: 6.3

[READ MORE](#)

GOAL 7

AFFORDABLE AND CLEAN ENERGY

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

Indicators

SDG related Research Outputs

207 12%

SCIENTIFIC PUBLICATIONS of total SDG related publications

173 FCT	4 FCSH	1 SBE	5 NSL
22 NIMS	12 ITQB		

SDG related Courses

55 14%

COURSES of total SDG related courses

28 FCT	24 SBE	1 NSL	1 NIMS
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Highlight!

NOVA FCT

Fighting energy poverty

Portugal is currently the 5th country in Europe with the highest risk of energy poverty, representing a serious risk to the well-being of communities. To accelerate the country's just energy transition, Calouste Gulbenkian Foundation, launched the Transition Point, in partnership with NOVA FCT, a proximity initiative that operates at the municipality or parish level and tests an innovative model to support families in improving the energy performance of their homes. The residents are provided with information on how they can improve the thermal comfort of their homes – a pressing need in Portugal, due to expected increasing heatwaves.

SDG target: 7.3

[IN THE NEWS](#)

Relevant Publication

NOVA FCT

Helena Carvalho and Carina Pimentel

Towards a Conceptual Framework for Agroforestry Residual Biomass Sustainable Business Models

The potential of residual biomass from agroforestry activities in Portugal as a source of renewable and greener raw materials is explored. Various biomass streams are identified, and a framework is proposed to assess factors impacting valorisation efforts. This knowledge may guide future new sustainable business models to convert low-value residues into valuable feedstock and products, benefiting local communities and industries.

SDG target: 7.2

[READ MORE](#)

GOAL 8

DECENT WORK AND ECONOMIC WORK

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

Indicators

SDG related Research Outputs

148

9%

SCIENTIFIC PUBLICATIONS

of total SDG related publications

56 FCT	15 FCSH	13 SBE	3 NMS
5 NSL	10 IHMT	44 NIMS	2 ITQB

SDG related Courses

54

14%

COURSES

of total SDG related courses

5 FCT	39 SBE	5 NSL	1 NIMS
1 ITQB	3 ENSP		



Highlights!

NOVA SBE
Miguel Ferreira

Finance for all

The second edition of "Finanças para Todos" is a financial literacy program, created by the Nova SBE Finance Knowledge Center with the support from Fidelidade, aiming to educate participants about financial topics including budgeting, credit, investment, retirement planning, banking, insurance, and digital financial literacy. The program consists of five sessions and focuses on sharing essential knowledge to empower individuals to manage their finances effectively, also facilitating access to banking, insurance and financial services for all. In 2023, the program trained about 250 people in the face-to-face format, at the Nova SBE campus, and due to high demand, three more online classes, each with about 100 participants, were also formed.

SDG Target: 8.10

[IN THE NEWS](#)



Relevant Publication

NOVA FCSH
Raquel Varela and João Areosa

Living and Working Conditions of Judicial Officials

NOVA FCSH's Observatory for Living and Working Conditions participated in the "National Inquiry into the Living and Working Conditions of Judicial Officials". The final report revealed 80% of judicial employees presented high levels of exhaustion, clearly as a consequence of work organization and management. From this share, around 44% have a very high and extremely high level of emotional exhaustion, which represents levels higher than those of other professional classes already studied, including teachers, journalists or flight personnel. The Observatory for Living and Working Conditions is a transdisciplinary project bringing together researchers from different scientific areas and different institutions, with the aim of studying work, health, education, housing, social status, social security and population dynamics. Studying working environments is a way to protect labor rights and promote safety.

SDG Target: 8.8

[IN THE NEWS](#)

NOVA FCT
Inês A. Ferreira, João Pedro Oliveira, and Helena Carvalho

Assessing the impact of fusion-based additive manufacturing technologies on green supply chain management performance

Using wire and arc additive manufacturing (WAAM) technology, a production process used to 3D print, on green supply chain management (GSCM) performance, revealed relative advantage and supply-side benefits for GSCM performance. A metallurgical company was used as an exploratory case study. This research expands knowledge on WAAM technology and its relationship with GSCM practices, offering valuable propositions for further exploration and theoretical development, ultimately facilitating economic growth through green innovation and supply chain optimization.

