

# University of Zagreb Faculty of Forestry and Wood Technology

## DEVELOPMENT STRATEGY 2025 - 2029

Zagreb, 30 January 2025











#### Foreword

Following its mission and vision based on strategic and other documents relevant to science, higher education and technology transfer, while respecting international standards of higher education and science, the University of Zagreb, Faculty of Forestry and Wood Technology, has defined its educational, scientific and professional goals in accordance with the interests of the forestry and wood technology profession. The basic prerequisite for the successful achievement of these goals is the activation of all resources of the Faculty of Forestry and Wood Technology, while maintaining a high level of enthusiasm and motivation of employees to accept their share of responsibility and direct their intellectual abilities and activities towards prosperous goals.

The Development Strategy 2025-2029 is based on the rich history of the Faculty, during which higher education in the field of forestry was continuously maintained for more than 125 years within the University of Zagreb, and higher education in the field of wood technology for more than 75 years. Thanks to this rich tradition and the progress made in last twenty years, the Faculty of Forestry and Wood Technology is ready to meet the challenges of the future and can plan strategic guidelines in accordance with all guidelines and standards of the European Higher Education and Research Area.

Human and material resources, students, study programmes, quality of education and scientific research, international and inter-institutional cooperation, financial stability, quality system and a number of other influential factors have ensured the leading role of the Faculty in the field of forestry and wood technology in the broader region. With timely recognition of the challenges of modern scientific and professional development, it is necessary to base strategic development on very demanding goals, the realization of which will ensure the consolidation of the leading role in the development of the field of forestry and wood technology, along with the positioning at the top of the constituents of the University of Zagreb, and the internationalization and recognition in the European framework.

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#### Introduction

The scientific and educational work of the Faculty of Forestry and Wood Technology belongs to the area of biotechnical sciences, the field of forestry and the field of wood technology. The Faculty of Forestry and Wood Technology is an internationally recognized institution in the education of highly qualified staff for the needs of forestry, urban forestry, nature conservation, environmental protection, wildlife management, wood processing and product manufacturing, as well as furniture production. The Faculty is a place of continuous education and the formation of intellectuals of a wide range of knowledge who are recognized in their activities, not only in the profession, but also in the social life of the Republic of Croatia.

Modern forestry is a science, endeavour and art of forest management and associated land for the lasting benefit of the economy, society and the environment. It implies a balanced management of forest resources in order to optimize the yield of forest products, preserve plant and animal life, preserve water, air and soil, ensure the overall beneficial functions of forests and forest ecosystem services in both natural forests and urban forests and green infrastructure ecosystems.

Forests play a significant role in reducing the risk of natural disasters, including floods, droughts, landslides and other extreme events. Globally, forests mitigate climate change by sequestering carbon, contribute to the balance of oxygen, carbon dioxide and moisture in the air, and protect watersheds. Investing in forests and forestry is an investment in people and their livelihoods and future generations. At the same time, forest ecosystems are under increasing pressure due to climate change. In order to achieve the strategic goals of the United Nations' Sustainable Development Agenda and the prudent implementation of European Green Deal policies, the Faculty, following the tradition of Croatian forestry, promotes sustainable management of forest ecosystems as the only correct way to preserve a balanced approach to the multipurpose use of forests, in order for them to retain their overall beneficial functions in the future along with economic benefits. Urban forestry is becoming increasingly important in addressing climate challenges through the preservation of the environment in cities, the design of parks and green areas, in ecological monitoring, ecotourism, and the analysis and evaluation of landscapes, and with the management of protected natural and environmental areas, it is the backbone of sustainable development.

Wood technology is a science and profession that applies knowledge of natural and technical sciences for the purpose of producing products from a renewable natural resource – wood. The specialty of this scientific area and profession is that it deals with the development and design of new green products based on wood and wood-based materials, as well as the specific process and production technologies for their processing and processing appropriate to the requirements of biomaterials. In line with the European and national strategic frameworks, the Faculty actively supports the strengthening of competitiveness and innovation, digital and green transition, energy and resource efficiency and the strengthening of regional competitiveness and balanced regional development while increasing productivity and strengthening the resilience of wood processing and furniture production with regard to climate change.

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Forestry, wood processing, production of wood products and furniture production offer economic, developmental and social advantages and opportunities. They are a significant source of employment and economic prosperity in our country and in the world, but with a balanced approach, taking into account the multifunctional role of forests aimed at the function of sustainable development and environmentally efficient forest-based industries.

The intensive development of the Faculty in the last twenty years, during which there has been a significant increase in available workspaces, modernization of teaching and scientific research facilities, installation of state-of-the-art laboratory equipment and measuring instruments, has led to a reorganization of the Faculty's operations and management. Timely alignment with the legislative framework requires constant and very demanding changes in all of the Faculty's spheres of activity, especially in the funding systems, operations, employment, and accreditation. Frequent amendments to legal regulations that require continuous adjustment can only be managed by an educational institution with a modern management system and a well-developed quality system. The development guidelines of related scientific-research institutions within the European Union serve as a reference point for the development vision of the Faculty of Forestry and Wood Technology in the community and its full membership with eminent European and international higher education and scientific institutions.

Although the Faculty has always had a clear vision of its development throughout its rich history, new development challenges such as the European Qualifications Framework, the implementation of the Bologna Process, internationalization, research excellence, the development of the educational process quality system, financial sustainability and usefulness to the economy are elements that inevitably impose the need for a systematic analysis of the situation and the creation of future development guidelines that will ensure the prosperity of the Faculty at an enviable teaching, scientific-research and professional level. International educational and scientific-research cooperation is the basis for the future development of the Faculty of Forestry and Wood Technology. By providing support and incentives to the faculty and doctoral students when publishing scientific papers in journals with a high impact factor in accordance with the policy of open science, the Faculty continuously improves the quality and quantity of scientific productivity and scientific visibility, with the goal of enhancing international recognition and competitiveness of Faculty researchers in project applications and the transfer of knowledge and technology to the economy as well as the modernization of the teaching process. Based on years of experience in the implementation of professional projects and successful cooperation with the economy, the Faculty will further improve lifelong learning programmes and, by activating the capacities of the Faculty laboratories, expand the range of services it provides to the economy. Practical training programmes integrated into the teaching process during the last revision of study programmes enable students of the Faculty to get acquainted with modern technologies and connect with future employers. Advances in scientific productivity and professional activity enable continuous improvement of the teaching process, ensuring it aligns with evolving societal needs occurring in light of technological progr

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the challenges represented by climate change. Field teaching as an inseparable part of the educational process together with the necessary long-term research of forest ecosystems is based on exemplary management of the Faculty's educational-experimental forest sites. In order to ensure the financial sustainability of the Faculty, it is necessary to strengthen the existing capacities by long-term investments in scientific and educational infrastructure, taking into account the increase in the level of energy efficiency and the increase in revenues by implementing professional activities and projects with a more active participation of the constituents of the newly established Institute for Training and Wood Technology Research Centres.

