KPI4HE

ERASMUS+

"Establishment of National framework of Key Performance Indicators for good governance and quality towards inclusive, digital and green oriented higher education in Armenia" (KPI4HE)

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Draft Operations Manuals on Institutional Research OMIR"

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Deliverable 2.2
Draft Operations Manuals on Institutional Research
OMIR

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DRAFTING OF AN OPERATION MANUAL ON INSTITUTIONAL RESEARCH FOR ARMENIAN UNIVERSITIES

INTRODUCTION

This document is aimed at fulfilling, in the framework of the Erasmus+ CBHE project "KPI4HE", the tasks planned by the deliverable 2.2 of the project work-plan regarding the drafting of an Operations Manuals on Institutional Research (OMIR), to be revised and improved according to a context analysis, to be implemented, once achieved the endorsement by the Ministry of Education, Science, Culture and Sport of Armenia, at National level.

It is appropriate to remind the two distinct overarching goals of the KPI4HE project:

a. *to establish a National framework of Key Performance Indicators (NF-KPI) for good governance and quality towards inclusive, digital, and green-oriented Higher Education (HE) in Armenia. This aligns with the broader objectives of improving the quality, accessibility, and relevance of HE in the country* [1][4].

b. *to address several key challenges in the current Armenian (AM) HE system, including the lack of a comprehensive performance monitoring framework, limited institutional research and planning capacities, and the need to better align higher education with the principles of inclusivity, digitalization, and sustainability* [1][3][4].

The OMIR is also intended to ensure a preparatory framework to the realization of the next deliverable, i.e. D3.1 "GIRSPA" (Draft National Guide for Institutional Research and Strategic Planning), duly considering a further revision and improvement process of the OMIR according to a context analysis to be implemented at National level, once achieved the endorsement by the MESCS - Ministry of Education, Science, Culture and Sport of Armenia.

In accordance with the YSU guidelines as project coordinator, primary aim of the GIRSPA guide is to provide a comprehensive framework for integrating Institutional Research (IR) with Strategic Planning (SP) in Higher Education Institutions (HEIs) in Armenia. The GIRSPA will contain essential methodologies, key terminology, and best practices to ensure effective decision-making and planning.

As regards key terminology, the glossary mentioned at the end of this report will be useful, together with the following outlines.

References:

[1] https://www.anqa.am/en/publications/manual-for-the-introduction-of-key-performance-indicators-and-performance-based-agreements-in-armenian-higher-education/

[2] https://www.wareg.org/documents/kpis-report-2023-wareg-pdf/

[3] https://unece.org/housing-and-land-management/publications/smart-sustainable-city-profile-goris-armenia

[4] https://erasmusplus.am/course/establishment-of-national-framework-of-key-performance-indicators-for-good-governance-and-quality-towards-inclusive-digital-and-green-oriented-higher-education-in-armenia-kpi4he/

[5] https://www.mcc.gov/resources/doc/armenia-compact-kpi/

1. *Overview*
    A brief description of the main aim of the guide, its structure, key terminology used. The overview also highlights who the guide is intended for, how it should be used and what can be achieved as a result. This section will also reflect on the importance of IR and SP in HE.

2. *Integrating Institutional Research with Strategic Planning*
    This section elaborates on the role of institutional research in strategic decision making and planning. It offers framework and structure for institutional research as well as core metrics and Key Performance Indicators (KPIs).

3. *Data types*
    This section outlines the key data types recommended to be monitored (regularly collected, stored and analysed) for the purpose of institutional research and strategic planning. These data types will address three levels of priority: global (reflecting on global trends in higher education and beyond), local (reflecting on national / state priorities) and internal (reflecting on HEIs specific aims and objectives).