SDG Target: 8.2 and 8.4

[READ MORE](#)

GOAL 9

INDUSTRY, INNOVATION AND INFRASTRUCTURE

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

Indicators

SDG related Research Outputs

172 10%
SCIENTIFIC PUBLICATIONS of total SDG related publications

78 FCT	1 FCSH	4 SBE	3 NSL
46 IHMT	39 NIMS	1 ENSP	

SDG related Courses

66 17%
COURSES of total SDG related courses

31 FCT	27 SBE	4 NSL	4 NIMS
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Highlights!

NOVA FCSH & ITQB NOVA

90 Seconds of Science won the Podes 2023 Prize

The 90 Seconds of Science program, a partnership between NOVA FCSH and ITQB NOVA, won the Podes 2023 Prize in the Radio category. The winners were revealed on November 18th, at the end of the Podcast Festival – Podemos 2023. 90 Segundos de Ciência disseminates the science carried out in Portugal in all scientific areas and throughout the country, giving researchers a voice. It has been on air since November 21, 2016, on Antena 1, and broadcasted every weekday. 1689 episodes were recorded (full list [here](#)). By promoting science, the podcast has been enhancing scientific research and encouraging innovation.

SDG Target: 9.5

[READ MORE](#)



Relevant Publication

NOVA FCT

João Martins

Climate Adaptation in the Power Distribution Network

Climate change is increasing the frequency and severity of extreme weather events, putting the electric power grid at risk. In response, a collaborative project between FCT NOVA and the Instituto Dom Luis supported the distribution system operator E-REDES in developing its adaptation plan for mainland Portugal. Through spatial information systems and AI, the project assessed the network's vulnerability to various climate hazards, as strong winds, forest fires, floods, coastal inundations and snow. Regional risk areas for each asset type were identified, for various climate scenarios and time periods, suggesting measures to enhance grid resilience, strengthen its reliability, and guide investment decisions. Modern infrastructures require to be climate resistant to ensure the services provisions.

SDG Target: 9.4

[HEAR MORE](#)

NOVA SBE

Emanuel Gomes

Treble innovation firms: Antecedents, outcomes, and enhancing factors

The rise of digitalization and service business models in industrial settings have materialized in a distinctive category of innovation-oriented manufacturing firms, labelled as treble innovation firms. Such firms are characterized by simultaneously developing the three types of technological innovation –process, product, and digital service. A survey of 423 Spanish manufacturing firms was used to examine the antecedents, outcomes and enhancers of digital service innovation adoption in firms that already possess process and product innovations (dual innovation firms). Key findings reveal that treble innovation firms represent 21% of manufacturing firms, achieve higher profit margins compared to dual innovation firms, and can further enhance their profit advantage through resource retrenchment and value migration practices.

SDG Target: 9.5

[READ MORE](#)

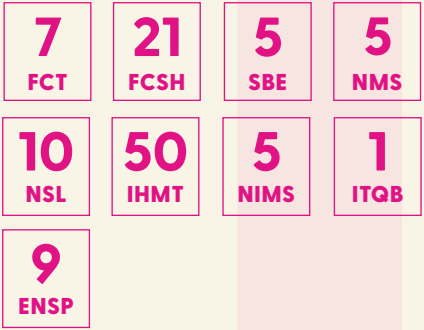
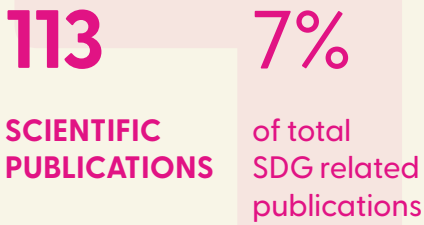
GOAL 10

REDUCED INEQUALITIES

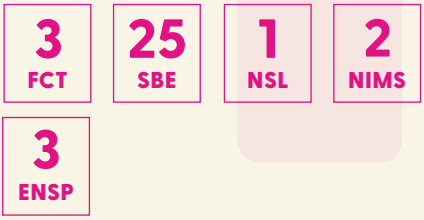
Reduce inequality within and among countries

Indicators

SDG related Research Outputs



SDG related Courses



Highlight!