The foundation for drafting this Development Strategy is a specific quality management system of the Faculty of Forestry and Wood Technology, which integrates the quality assurance system of the Faculty based on the Standards and guidelines for quality assurance in the European Higher Education Area (EHEA) with the application of ISO 9001 and ISO 14001 standards and within which a continuous analysis and improvement of the system is carried out through annual plans and reports on all segments of the quality system, along with periodic internal and external evaluations.

In accordance with its core strategic guidelines, as a full member of the European Higher Education Area, the Faculty will retain its leading role in the region, be recognized at the University and position itself as an internationally recognized research institution and a key factor in the transfer of technology and all segments of the development of the forestry and wood technology profession.



#### 1. Historical framework and current situation

The University of Zagreb, Faculty of Forestry and Wood Technology, is the only higher education institution in the Republic of Croatia in the field of forestry and wood technology, founded in 1898 as the fifth constituent of the University of Zagreb. On 20 October 1898, as part of the then Faculty of Philosophy (Mudroslovni fakultet) of the University of Zagreb, the Forestry Academy began to work, thereby granting university status to forestry education. Over the course of many decades, the Forestry Academy gradually developed into an independent, modern, recognized, respected and esteemed Faculty we know today, not only in Croatia but also within the broader European context. At the beginning of the work of the Forestry Academy, when the study programme lasted for three years and when the Forestry Academy was firmly attached to the Faculty of Philosophy, the Dean of the Faculty of Philosophy was at the same time the Dean of the Forestry Academy. With the transition from a three-year to a four-year programme in 1908, the Forestry Academy became autonomous and elected its heads from among the assembly of members of the teaching staff of the Forestry Academy, and on 31 August 1919, the Faculty of Economics and Forestry of the University of Zagreb was founded. In 1946, the Faculty of Economics and Forestry of the University of Zagreb changed its name to the Faculty of Agriculture and Forestry of the University of Zagreb. The educational process at the Forestry Department in 1947 was divided into two majors: Forest-cultivation major called "biological major" and Forest-industrial major called "technical major". The forest-industrial major marks the beginnings of today's Wood Technology Department of the Faculty, i.e., the beginning of higher education in the field of wood technology. The Forestry Department of the Faculty of Agriculture and Forestry of the University of Zagreb was divided into two departments as of year 1952/1953: the Department of Economy and Forestry and the Department of Wood Industry. Due to the increasingly intensive development of all economic branches, especially agriculture and forestry, there arose a growing need to establish separate faculties for agricultural and forestry education. From 1 January 1960, both former departments of the Faculty of Agriculture and Forestry of the University of Zagreb became independent faculties. Over the years, the curricula, the manner and conditions of taking the exam, the organization of the Faculty and the names of the departments, etc. have changed, and in the academic year 2005/2006, the 3+2 study model (three-year undergraduate study programme, two-year graduate study programme) and postgraduate doctoral and specialist studies with modern study programmes were introduced at the Faculty of Forestry of the University of Zagreb in accordance with the Bologna Process.

#### 1. Historical framework and current situation

The fundamental act defining the current organizational structure of the Faculty is the Statute, which, in its present form, was adopted by the Faculty Council of the University of Zagreb Faculty of Forestry and Wood Technology at its 7<sup>th</sup> regular session of the 2022/23 academic year, held on 27 April 2023, pursuant to the Act on Higher Education and Scientific Activity (Official Gazette 119/2022).

The Faculty is a public higher education institution and a scientific-teaching constituent of the University of Zagreb, whit a legal status of an institution. The founder of the Faculty is the University of Zagreb. The seat of the Faculty is in Zagreb, Svetošimunska cesta 23. By the decision of the Ministry of Science and Technology of the Republic of Croatia from September 2002, the Faculty was entered in the Register of Higher Education Institutions under the ordinal number 0068, and by the decision of the Commercial Court in Zagreb from July 1997 in the court register under the registration number (MBS) 080159374.

The core activities of the Faculty are the organization and performance of university undergraduate, professional undergraduate, university graduate, postgraduate doctoral and postgraduate specialist study programmes, along with scientific research and professional work in the area of biotechnical sciences, the scientific field of forestry and the scientific field of wood technology. The Faculty is also registered to organize and host scientific and professional conferences, publishing scientific and professional publications as well as other forms of educational, scientific and professional work, and for consulting in the field of forestry, urban forestry, nature conservation, environmental protection, wildlife management, wood technology and wood product design.

In accordance with the 2023 Statute, the organizational units of the Faculty are as follows: Institutes, the Dean's Office, the Faculty Secretary's Office, the Public Procurement Office, the Accounting and Financial Service and the Library and Digital Repository.

The Faculty consists of two departments: the Department of Forestry and the Department of Wood Technology, within which six institutes are established. There are 31 laboratories operating within the institutes. Within the Institute of Training and Forest Research Centres there are five training and forest research centres (hereinafter referred to by the Croatian abbreviation NPŠO) located in the most important climatic and zonal forest communities of the Republic of Croatia: NPŠO Lipovljani (including the state-owned open hunting ground Opeke II/39), NPŠO Zalesina, NPŠO Zagreb, NPŠO Velika and NPŠO Rab (including the state-owned open hunting ground Kalifront VIII/6).