    3.a *Universal data sets. The guide offers a set of universal data sets to be monitored, which are common for all higher education institutions, irrespective of specific areas of performance.*

    3.b *Specific data sets. The guide offers to identify sets of specific data sets to be monitored in addition to the universal ones, based on particular needs of the given higher education institution. These specific sets should reflect particular aims and objectives of the institution.*

    3.c *The data types can be broadly categorized into several key areas, each addressing different aspects of university operations, performance, and outcomes.*
    3.c.1 *Student Data (Demographic Data. Enrolment Data. Academic Performance Data. Attendance and Retention Data. Financial Aid Data. Engagement and Satisfaction Data).*

    3.c.2 *Faculty and Staff Data (Demographic Data. Employment Data. Performance and Evaluation Data. Salary and Compensation Data).*

    3.c.3 *Academic Programs Data (Program Enrolment and Completion Data. Curriculum and Course Data. Learning Outcomes Data).*

    3.c.4 *Institutional Data (Financial Data. Facilities and Infrastructure Data. Research and Grants Data. Alumni Data).*

    3.c.5 *External Data (Benchmarking Data. Regulatory Compliance Data).*

4. *Data sources and analysis*

This section offers recommendations on data sources to be considered for both universal and specific data sets. The recommendations highlight key considerations on what sources and methods of data collection can be used, also elaboration on best practices for analysis.

5. *Cases and best practices*

   This section offers examples of successful institutional research and strategic planning initiatives as well as practical insights, common challenges and potential limitations to be considered.

6. *Appendices*

   The guide also offers sample templates and tools for IR and SP.

"KPI4HE" PROJECT STRUCTURE

Expected Sustainability of Outcomes

1. *To ensure the sustainability of the outcomes over the project lifecycle, the KPI4HE initiative is working to integrate the NF-KPI and Institutional Research and Planning Services (IRPS) into the regulatory and operational frameworks of AM HE Institutions (HEIs). This includes securing buy-in from the Ministry of Education and Science, as well as establishing clear policies and procedures for the continued use and updating of the NF-KPI [1][4].*

2. *The training kit and operational manuals developed under the project are designed to be living documents, with provisions for periodic review and updates to maintain their relevance. The project also aims to build the capacity of institutional staff to independently manage and update these resources beyond the funding period [1][4].*

Training and Capacity Building

1. *The Training Kit on Institutional Research (IR), next to be conclude by the Genoa event of March 2025, is incorporating best practices and experiences from European Union HE systems, focusing on how IR can support governance, strategic planning, and quality improvement. The kit should cover topics such as data collection, analysis, and the use of KPIs for evidence-based decision-making [1][4].*

2. *The staff members for training have been selected among key personnel from the participating HEIs, including administrators, faculty, and institutional research professionals. The training program has been aimed at developing their skills in areas such as data management, performance monitoring, and strategic planning [1][4].*

Digital Platform for NF-KPI (high-level requirements)

The digital platform supporting the National framework of KPIs (NF-KPI), in the framework of the WP 3 "Conducting Institutional Research and Strategic Planning", is envisioned to provide a centralized hub for data collection, analysis, and reporting. It will feature functionalities such as automated data entry, visualization tools, and benchmarking capabilities to facilitate the use of KPIs for institutional improvement [1][4]. The digital platform is expected to support the transition to inclusive, digital, and green HE by enabling data-driven decision-making, promoting transparency, and facilitating the integration of sustainability-related indicators into the NF-KPI [1][4].

The digital platform designed as part of the KPI4HE project should play a pivotal role in driving the transition towards inclusive, digital, and green HE in Armenia. The digital platform serves as a dynamic and transformative tool, providing the infrastructure and functionalities necessary to drive the transition towards an inclusive, digital, and green HE system in Armenia. Its design prioritizes accessibility, technological innovation, and sustainability, reflecting a holistic approach to meeting the project's objectives.

The platform should serve as a comprehensive and integrated tool to achieve multiple objectives aligned with the project's overarching goals.

Institutional Research and Planning Services (IRPS)

The project is working to establish Institutional Research and Planning Services (IRPS), in the framework of the WP 3 as well, within the participating HEIs. These IRPS units will be responsible

for collecting, analysing, and interpreting data to support strategic planning, quality assurance, and performance monitoring [1][4]*. The project considers the development of appropriate regulatory frameworks, data management infrastructures, and staffing resources as essential for the successful integration and long-term operation of IRPS within the institutions* [1][4]*.*

Pilot Activities and Reports
a. *The project must conduct pilot Institutional Research (IR) and strategic planning activities in several participating HEIs. These include developing institutional data collection and analysis frameworks, as well as using KPIs to inform decision-making and quality improvement initiatives.*
b. *The insights and lessons learned from the pilot activities should inform the ongoing refinement of the NF-KPI, the training program, and the overall project implementation. For example, the pilot results could highlight the need for more comprehensive data management systems and the importance of building institutional capacity for data-driven decision-making.*