NSL
Teresa Pizarro Beleza

New Observatory of Racism and Xenophobia

NOVA School of Law, in partnership with the Government, created the Observatory of Racism and Xenophobia located at NOVA School of Law. The Observatory's mission is to understand the dimensions and modalities of discriminatory practices in institutional contexts, including academia, promoting equal opportunities and reducing inequalities. Among its activities, “Conversations” extended to civil society is a key one, discussing perspectives and experiences on racism and xenophobia in Portugal, presented by invited personalities and associations.

SDG Target: 10.3

[IN THE NEWS](#)

Relevant Publication

NOVA SBE
João Tovar Jalles

For whom the bell tolls: Climate change and income inequality

The relationship between climate change and income inequality is assessed through data from 158 countries spanning from 1995 to 2019. An increase in climate change vulnerability is positively associated with rising income inequality. The impact of climate change on income inequality varies significantly between advanced and developing countries, with developing nations experiencing a substantially greater effect due to weaker capacity for climate change adaptation and mitigation. These findings are consistent across different estimation methods and measures of income inequality, although challenges remain in accurately measuring climate change vulnerability and resilience, which can limit empirical analysis.

SDG Target: 10.3

[READ MORE](#)

GOAL 11

SUSTAINABLE CITIES AND COMMUNITIES

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

Indicators

SDG related Research Outputs

125

7%

SCIENTIFIC PUBLICATIONS

of total SDG related publications

42	34	1	2
FCT	FCSH	NMS	NSL
6	36	2	2
IHMT	NIMS	ITQB	ENSP

SDG related Courses

90

24%

COURSES

of total SDG related courses

35	18	24	5
FCT	FCSH	SBE	NSL
3	1	4	
NIMS	ITQB	ENSP	



Highlight!

NOVA IMS
Miguel Neto

Oeste Smart Region wins international award

Oeste Smart Region promotes the creation of a regional governance model based on data and information management. Capable of supporting the creation of a true center of territorial intelligence, the data platform may propel a paradigm shift in territorial planning and management based on data. Oeste Smart Region was distinguished by the ‘Special Achievement in GIS Award’, by ESRI.

SDG Target: 11.3

[READ MORE](#)

Relevant Publication

ENSP NOVA
Vânia Gaio

Interactive effects of ambient fine particulate matter and ozone on daily mortality in 372 cities: two stage time series analysis

The intricate relationship between air pollution, namely fine particulate matter (PM2.5) and ozone (O3), and daily mortality during 1994–2020 was investigated across 372 cities globally. The findings reveal significant synergistic effects between PM2.5 and O3, with increasing risk of total mortality when taking both pollutants. Subgroup analyses showed that interactions between PM2.5 and O3 were more prominent in high latitude regions and during cold seasons. The findings of this study suggest a synergistic effect of PM2.5 and O3 on total, cardiovascular, and respiratory mortality, indicating the benefit of coordinated control strategies for both pollutants, to build sustainable cities.

SDG Target: 11.6

[READ MORE](#)

GOAL 12

RESPONSIBLE CONSUMPTION AND PRODUCTION

Ensure sustainable consumption and production patterns

Indicators

SDG related Research Outputs

136

SCIENTIFIC PUBLICATIONS

8%

of total SDG related publications

79 FCT	8 FCSH	6 SBE	4 NMS
10 NSL	3 IHMT	22 NIMS	3 ITQB
1 ENSP			

SDG related Courses

55

COURSES

14%

of total SDG related courses

18 FCT	1 FCSH	24 SBE	2 NMS
3 NSL	2 NIMS	2 ITQB	

Highlight!

NOVA FCT
Alexandra Ribeiro

Recycling lithium

Lithium (Li) metal has been in high demand, due to the increasing popularity of e-mobility and electronic devices. Unrecovered Li from its waste generation is estimated at 27 % of the current global production. RELiEF project proposes an integrated recycling facility to produce Li from secondary raw material materials with continuous processing to produce materials for batteries. Li wastes will be reduced by more than 70 %, which will instead be recycled into high-value battery-grade material. The project will greatly strengthen the EU’s competitiveness in the battery storage value chain.