#### 2. Situation analysis

#### **STRENGHTS**

- profession based on rich heritage and tradition
- modern study programmes of all academic levels
- appropriate teaching and research facilities with special emphasis on training and forest research centres
- quality of scientific and teaching staff
- internationalization of studies with teaching in the English language
- inclusion of study programmes in the database of engineering programmes of the association Engineers Europe (European Engineering Education Database)
- o active student involvement in research and professional work
- o long-term publishing of scientific journals with high impact factors
- o integrated quality system based on ESG standards and ISO 9001 and ISO 14001

#### **OPPORTUNITIES**

- development of international scientific and teaching centres within the training and forest research centres (NPŠO) and training and wood technology research centres (NPDTO)
- use of funds for scientific-research and educational work and for investments in infrastructure
- education and research based on sustainable development, ecosystem resilience, renewable resources and the circular economy
- modernization of study programmes for the needs of the labour market and entry in the register of occupational standards
- o designing and offering attractive lifelong learning programmes to the market
- cooperation with the economy and competence centres through scientific and professional projects and doctoral studies
- o increasing the number of assistants and senior assistants through new projects
- use of advanced technology capabilities and virtual learning environments

#### **WEAKNESESS**

- o low pass rate at undergraduate study programmes
- unsatisfactory international mobility of teaching staff, associates, students and non-teaching staff
- no system has been developed to support the development of pedagogical and didactic competences of teaching staff
- o complex business processes with high administrative workload for the staff
- inadequate availability of literature for study programme courses authored by the course holders
- lack of alumni club and insufficient feedback on graduate employability

#### **THREATS**

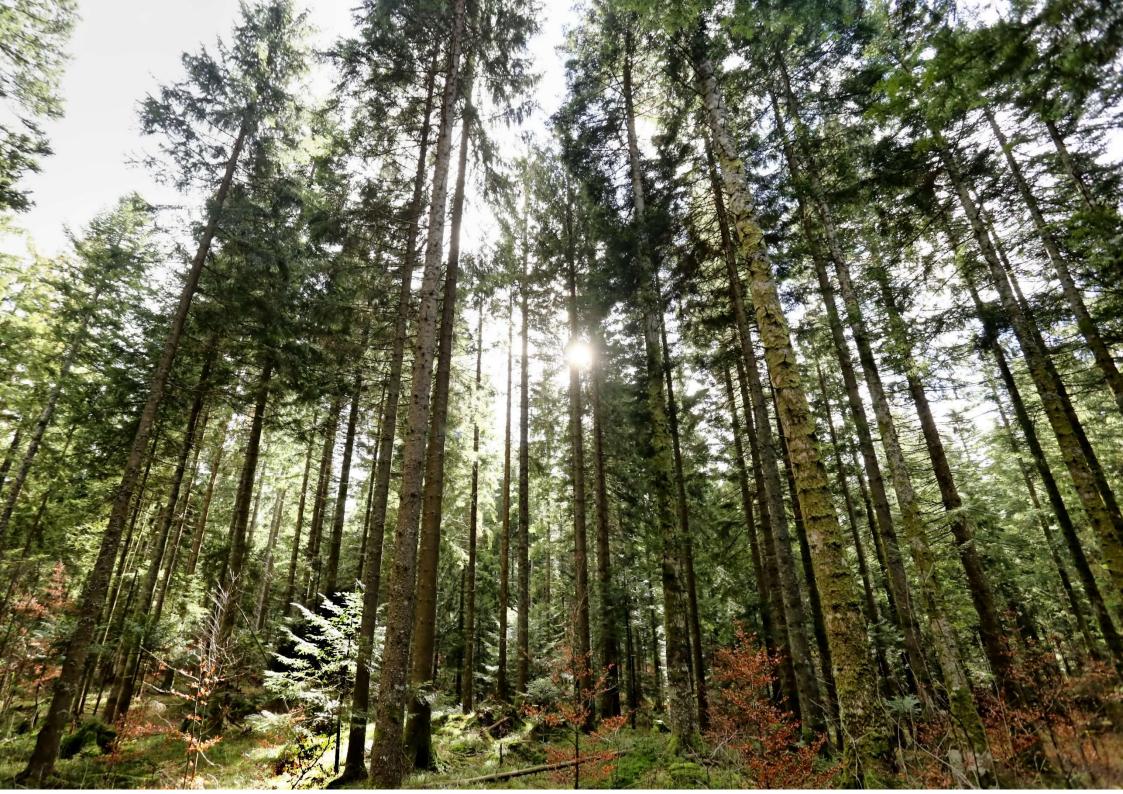
- the impact of negative demographic trends and the constant increase in the number of study programmes in the Republic of Croatia to enrolment quotas of the Faculty
- uncertainty of long-term satisfactory budgetary financing of material costs of the Faculty and national financing of scientific and research activities
- insufficient entry competencies and/or insufficient motivation of applicants displayed for the study
- preference for employment of other professions in the forestry and wood sector
- o lack of interest among qualified professionals for employment
- global challenges with negative consequences for the forestry and wood technology sectors



#### 3. Baseline for the development of the Strategy

The following documents were used as the foundation and reference in the development of this Strategy:

- Act on Higher Education and Scientific Activity (Official Gazette 119/2022)
- Act on Quality Assurance in Science and Higher Education (Official Gazette 151/2022)
- Act on the Croatian Qualifications Framework (Official Gazette 22/13, 41/16, 64/18, 47/20, 20/21)
- Catalogue of Goals and Indicators (Ministry of Science and Education, 2023)
- Standards and guidelines for quality assurance in the European Higher Education Area (EHEA) (2015)
- National Development Strategy of the Republic of Croatia 2030
- Smart Specialization Strategy for the period until 2029
- National Plan for the Development of the Education System for the period 2021-2027
- National Recovery and Resilience Plan 2021- 2026 (NPOO)
- The 2030 Agenda for Sustainable Development (UN, 2015)
- National Plan for the Development of Wood Processing and Furniture Production of the Republic of Croatia for the period from 2022 to 2030 (2022)
- Strategic Guidelines for Scientific and Research Activity at the University of Zagreb 2023-2026
- Strategic Guidelines for the Digital Transformation of the University of Zagreb until 2032.
- Strategic Development Plan of the Faculty of Forestry and Wood Technology (2018 2023)
- Strategy of Scientific and Research Activity of the Faculty of Forestry and Wood Technology, University of Zagreb 2021-2025.
- Self-Evaluation of the Faculty of Forestry (2019)
- Manual for Quality Management of the Faculty of Forestry and Wood Technology (2022)
- Principles of Integrated Systems of the Faculty of Forestry and Wood Technology (2023)



#### 4. Mission, Vision, Quality and Environmental Policy

#### **MISSION**

The University of Zagreb, Faculty of Forestry and Wood Technology, is committed to achieving excellence in education and research in forestry, urban forestry, nature conservation, environmental protection, wildlife management, and wood technology. The mission of the Faculty is to achieve excellence in higher education, scientific research, provision of professional services and active cooperation with the economy, through the implementation of the quality and environmental management system, in order to transfer the acquired knowledge and contribute to the sustainable development and well-being of society. As the oldest and only national institution in its field, the Faculty is committed to the creation and dissemination of knowledge based on modern scientific knowledge, public action in the interest of science and the profession in the field of forestry and wood technology, as well as the promotion of principles of morality, ethics and tolerance, ensuring that students are educated to become participants in a modern democratic and multicultural society. The core purpose of the Faculty is the creation, analysis and exchange of knowledge through educational, research and professional activities. We place special emphasis on students, providing them with programmes tailored to the needs of the economy, making them experts and responsible members of society. In cooperation with the economic and public sectors, both in Croatia and abroad, the Faculty actively contributes to the creation of knowledge and development of technologies in biotechnical sciences, especially in forestry, urban forestry, wood technology and wood products design.