State Institutional Accreditation Standards
A revision of the State Institutional Accreditation Standards should be closely aligned with the development of the National framework of KPIs (NF-KPI). The new standards are expected to incorporate relevant KPIs from the NF-KPI, particularly in areas related to quality, inclusivity, and the integration of digital and green practices. In overall terms, the alignment of the revised accreditation standards with the NF-KPI is expected to strengthen the overall quality assurance system in AM HE, while also promoting the adoption and use of the NF-KPI by institutions.

Monitoring and Evaluation
The project aims to establish a comprehensive monitoring and evaluation framework, which includes regular assessments of the progress towards achieving the project's objectives. This should involve the use of both quantitative KPIs and qualitative indicators to gauge the effectiveness of the project interventions with respect to [5]*. The Key Performance Indicators (KPIs) should be assessed on an annual basis, with the project team closely monitoring the implementation and impact of the NF-KPI, the IRPS, and other project components.*

Stakeholder Engagement
The KPI4HE project has engaged a wide range of stakeholders, including the Ministry of Education and Science, HEIs, faculty, students, and the broader community. These stakeholders have been involved in the development and validation of the NF-KPI, as well as in the design and implementation of the project activities as provided by [1][4]*.*

Challenges and Mitigation Strategies
Potential challenges in the implementation of the KPI4HE project include the need to build institutional capacity for data-driven decision-making, ensuring the continued commitment and buy-in from HEIs, and aligning the project with evolving national policies and priorities. To address these challenges, the project team is focused on comprehensive training and capacity-building efforts, fostering strong partnerships with key stakeholders, and maintaining flexibility to adapt to changing circumstances.

The deliverable 2.2 has to be considered, keeping into account the project local framework matrix, as an operational consequence of the Strategic Planning model proposed by the report published as deliverable 2.1. such an output was more focused on introducing briefly the process of making of the Universities' strategic planning and the essential contents of a strategic planning consistent with the Quality Assurance requirements more relevant with the topics of the project, i.e. Institutional Research.

The making of the present report representing the deliverable 2.2 "OMIR. Manual Draft Operations Manuals on Institutional Research" is also the opportunity to better develop some aspects briefly presented in the framework of the deliverable 2.1, such as:

- *the definition of elements oriented to an "operationalization" of the process of defining the Three-Year Program, requiring for a complex and shared process that involves, with different competences, multiple actors.*

The present report considers, in comparison with the previous analysis focused only on three strategic goals (basic research, applied research and doctoral studies), another strategic goal, which has to be considered as natural support goal to the three previously mentioned, i.e. the strategic goal related to "financing of the Institution". So that, in order to integrate this additional goal, the preliminary part has been considered.

In order to enhance the common understanding and reciprocal awareness, the present report is concluded by a brief Glossary, useful to understand, in the present context, Strategic Planning and organization meant as the ability of the Universities to define their own vision – clear, coherent, articulated and public – of the quality of Education, Research, Third Mission and Management. The meaning of these terms is here briefly reminded.
The terms "vision", "policy" and "strategy" have the same meaning as in ISO 9000:2015:

- *Vision: aspiration of what an organization world like to become as expressed by the top management.*
- *Policy: intentions and direction of an organization as formally expressed by its top management.*
- *Strategy: plan to achieve a long-term or overall objective.*

The "Third Mission" is understood as the set of activities with which the University enters in direct interaction with society, promoting its economic, cultural and social development through the transformation, provision and circulation of knowledge produced mainly by research.
Moreover, please consider that - anyway - the University should strictly define its own vision of the quality of Education, Research, Third Mission / social impact and Management, as consistent with the European Standards and Guidelines - ESG. [6]

After the presentation during the Oldenburg event in September 2024, of the model and keeping into account the process of awareness enhancing, the present report has been published, to consider as the achievement of one of the main outcomes of the project, that is the OMIR mean as the elaboration of an actual and effective model, as much as possible feasible for the AM HE system.
The presentation during the Genoa event is wished as the beginning of a including a discussion process towards to its improving and validating.