SDG Target: 12.5

IN THE NEWS



Relevant Publication

NOVA FCT
Samruddha Kokare, João Pedro Oliveira, Telmo Gomes dos Santos, and Radu Godina

Environmental and economic assessment of a steel wall fabricated by wire-based directed energy deposition

Environmental impacts and costs are important criteria for adoption of any manufacturing process. Therefore, environmental and economic performance of Wire and Arc Additive Manufacturing (WAAM) through the use of Life Cycle Assessment (LCA, ISO 14044) and Life Cycle Costing (LCC, IEC 60300–3–3) methodologies, in a

case study of a single steel wall manufactured. Comparing WAAM with laser powder bed fusion (LPBF) and Computer Numeric Control (CNC) milling processes, the study finds that CNC milling is the most economical and ecological option for a single steel wall. However, the performance depends on product complexity and material efficiency. Raw material production and labor are identified as major environmental and cost drivers in WAAM. The integrated methodology proposed can be applied to analyze other manufacturing processes, facilitating informed decision-making for sustainable manufacturing practices.

SDG Target: 12.4

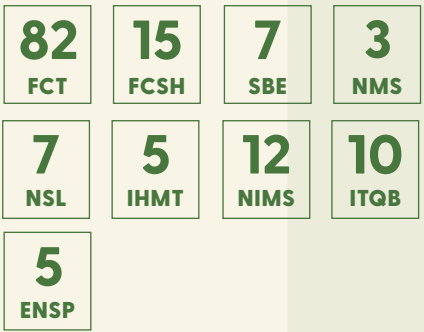
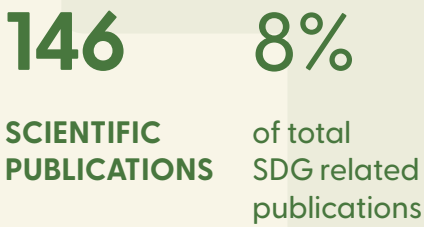
READ MORE

GOAL 13
CLIMATE ACTION

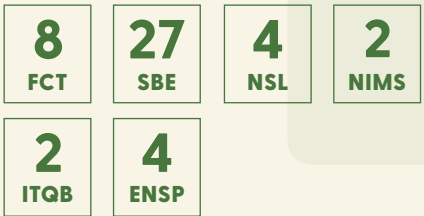
Take urgent action to combat climate change and its impacts

Indicators

SDG related Research Outputs



SDG related Courses



Highlight!

NOVA FCT

National Plan on Energy and Climate PNEC2030

PNEC is a key instrument the EU governments have in hands to accelerate energy transition. PNEC shows how the country will likely achieve mandatory targets on energy matters like renewables, energy efficiency and greenhouse gas emissions reductions until 2030, with an eye in 2040. NOVA FCT supports the technical work regarding the Portuguese energy system, from the supply, as power production, oil and gas to the demand sectors, as buildings, industry and transport. Through integrated energy modelling tool (IEA TIMES_PT), the FCT team deliver a set of future pathways of cost-effective technological options, including investments, to satisfy energy services demand, according to expected population and GDP evolution, expected climate impacts and energy poverty targets.

SDG Target: 13.2

[READ MORE](#)

Relevant Publication

NOVA FCT

Nuno Carvalhais

Microbial carbon use efficiency promotes global soil carbon storage

Soils store more carbon than other terrestrial ecosystems. Soil microorganisms play an important role on soil organic carbon (SOC) formation and persistence, but the microbial carbon use efficiency (CUE) is uncertain, which is crucial for understanding its response to climate change. Using global datasets, models and meta-analysis, the research finds that CUE is a significant factor influencing SOC storage, surpassing other factors like carbon input and decomposition. Additionally, there is a positive correlation between CUE and SOC content. These findings highlight the importance of microbial processes in determining global SOC storage and suggest that understanding CUE and its environmental drivers can enhance predictions of SOC feedback to climate change.

SDG Target: 13.3

[READ MORE](#)

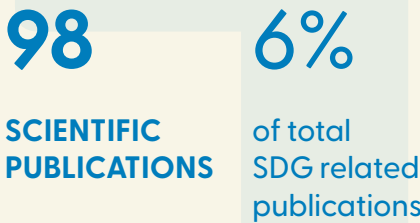
GOAL 14

LIFE BELOW WATER

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

Indicators

SDG related Research Outputs



SDG related Courses



Highlight!