#### **VISION**

The University of Zagreb, Faculty of Forestry and Wood Technology, is an active constituent of the European Higher Education and Research Area, which educates internationally recognized quality and competent professionals and conducts internationally recognized scientific and professional research. The task of the Faculty is the creation, analysis and exchange of knowledge through educational, research and professional activities. The vision of the University of Zagreb, Faculty of Forestry and Wood Technology, is to become a leading higher education, scientific and professional institution in the fields of forestry and wood technology within the broader regional context. By creating and applying new scientific knowledge, permanent development will be ensured in order to provide students of the Faculty's educational programmes with knowledge in accordance with the needs of modern society, grounded in the principles of sustainable development.

#### 4. Mission, Vision, Quality and Environmental Policy

#### **QUALITY AND ENVIRONMENTAL POLICY**

The University of Zagreb, Faculty of Forestry and Wood Technology, conducts higher education, scientific research and professional work, while adhering to national and international standards, guided by the benefits of the forestry and wood technology profession. Quality and environmental management is aimed at achieving excellence in educational, scientific-research and professional activities through the involvement of all members of the university community in the continuous improvement of quality and the creation of a quality culture.

The Faculty implements and improves the quality and environmental management system in all segments of its activities, which is reflected in:

- Mission, Vision and Development Strategy of the Faculty
- organization of a quality management system based on continuous improvement of all processes
- ensuring the adequacy of the policy for the internal and external context of the Faculty while meeting the expectations and needs of all stakeholders
- developing a quality culture by involving all stakeholders at all levels in quality assurance processes
- · developing a quality culture in which all internal stakeholders take responsibility for quality
- respect and promotion of academic integrity and freedoms, prevention of all types of intolerance and discrimination against students or employees and adherence to the principles of academic integrity by all members of the university community, as defined by the Code of Ethics of the University of Zagreb
- implementation, regular monitoring and revision of the Quality and Environmental Policy and objectives in accordance with the standards HRN EN ISO 9001,
   HRN EN ISO 14001 and EHEA.

The Faculty is committed to continuously meeting European standards and guidelines in the field of higher education through its quality and environmental management system. The Faculty is firmly committed to environmental protection as an important aspect of its activities. It continuously improves the integrated environmental and quality management system in order to reduce the ecological footprint, promote sustainable development and comply with legal obligations. The Faculty integrates the principles of environmental protection and quality improvement into all aspects of work, encouraging the awareness and responsibility of all members of the university community for the preservation of natural resources and the environment for future generations. Students are at the centre of the quality system, and all activities are aimed at recognizing and meeting their expectations and needs. The Faculty actively encourages scientific-research work to enable the transfer of modern scientific knowledge to the economy and society as a whole.



#### 5. Strategic goals

Strategic goals represent long-term development guidelines and aspirations expressed in a broader context, and include the most important strategic areas of the Faculty's activities. For the purpose of drafting this Strategy, the activities of the Faculty were aligned with the national strategic framework and four (4) strategic goals were implemented in accordance with the Catalogue of Goals and Indicators (MZO, 2023): 1. Enhancing scientific excellence, 2. Strengthening cooperation with the economy and the development of national and regional identity and culture, 3. Increasing the relevance, quality and efficiency of studies and 4. Strengthening social responsibility.

#### 5.1. Enhancing scientific excellence

Enhancing scientific excellence implies increasing the quality and impact of scientific papers at the Faculty level, increasing the volume of competitive national and European scientific projects, increasing the exposure and visibility of the scientific work of the public higher education institution at the international level, and ensuring the preconditions and resources necessary for the implementation of excellent science.

#### 5.2. Strengthening cooperation with the economy and the development of national and regional identity and culture

Strengthening cooperation with the economy and the development of national and regional identity and culture implies strengthening the orientation towards applied research, encouraging the management of intellectual property, the commercialization of scientific work and results, overcoming the gap between the research and business sectors and the implementation of activities that contribute to the development of national and regional identity and culture.

#### 5.3. Increasing the relevance, quality and efficiency of studies

Increasing the relevance, quality and efficiency of studies implies improving the efficiency of study programme performance and their adjustment in accordance with the enrolment interests and needs of the labour market, including the creation of new economies and raising the institution's attractiveness at the international level.

#### 5.4. Strengthening social responsibility

Strengthening social responsibility implies enhancing the Faculty's engagement in solving social challenges, including topics of national interest, and raising the level of overall efficiency of the Faculty's operations.

In the long term, the Faculty of Forestry and Wood Technology must strengthen the scientific and research potential and innovation activity in the national and international environment that maintains, creates and gives added value to the development of knowledge and technologies. The Faculty emphasizes the creation of a new scientific-research profile by increasing the quality of scientific-research activities. Quality scientific research work will be ensured through an increased number of research projects, creating an active and fertile environment for the increase of research activities, and providing financial and organizational frameworks for increasing research productivity at the Faculty. The Strategy will promote the development of scientific research across both departments and all institutes, fostering an environment that encourages individuals and research teams to conduct research and cooperation with various institutions and the economy with the application of new knowledge on the sustainable development in forestry, wood technology, and society at large. The Faculty strives to be nationally and internationally competitive in its areas of core and applied scientific research.

One of the main goals of the Faculty is to activate all its scientific and research resources through the transfer of knowledge and technologies, which implies the conversion of its obtained results into new or improved products, services or processes that have a certain market value. Furthermore, the research activities of the Faculty can create knowledge and technology that create high quality jobs, more successful companies, and the production of better-quality goods and services, thus playing an important role for the economy and society as a whole. With the accession of the Republic of Croatia to full membership of the European Union, significant financial resources from European funds have become available to the Faculty through cooperation with other institutions and the economy in the application for competitive projects.

The goal is to strengthen scientific-research activities in excellence and innovation, and to increase the visibility, recognition and competitiveness in the national and international scientific and research environment by encouraging the implementation of open science policy, and to be recognized as a leading institution of higher education and science in the field of forestry, wood technology and related sciences in the wider regional context, as well as a highly positioned institution within the University of Zagreb.