References:

[6] https://www.enqa.eu/esg-standards-and-guidelines-for-quality-assurance-in-the-european-higher-education-area/
Standards and guidelines for quality assurance in the European Higher Education Area (ESG) provide the framework for internal and external quality assurance. They were adopted at the EHEA Ministerial Conference in 2015.
As regards ESG revision 2024-27, the Tirana Ministerial Communiqué of May 2024 gave the authors of the ESG the mandate to revise the document. It is expected that the final text of the ESG 2027 should be approved by the Bologna Follow-up Group at their meeting in autumn 2026, with no further changes to be made before adoption by EHEA Ministers at the Ministerial Conference in Romania/Moldova in spring 2027.

STRATEGIC GOALS

Overview of the goal of a University's Strategic Plan is the result of consultation and collaboration across all Units (Schools, Departments, Institutes), student representative bodies and staff. The Strategic Plan sets out the framework principles supporting the University's policy commitments for a specific period of at least three years.

Universities must be aware of how they can positively affect the wellbeing both at local and wide framework and the people who live on this framework. Research and the provision of knowledge better equip not only to face the challenges, but also to catch the opportunities offered by changes in society and the world at large. Nowadays, the core elements for change and development, meant as main strategic lines, are:

- ✓ Innovation & Digitalization: to streamline administrative procedures and optimise support activities and mission actions.
- ✓ Sustainability: To integrate sustainable Development in the curriculum, in research and at local business level trying to set an example for others.
- ✓ Inclusion: To promote accessibility, equality and social inclusion.
- ✓ Internationalisation: To develop and strengthen international agreements, to promote scientific and cultural exchanges and create cosmopolitan profiles.
- ✓ Quality: To foster effectiveness, transparency and traceability of UniGe processes.

All these elements are present in the strategic challenges outlined in the U.N. Agenda 2030, that set-up the Sustainable Development Goals (SDG), a series of 17 interconnected objectives, defined by the United Nations as a strategy "*to achieve a better and more sustainable future for all*".

Therefore, the vision of each University should consider itself as a driver for the community's growth and the commitment to further develop partnerships and networks locally, nationally and at international level to deliver multi- and cross-disciplinary solutions and projects with high socio-economic impacts.

In order to achieve its mission, in line with its vision, the University identifies within the Strategic Plan, the Strategic Goals that it intends to pursue during the considered rectoral mandate.

The University, with the definition of the Strategic Goals, contributes to the achievement of the goals set by the international and national agendas, developing its institutional mission to achieve the objectives identified according to the aforesaid 5 strategic lines: digitalization and innovation, sustainability, inclusion, internationalization and quality.

The publication on the website of each University of both the Strategic Plan and the three-year Program is suggested, for the purposes of publicity of administrative documents, dissemination and transparency.

By the deliverable 2.1 a model for the definition of the Strategic Goals was presented, with description of the three involved Strategic Goals and detail of the actions to be pursued in the framework of each of the three Strategic Goals.

The cards of these definitions are here repeated and integrated by the cards detailing how to achieve the results planned by each action, in the framework of a three-year goals and actions. The structure of each card is based on the following elements:

- **Description of the action**
- **Academic position and Boards responsible for the objective achievement**
- **Structures involved**
- **Indicator**
- **Technical specifications**
- **Administrative office responsible for data collection and elaboration**

The element **Resources** just quotes the definition TBD (To Be Defined) since the allocation of financial resources can be defined only in occasion of an actual implementation of the plan.
It should be also as appropriate to identify, for each Strategic Goals, the relevance with the 17 interconnected objectives of the SDG), the 5 above listed Strategic Lines and the scale of intervention according to a three-tier model of intervention: Institutional level, Local impact, National and international community.

The Strategic Goals identified as appropriate within the Strategic Plan to pursue during the considered rectoral mandate, and aimed at achieving the University mission, in line with its vision, have been represented in the report regarding the deliverable 2.1. and defined in order to contribute to achieve the goals set by the international and national agendas, to develop the University institutional mission and to achieve the objectives identified according to the **5 strategic lines**: i) digitalization and innovation, ii) sustainability, iii) inclusion, iv) internationalization and v) quality.

The **defined macro-Strategic Goals** have been the following. The publication on the website of each University of both the Strategic Plan and the three-year Program is suggested, for the purposes of publicity of administrative documents, dissemination and transparency.