NOVA FCT

Marine Science, Technology & Society Education Programme

The Programme was a beacon of interdisciplinary learning, bridging the gap between the marine environment, technological advancement and societal impact, awarded by a EEA grant. Students are introduced to a wide array of technological tools, from remote sensing devices and satellite imagery to underwater robotics and AI-powered data analysis platforms. The programme emphasized hands-on experience, preparing students for careers in marine science that require technical proficiency and innovative thinking. Through this program 20 students were fully funded, 29 seminars were delivered by national and international experts and four periods of internships were conducted at a pilot station in Olhão and at OsloMet in Norway.

SDG Target: 14.2

[IN THE NEWS](#)

Relevant Publication

NOVA FCT

Sara Bettencourt and Sandra Caeiro

Public perceptions, knowledge, responsibilities, and behavior intentions on marine litter: Identifying profiles of small oceanic islands inhabitants

The perceptions, knowledge, awareness and attitudes towards marine litter among inhabitants of Madeira and Porto Santo were studied. Findings indicate that while participants are well-informed about the sources and impacts of marine litter, they often underestimate degradation rates and attribute the problem to littering, single-use products and excessive packaging. Some individuals do not feel responsible for reducing marine litter, particularly younger individuals, men and students. Distinct profiles among respondents suggest a need for targeted interventions to improve marine litter literacy. Overall, the findings underscore the importance of increasing public awareness and understanding of marine litter to effectively mitigate this global threat.

SDG Target: 14.1

[READ MORE](#)

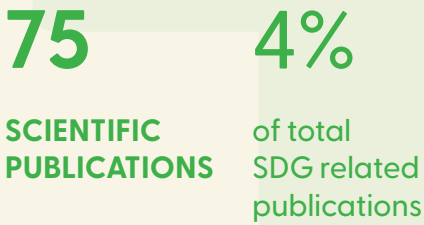
GOAL 15

LIFE ON LAND

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

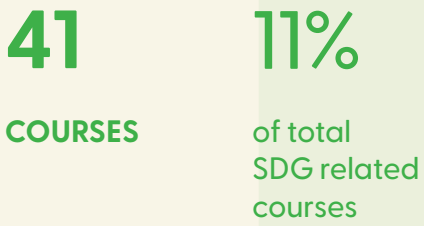
Indicators

SDG related Research Outputs



43 FCT	7 FCSH	3 SBE	3 NSL
2 IHMT	16 NIMS	1 ITQB	

SDG related Courses



14 FCT	23 SBE	3 NSL	1 ITQB
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Highlight!

NOVA FCSH
Maria José Roxo and Pedro Casimiro

LIFE DESERT-ADAPT

The Mediterranean is the region in Europe most susceptible to soil degradation and desertification. Life project DESERT ADAPT tested adaptive land management strategies specifically designed to combat aridification and desertification of land in 9 case studies, in Mediterranean regional areas at risk of desertification (Portugal, Spain and Italy), covering an area of 1016 ha. 53 adaptation measures were implemented. 93391 trees, shrubs and plants of 132 species were planted promoting 180 tonnes of CO2 sequestered annually in average, avoiding 34-66% in soil erosion, keeping 52-67% of Carbon and 53-77% of Nitrogen and promoting more than 30% of soil biodiversity, biomass and microbial functionality.

SDG Target: 15.3

[READ MORE](#)

Relevant Publication

NOVA FCT
Maria Rosa Paiva

Grand challenges in entomology: Priorities for action in the coming decades

Entomology has a pivotal role in understanding and addressing anthropogenic environmental changes in ecosystems. By engaging 189 members of the Royal Entomological Society, 61 priority challenges are identified through a democratic process. These challenges span four themes: fundamental research, anthropogenic impacts and conservation, ecosystem services and disservices, and collaboration and training. Key contributions include training taxonomists, creation of a global insect monitoring network and integrating insects into food supply chains. Findings highlight entomology's potential to enhance ecosystem sustainability, improve agricultural practices, manage vector-borne diseases and inspire technological advancements, thereby supporting the sustainable use of terrestrial ecosystems.

SDG Target: 15.5

[READ MORE](#)

GOAL 16

PEACE, JUSTICE AND STRONG INSTITUTIONS

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

Indicators

SDG related Research Outputs



14 FCT	70 FCSH	3 SBE	4 NMS
55 NSL	7 IHMT	10 NIMS	4 ENSP

SDG related Courses



6 FCT	3 FCSH	39 SBE	18 NSL
4 NIMS			



Highlight!