Strategic goal	Specific goal/Institutional goal	Result indicator	Description
	1.1. Increasing the Faculty's participation in competitive project funding	Number of successful project applications to competitive funding sources	The indicator measures the number of successful project applications for grants, submitted to competitive sources of funding that primarily finance scientific activities (not professional). Funding sources include national (NPOO, ESIF, HRZZ, etc.) and international grant competitions (ERC/Horizon Europe, Interreg, Erasmus, ESA, NSF USA, etc.).  Successful applications are defined as: (a) contracted for funding or (b) positively evaluated applications proposed for funding but not funded due to insufficient funds (reserve list).
		Value of competitive scientific projects	The achievement of the indicators includes projects for which the grant award process has been successfully completed (funding decision or an equivalent document). Funding sources include national (NPOO, ESIF, HRZZ, etc.) and international grant competitions (ERC/Horizon Europe, NSF USA, etc.).
Enhancing     scientific excellence		Number of scientific papers in SCOPUS and WoS, A1 journals	The total number of scientific papers published at the Faculty level, which were published in journals indexed in SCOPUS and WoS databases.
	1.2. Increasing the number and quality of scientific papers by co-financing the cost of open access publication	Number of scientific papers published in open access in high-impact journals (Q1 and Q2).	The total annual number of published open access scientific papers at the Faculty level, in journals with high impact factor (Q1 and Q2 quartile) indexed in WoS and the share of these papers in the total number of papers published in journals indexed in the WoS database.
	1.3. Strengthening international scientific cooperation and scientific activity	Number of successful project applications in cooperation with a foreign partner	The indicator tracks the number of successful project applications to competitive sources of funding of the Faculty, in cooperation with foreign partners. Successful applications are defined as: (a) contracted for funding or (b) positively evaluated applications proposed for funding but not funded due to insufficient funds (reserve list).
		Number of cooperation with foreign partners	Collaborations that are included in the achievement of indicators include at least one employee from the Faculty and at least one employee engaged in a public higher education institution, a public scientific institute or in a company based outside the Republic of Croatia. The term cooperation may, for example, refer to the publication of at least five joint publications, an agreed upon new joint

		research and development project, or other formal agreements and contracts, memoranda of understanding and other forms of scientific cooperation involving the Faculty or its employees.
	Number of scientists involved in scientific mobility activities	Number of scientists engaged at the Faculty, who are involved in international mobility activities. The activity of international mobility is defined as a visit of scientists to a scientific organization in another country for at least one month, in order to conduct research activities as visiting scientists. The indicator does not include attending events such as meetings, workshops and conferences.
1.4. Strengthening human resources through participation in training and international mobility	Number of (co)funded participations of teaching and non-teaching staff in international mobility.	Total annual number of (co)funded participations of teaching and non-teaching staff in international mobility.
1.5. Strengthening human resources for scientific research	Number of scientists who have obtained a postgraduate qualification or completed postdoctoral training outside their home Faculty	Total number of scientists who have obtained a postgraduate qualification or completed postdoctoral training outside the institution of their employment.
	Number of completed doctorates (of which: doctorates of international doctoral students)	Total number of completed doctorates of scientists engaged at the Faculty, within the contractual period and the number of foreign doctoral students who complete their doctorate at the Faculty.
	Number of scientists employed from earmarked/internal funds	Total number of scientists employed at the Faculty from earmarked/internal funds.  A scientist is a person with an academic degree of doctor of science or master of science, or a person enrolled in a doctoral study programme who actively participates in the implementation of research.
1.6. Strengthening researcher's scientific-research competences through the organization of workshops	Number of participants and workshops for the development of scientific-research competencies.	Total annual number of participants and organized workshops for the development of scientific-research competencies.

1.7. Strengthening human resources of professional services	Number of attended and held trainings in order to strengthen the potential of professional services	The number of trainings attended by employees of professional services, as well as the number of trainings organized for the purpose of strengthening the capacity of the Faculty for the implementation of scientific and professional projects.
	Number of project applications realized in cooperation with the professional services of the Faculty	Number of project applications of the Faculty for which professional services were consulted. Existence of an internal procedure for the application of project proposals for the purpose of strengthening cooperation with professional services and keeping records of project applications.
1.8. Improvement of research infrastructure	Total investment of the Faculty in research equipment from own funds	Total procurement value of research and innovation equipment procured from own resources. The achievement of the indicator does not include investment made through grants or in-kind donations from other entities. R&D equipment includes all apparatus, tools and devices used directly to perform R&D activities. Equipment does not include, for example, chemical substances or other consumables used to conduct experiments or other research activities.
	Total investment of the Faculty in research infrastructure from own funds	Total value of investment in research infrastructure from earmarked or own funds. The achievement of the indicator does not include investment in infrastructure made through grants or in-kind donations from other entities. Investments in research infrastructure may relate to projects for the construction of new facilities or the improvement of existing research infrastructure within their field of work or for the purpose of new research directions.
1.9. Contribution to open science	Number of measures implemented and tools introduced to encourage open science policy	Number of concrete measures taken by the Faculty and tools introduced to encourage and support the open science policy. This may include activities such as adopting open science guidelines, organizing educational workshops on open science, developing open research platforms or tools, supporting researchers in sharing data, and participating in initiatives that promote open science.
1.10. Strengthening the interdisciplinarity of scientific work	Number of successful project applications for interdisciplinary scientific projects	Number of successful project applications of the Faculty for grants supporting the implementation of scientific projects involving scientists from at least two different scientific fields. Successful applications are defined as: (a) contracted for funding or (b) positively evaluated applications proposed for funding, but not funded due to insufficient funds (reserve list).

	Number of science books	The total number of science books, both authored and edited, published at the Faculty level, that have received at least two scientific reviews. A science both a non-periodic edition that contains scientific knowledge from the scientific teaching discipline for which it was written.
1.11. Promoting open science policy in Faculty publications	Total annual amount of funds/number of publications per year.	The total amount of funds for co-funding publications and the annual numb publications to which the Faculty is (co)publisher.

## 5.2 Strategic goal: Strengthening cooperation with the economy and the development of national and regional identity and culture

As a member of the European Union, the Republic of Croatia has become a beneficiary of significant financial resources from European funds, which enable increasing cooperation with the economy through participation in projects in various tenders related to increasing the development of new products resulting from research, development and innovation (RDI) activities, Proof of Concept (PoC), increasing the level of development of new technologies, products and processes by conducting collaborative applied research (targeted scientific research TSR), strengthening strategic partnerships for innovation in the process of industrial transition (SPIN), energy and resource efficiency, and more. Over the past few years, through the implementation of various project activities funded by EU calls, the laboratories of the Faculty have been equipped with state-of-the-art scientific equipment in all areas of wood technology, thus achieving a target high level of competence in applying for different funds. The Forestry Department traditionally has a well-developed cooperation with the economy and generates significant financial resources by implementing professional projects with stakeholders in the field of forestry, urban forestry, nature conservation and environmental protection. In light of the challenges of forest ecosystems management posed by climate change, cooperation with the economy is expected to intensify by increasing the number of project applications in partnership with stakeholders from different economic sectors.

One of the main goals of the Faculty regarding cooperation with the economy is to increase the active participation of its researchers in the application of competitive project proposals under various EU funding calls The Faculty has two accredited laboratories and this practice should continue with the implementation of the unified accreditation model for the Faculty Laboratories with a continuous increase in accredited methods. The Faculty encourages the implementation of applied scientific activities through the transfer of knowledge and technologies, and by applying and implementing projects, strengthens cooperation with the economy in order to increase the number of professional projects. Therefore, as a knowledge dissemination organization and project partner, the Faculty has become recognized by the economy as a leading professional institution in the fields of forestry, urban forestry, nature conservation, environmental protection, wood technology, and wood product design, as well as related fields within the biotechnical area in a broader regional context. Given the number and high level of laboratory equipment, the Faculty, in cooperation with the economy, successfully participates in the applications and implementation of projects, whereby additional value is created by applied research and the increase of scientific staff participating in project activities. The long-term goal of the Faculty is to further increase the number of professional projects with the economy through applications to EU funding calls, which will provide financial resources for continued investment in scientific-research and professional infrastructure.

## 5.2 Strategic goal: Strengthening cooperation with the economy and the development of national and regional identity and culture

Strategic goal	Specific goal/Institutional goal	Result indicator	Description
	2.1. Encouraging the implementation of applied scientific activities, including cooperation projects with the economy	Number of successful project applications for applied research projects (of which: collaborative projects with the economy or in culture and education)	Number of successful project applications of the Faculty, for obtaining grants for the implementation of applied research, including collaborative projects in cooperation with economic operators or in culture and education. Applications for competitive sources of funding that primarily finance scientific activities (not professional) are included in the achievement of the indicators. Funding sources include national (NPOO, ESIF, HRZZ, etc.) and international grant competitions (ERC/Horizon Europe, Interreg, Erasmus, ESA, etc.).
			Successful applications are defined as: (a) contracted for funding or (b) positively evaluated applications proposed for funding, but not funded due to insufficient funds (reserve list).
2. Strengthening			As part of the monitoring of indicators, project applications for collaboration with partners from the economy will be tracked separately as a disaggregated measure.
cooperation with the economy and the development of national and regional identity and culture		Number of formal cooperation with economic operators and culture and education institutions	Number of cooperation between the Faculty and partners from the sector of economy, culture and education. Collaborations that are included in the achievement of indicators include at least one employee of the Faculty and at least one representative from the sector of economy or culture and education. The term cooperation may, for example, refer to joint publications, an internship, an agreed upon new joint research and development project, and other formal agreements and contracts, memoranda of understanding and other forms of scientific cooperation involving the Faculty or its employees.
	2.2. Strengthening cooperation with the economy in order to increase the number of professional projects	Number of realized collaborations with the economy, competence centres and state institutions	Number of contracted collaborations with the economy, competence centres and state institutions for the purpose of application, implementation and realization of professional projects.

## 5.2 Strategic goal: Strengthening cooperation with the economy and the development of national and regional identity and culture

	2.3. Improving institutional management of intellectual property	Number of patent applications	Number of patent applications filed based on the results of the Faculty's R&D projects.
		Number of other forms of intellectual property	The indicator refers to other forms of intellectual property (other than patents) such as trademark, industrial design protection, geographical indications, designations of origin, protected plant varieties, licenses, etc., in accordance with applicable legal frameworks.
		Number of initiated technology and knowledge transfer projects	Number of initiated projects for the transfer of research results for the purpose of their further development and/or use in the development and commercialization of new products (goods or services). Research results may be transferred in the form of signed research and development agreements, licensing agreements, or other forms of technology transfer or commercialization agreements. The achievement of the indicators also includes the establishment of start-up, spin-off and spin-out companies on the basis of which the technology is intended to be further developed and commercialized.
	2.4. Improvement of the provision of scientific, research, or technological services in the free market, including services for the development of culture	Number of contracted projects to provide services to the economy and public bodies in the development of culture and education	Number of contracted projects at the Faculty providing services to economic and other public entities in the development of culture and education. The indicator refers to projects, which may include contracted research, the production of publications, analyses and studies, services rendered to various economic and other entities.
	and education	Value of projects for services to the economy and public bodies in the development of culture and education	Number of contracted projects of services provided to economic and other entities in the development of culture and education. The indicator refers to projects, which may include contracted research, the production of publications, analyses and studies, services rendered to various economic and other entities.
	2.5. Introduction of the unified accreditation model for the Faculty Laboratories	Number of accredited methods per year.	Total number of accredited laboratory methods.

The teaching activity of the Faculty of Forestry and Wood Technology, as the only higher education institution in the Republic of Croatia that educates experts in the fields of forestry and wood technology, is carried out through study programmes of all levels, from professional study, through university undergraduate studies, graduate studies and specialist and doctoral studies. The study programmes include forestry, urban forestry, nature and environmental protection, wood technology, wood technology processes and the design of wood products, with specialist orientations and the possibility of upgrading educational competencies through scientific research at the doctoral study. All university graduate study programmes of the Faculty are included in the list of engineering study programmes in the Engineers Europe European Engineering Education Database (EEED list), which enables future engineers to acquire EUR ING 2.0 certificates as a certificate of possession of engineering competences on the European labour market. Modernisation of study programmes with periodic audits is regularly carried out.

In the implementation of study programmes, the aim is to connect the educational with research and economic systems, taking into account the relevance of studies in the professional sense and by providing additional value that will contribute to the development of the economy and society. In the long-term planning of increasing the quality and efficiency of studies, effective cooperation with economic entities is necessary through the implementation of complex fieldwork classes and practical training that lead to the strengthening of student competencies, the review of current needs and knowledge on the labour market, and greater employability of students upon completion of the Faculty's studies. In addition to the participation of foreign teaching staff, associates and other experts in teaching, international cooperation and networking of all stakeholders is encouraged. Faculty teaching staff and associates participate in international cooperation and are appointed as lecturers at foreign faculties and in the framework of international scientific consultations and workshops. Although the mobility of the teaching staff, associates and non-teaching staff is constantly increasing, it is still not at a satisfactory level due to limited financial resources.