NOVA SBE & NMS

Estoril Conferences

Co-organized and hosted by Nova SBE and NOVA Medical School, 2023 edition carried humanity to the stage of life, by giving voice to those who transform it into impactful action. A 2-days journey addressed the major global concerns the world is facing regarding the planet, people, health, peace, and policy, by encouraging a discussion and a call-to-action among world leaders on the most important issues facing all generations, with a particular focus on the younger generations.

Our inability to lead open and inclusive dialogues in some parts of the world are driving increasing fragmentation, fueling an atmosphere of distrust while creating a safe place for radical and extremist movements to rise. How can we find ways of understanding, forgiving and helping each other in the middle of conflict?

SDG Target: 16.1

[READ MORE](#)

Relevant Publication

NSL

Fabrizio Esposito and Lucila de Almeida

EU Contract Case Law, January–March 2023

An overview of the most relevant cases decided by the Court of Justice of the European Union concerning contract law is provided. The period covered refers to January 2023 until March 2023. Out of a total of 265 judgments decided in this period, 57 had a contract law dimension.

SDG Target: 16.3

[READ MORE](#)

A glance on sustainability agenda in 2024

In 2023, NOVA sustainability has been consolidating working groups activities, deepen tasks and promoting engagement processes with the schools to advance on a diverse range of sustainability issues. Along 2024, the governance model of sustainability based, primarily in the Academic and Operational councils of NOVA for the Globe platform and on dedicated thematic working groups has been consolidated through regular meetings and objectives. NOVA is devoting much attention on how SDG targets have been accomplished and delivered, as the 2023 Sustainability Facts & Figures report already shows, being necessary to enlarge this lens in 2024.

A transversal project covering different components of NOVA campus infrastructures and services started in 2023, co-funded by Fundo Ambiental of Ministry of Environment and Energy, to develop the

technical basis to make NOVA aware how to achieve a net-zero goal and how to become more climate resilient. The heavy work is to be developed during 2024. Since this roadmap for NOVA climate neutrality and resilient convers aspects as energy, mobility, waste, buildings, public procurement among others, a wide set of NOVA people has been involved in tasks as monitoring, planning and prospective analysis. A new information system on sustainability data under the responsibility of each school is a cornerstone, allowing data gathering and management to report and to build useful indicators to management decisions. Moreover, the project has the potential to engage with education and research activities. At the end, a set of objectives, cost-effective options and investment bulk to achieve net zero goal, will convey a strategic plan for the future.

NOVA’s missions

Regarding Education for Sustainability, a common effort with the vice-Rectory for Education, the new course Sustainability for All to be offered to all undergraduate and master students, will advance in 2024 for implementation supported by professors from all NOVA schools. On Research and Sustainability, the Impact Narratives initiative deserves to be underlined as it raises awareness to NOVA researchers to the importance of the impact of their research and how they can tell their stories. Moreover, the NOVA Interdisciplinary Research Community on Sustainable Energy Systems promotes the crossing research to deal with complex problems of the energy transition. Both these initiatives will be developed together with the vice-Rectory for Research.

Organizational sustainability

NOVA dedicated working groups - NOVA ZeroWaste, NOVA Green Labs - advances to consolidated tasks and responsibilities, on monitoring the campus activities’ performance, on engaging with stakeholders to adopt sustainable practices and on launching certification processes. The dedication and efforts of NOVA schools’ representatives anticipates the need to tackle explicit responsibilities on sustainability issues that are currently absent, in a learning-by-doing process, which is visible along 2024 and impactful in all schools.

Together with the pro-rector for social innovation, two key aspects are being focusing during 2024: (i) commuting, a very important scope 3 emissions source, based on data survey to envisage solutions to be discussed with local mobility stakeholders; (ii) sustainable and healthy food, a cornerstone of sustainability in a community of around 30 000 people, to get co-funding to assess NOVA food system and propose options for its transformation.

Finally, NOVA University is increasing its presence in international networks with a sustainability scope, underlining the EUTOPIA alliance, the MetaRedS by Universia, and the newest SDSN Portugal, chaired by NOVA.



Colégio Almada Negreiros, Campolide Campus

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– ENSP NOVA

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