The goal is to continue to take into account the quality of the teaching process, the available human and spatial resources for teaching all forms of teaching, while increasing the recognition of qualifications and employability and strengthening communication between students and members of the teaching staff, as well as the popularization of science and the profession. Additionally, one of the goals is to encourage students to continue and complete their studies through the Student Mentorship Program based on systematic provision of peer support and by encouraging students to prepare for the state graduation exam (matura) as an incentive for future students to easily master the material of the first years of undergraduate studies of the Faculty.

Strategic goal	Specific goal/Institutional goal	Result indicator	Description
	3.1. Improvement of study programmes	Number of innovative methods introduced	Number of innovative study methods introduced at the Faculty. The innovative methods include activities aimed at the innovation of the educational process and knowledge acquisition methods, which include the use of modern methods and technologies in teaching, project-based learning, active participation in the writing of scientific and professional papers, practical training with economic operators and public entities, the establishment of student incubators, the design, writing and implementation of joint projects with the teaching staff, the introduction of digital tools for knowledge testing, the establishment of student entrepreneurial centres for the development of entrepreneurial ideas, etc.
3. Increasing the relevance, quality and efficiency of studies		Share of the standard of employed teaching staff and associates per study programme in the total standard of accredited graduate and undergraduate studies	Share of the total standard of employed teaching staff and associates per individual accredited graduate and undergraduate study programme in the total standard of all employed teaching staff and associates. The indicator measures the average share of the standard of all employed teaching staff and associates belonging to a particular study programme. It is obtained by calculating the average standard per study programme and dividing it by the total standard of all employees.  Elective courses appearing in multiple study programmes are counted only once.
		Number of teaching staff who participated in educational programmes for the strengthening of teaching competences	Number of teaching staff members who have achieved 30 or more ECTS credits through participation in accredited educational programmes. Accredited programmes include educational programmes that have been approved by the Ministry of Science, Education and Youth or have passed the internal quality assurance system at the higher education institution in accordance with the regulations on lifelong learning, and are in accordance with the qualification standard in the Register of the Croatian Qualifications Framework.
		Number of students who achieved at least 5 ECTS credits through student practical training during their studies at the Faculty	Number of students who have achieved 5 or more ECTS credits through practical training.

3.2. Raising the quality at efficiency of the learning process and improving communication between students and teaching sta	student affairs and teaching improvement	Hosting popular-educational-scientific forums with visiting students, teachers and external stakeholders as a basis for better communication and connection of all stakeholders. Holding workshops for improved presentation skills of students using modern methods and tools, and increasing the readiness and independence of students in the design, planning and implementation of student research projects, as well as writing professional and scientific papers under the guidance of members of the teaching staff.
3.3. Improving attendance completion of studies	Share of students who enrolled in a higher year, within proper deadline, in the total number of students	The indicator refers to students who have achieved a sufficient number of ECTS credits within a proper deadline and enrolled in a higher year of study, i.e., the share of students who have acquired 55 or more ECTS credits, in relation to the total number of students, by passing the exam in the courses prescribed by the curriculum and who are included in the quota defined for the completion of studies.
	The ratio of the number of students who completed doctoral studies within the previous academic year to the number of students enrolled in doctoral studies in the previous six academic years	Successful study programme completion in doctoral studies. The achievement of the indicator is calculated by dividing the number of students who have completed doctoral studies within the previous academic year by the total number of students enrolled in doctoral studies in the period of the previous six academic years.  Completion of studies within the deadline shall mean completion within six years or less.
3.4. Improving study qua encouraging students to continue and complete the studies	participating in the Student	Number of first- and second-year undergraduate students of the Faculty who participated in the Student Mentoring Program based on the systematic provision of peer support.
Studies	Share of students participating in the preparation for the state graduation exam (matura)	Number of students who actively participated in the preparation for the state graduation exam (matura), as an incentive for future students to easily master the material of the first years of undergraduate studies of the Faculty.
3.5. Increasing internation higher education coopera		Number of dual study programmes accredited in accordance with the regulations governing the quality assurance of higher education and science in the Republic of Croatia.

		Number of members of the teaching staff participating in the international exchange	Number of members of the teaching staff of the Faculty who are involved in incoming and outgoing international mobility activities, which includes teaching. Teaching here includes holing of at least 5 class sessions.
		Number of students participating in the international exchange	Number of students of the Faculty who are involved in incoming and outgoing international mobility activities. The activity of international mobility is defined as student mobility in the duration of at least one semester.
te	6.6. Internationalization of eaching activities of the faculty	Number of international conferences and workshops organized by the Faculty	Number of international conferences and workshops organized by the Faculty that can consequently lead to a better connection with the international scientific and professional community and increase interest in international mobility.
		Share of foreign students at a graduate study programme in English	Number of foreign students enrolled in a graduate study programme taught in English, which includes Faculty staff and internationally recognized forestry experts.
pr de st	5.7. Directing study programmes towards the levelopment of skills that trengthen competitiveness in he labour market	Enrolment quotas for studies in relation to the needs of the labour market	The indicator monitors enrolment quotas for studies according to the needs of the labour market, i.e., recommendations for educational enrolment policy and scholarship policy of the Croatian Employment Service.  Within the activities monitored by the programme agreement, the Faculty may choose to reduce (i.e., increase) the enrolment quotas for those study programmes for which there is no (i.e., there exists) need on the labour market. The need is defined by the Croatian Employment Service within the recommendations published in December of each year for the following year.
		Number of study programmes aligned with the Croatian Qualifications Framework	Number of study programmes of the Faculty that aligned with the qualification standards set in the Croatian Qualifications Framework.
		Number of entered qualification standards in the Register of the Croatian Qualifications Framework	The indicator refers to the number of entered qualification standards submitted by the Faculty for entry into the Register of the Croatian Qualifications Framework (https://hko.srce.hr/registar/).

3.8. Improvement of practical training	concluded with economic operators for the purpose of performing practical training	The number of contracts concluded to maintain practical training in the country and abroad as one of the courses leading to the strengthening of student competencies, raising awareness of current needs and knowledge on the labour market, and contributing to greater competitiveness of students upon completion of the Faculty's studies.
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The Faculty of Forestry and Wood Technology has always had a traditionally good cooperation with numerous institutions and stakeholders in the wider community, and it has especially distinguished itself by participating, and often assuming the leading, role in the preparation of laws and bylaws of state institutions, as well as offering material assistance and other forms of support. The employees of the Faculty have performed responsible duties in ministries, as well as in national parks, nature parks, Hrvatske šume d.o.o. (Croatian Forests Ltd.) and other institutions. The employees of the Faculty are members of numerous domestic and foreign scientific and professional associations. Faculty teaching staff, associates and students are members of a number of committees, panels, working groups and other bodies of the University of Zagreb.

The goal is to continue being an example of a high level cooperation with all legal entities and natural persons in the region, to participate in the development of laws and bylaws in the sectors of forestry, urban forestry, nature conservation, environmental protection, wildlife management, wood technology, wood technology processes and wood product design, to contribute to solving various problems in the profession, with constant engagement in the promotion of the forestry and wood technology profession, and to actively participate in the organization of events and charity actions. Intensification of cooperation will also be achieved by developing new lifelong learning programmes aligned with the Croatian Qualifications Framework, for the implementation of which the capacities of the Faculty's teaching and testing facilities will be additionally engaged. Continuous investments in Teaching and Experimental Forest Centres are also a prerequisite for achieving this strategic goal, so that they continue to serve as exemplary models of sustainable forest management and provide suitable conditions for teaching and scientific research. In addition to improving the operations of the Faculty and digitizing business these efforts will enable additional cost rationalization and ensure long-term financial stability of the Faculty.

Strategic goal	Specific goal/Institutional goal	Result indicator	Description
	4.1. Work on activities of national importance	Number of formalized cooperation with state administration and the public sector bodies	Number of formalized collaborations of the Faculty with state administration bodies and other public sector bodies. Formalization of cooperation includes the appointment of experts, a formal framework of cooperation, within which the Faculty would participate in projects of public interest within the competence of the said body, if necessary and at the request of a state or public body. Collaborations may, for example, include the development of studies and analytical bases for the purpose of decision-making in state and public bodies, participation in the development of strategic documents, and other forms of cooperation with state and public bodies, in areas related to the field of research and activities of the Faculty. Cooperation refers to the engagement of employed experts or a project that performed on commercial basis, and is carried out within the regular work of the Faculty.
4. Strengthening social responsibility.	4.2. Strengthening the culture of lifelong learning, equality and equality	Number of measures taken to promote a culture of equality and equity	Number of measures taken to promote equality between women and men and the prohibition of discrimination, and/or to promote accessibility for persons with disabilities. The achievement of the indicators includes measures that can be quantified (e.g., the number of organized workshops or lectures on the promotion of gender equality, the number of works to improve the accessibility of the Faculty's physical infrastructure to people with disabilities).  The indicator refers to measures that are not already prescribed as mandatory by the Act on Gender Equality and other regulations governing equity and equality.
		Number of employees who have completed professional development programmes	Number of employees who have completed at least one professional development programme. Professional development programmes include accredited professional development programmes of employees related to the successful performance of tasks arising from the employees' job descriptions.  Accredited programmes include professional development programmes that have been approved by the Ministry of Science, Education and Youth or have passed the internal quality assurance system at the Faculty, in accordance with the regulations on lifelong learning.

	Number of lifelong learning programmes performed at the Faculty aligned with the Croatian Qualifications Framework	Number of lifelong learning programmes at the Faculty aligned with the Croatian Qualifications Framework.
4.3. Improvement of the Faculty's operations	Number of organizational measures implemented to reduce administrative costs	Number of organizational measures implemented to reduce the administrative costs of the Faculty. Examples of administrative costs include the rental of premises, overheads (heating/cooling, electricity, water, cleaning, waste disposal, telecommunications, etc.) and the reorganization of administrative /non-scientific staff, including the redistribution of associated costs. Examples of measures include merging administrative departments, new systematization of work for non-scientific staff, etc.?
4.4. Digitalization of operations	The amount of internal and earmarked funds spent on projects with the aim of digital transformation of operations	The amount of internal and earmarked funds spent on implemented projects with the aim of improving operations through the introduction of digital forms of operations. The achievement of the indicator includes, for example, the introduction of digital registers, the introduction of digital storage and delivery of internal documents, digital repositories, digitization of bookkeeping, accounting or project administration activities, etc.
4.5. Strengthening the green transition	The amount of internal and earmarked funds spent on projects with the aim of raising energy efficiency	The amount of internal and earmarked funds spent on implemented projects with the aim of introducing efficient management of energy resources.  The achievement of the indicator includes efficient waste management, raising the level of energy efficiency of buildings, introducing an energy-efficient heating and cooling system, switching to renewable energy sources (e.g., installation of solar panels), for the purpose of reducing financial expenditures on energy products and preserving the environment.
4.6. Strengthening the capacity of Educational and Experimental Forest Facilities	The amount of funds for investments in the infrastructure of Educational and Experimental Forest Facilities.	Investments in the infrastructure of Educational and Experimental Forest Facilities are expressed in the annual amount of funds.

4.7. Popularization of science	Number of activities to popularize science	Number of activities/events related to the popularization of science and arts. Activities may include doors open days, presentations of scientific projects or new scientific achievements or works of art and installations, youth-oriented events with the aim of popularizing sciences or arts, exhibitions, etc. that relate to stakeholders of all levels of education, starting from early childhood.  These include radio and TV shows and those activities with a significant dissemination component, specifically, an audience of 50 or more people.
4.8. Popularization of the forestry and wood technology profession	Number of professional popularization activities	Number of activities/events related to the popularization of the forestry and wood technology profession. Activities may include forum organizations, high school promotions, radio and TV shows, and social media.

The Development Strategy of the University of Zagreb, Faculty of Forestry and Wood Technology, was prepared by the Strategic Planning Committee:

- Full professor, Josip Margaletić, PhD, Chairman of the Committee
- Assoc. Prof., Dinko Vusić, PhD, Deputy Chairman of the Committee
- Assoc. Prof., Andreja Đuka, PhD
- Full professor, Alan Antonović, PhD
- Full professor, Stjepan Posavec, PhD
- Assist. Prof. Miljenko Klarić, PhD
- Full professor, Tibor Pentek, PhD
- Full professor, Vladimir Jambreković, PhD
- Full professor, Milan Oršanić, PhD
- Ivona Josipović, student

The Strategy was adopted at the 4th regular session of the Faculty Council of the University of Zagreb, Faculty of Forestry and Wood Technology, held on 30 January 2025.