- LEARNING PROCESS and SERVICES FOR STUDENTS
- RESEARCH
- THIRD MISSION
- ORGANIZATION and RESOURCES

Within the macro-Strategic Goal RESEARCH, the following specific goals have been identified.

4.   Promote basic research projects in synergy with local, Armenian, EU, and international initiatives, fostering interdisciplinary research and contamination of knowledge and skills.
5.   Strengthen applied research projects by enhancing contribution of innovation and by fostering the circulation of knowledge and skills.
6.   Support the PhD programs, also by promoting innovative and industrial courses, supporting their international dimension. Pay attention to the opportunities promoted by AM / EU / International scientific and technological research framework.

Strategic Goals will be pursued through actions during three-year programs to decline for each Strategic Goal. They represent the medium- and short-term planning tools for implementation of the HE institutional missions, and characterized by different scales of intervention:
-       internal, relating to the organization of each Armenian University;
-       regional, i.e. the territory in which the Armenian Universities campuses are located;
-       and finally national / international, as a framework of cultural reference.

STRATEGIC GOAL 4 - BASIC RESEARCH

STRATEGIC GOAL 4 - Enhance basic research activities in synergy with local, national, European and international initiatives, by strengthening interdisciplinary research and the contamination of skills and knowledge

Action 4.1 Stimulating research and participation in national, European Union and international projects

Description

The result will be achieved through internal calls for proposals to encourage and support national, European and global research.

Bodies responsible for the objective achievement

Vice Rector for research

Structures involved

Research, technology transfer and third mission Area, Departments

Resources

TBD

Indicator

Proportion of competitive financing proceeds to total revenues

Technical specifications

Numerator: Competitive financing revenues on December 31
Denominator: Total income and contributions on December 31

Sector responsible for data collection and elaboration

Budget Sector

Action 4.2 Improving communication of funding opportunities and increasing participation and success rates in competitive national and international research calls

Description

Expected results will be achieved by increasing the number of training courses for faculty and technical-administrative staff on research funding opportunities, elaboration and management of research projects.

Bodies responsible for the objective achievement

Vice Rector for research

Structures involved

Research, technology transfer and third mission Area, Departments

Resources

TBD

Indicator

Success rate for participation in competitive calls

Technical Specifications

Numerator: Number of projects submitted in year (n-1), funded in the framework of the H2020 / Horizon Europe, COST, LIFE and other similar programs

Denominator: Number of projects submitted in year (n-1), funded in the framework of the H2020 / Horizon Europe, COST, LIFE and other similar programs

Sector responsible for data collection and elaboration

Sector for European research, Sector for national research, Sector for international scientific research and cooperation

Action 4.3 Strengthening of infrastructures and research support tools

Description

Expected results will be achieved by:

- increasing investment in research equipment, also shared among several departments and centers,

- monitoring the status of equipment and instrumental platforms.

Bodies responsible for the objective achievement

Vice Rector for research, Vice Rector for the relations with the Health System, Delegates for the operation of the Campuses

Structures involved

Area for the provision of goods and services, Departments

Resources

TBD

Indicator

Faculty's satisfaction for research laboratories

Technical Specifications

Customer satisfaction questionnaire annually submitted to the whole Faculty

Sector responsible for data collection and elaboration

Organization Development Sector

Action 4.4 Boosting quality of research and enhancing excellence dimension

Description

The result will be achieved by checking and possibly revising the rewarding criteria for the award of research funding of the University.

Bodies responsible for the objective achievement

Vice Rector for research

Structures involved

Research, technology transfer and third mission Area, Departments

Resources

TBD

Indicator

Percentage of departments that adopt merit criteria to distribute internal resources

Technical Specifications

Numerator: number of Departments that in the Departmental Research Action Programme Document indicate the results of the evaluation of research quality, the thresholds for the national scientific enabling, the scientific production or calls among the criteria for the distribution of resources
Denominator: number of Departments

Sector responsible for data collection and elaboration

Director General Area

Action 4.5 Promoting the international dimension of research activities

Description

Expected results will be achieved by:
- increasing the number of applications for the title of Visiting Researcher,
- increasing the number of project proposals within academic cooperation agreements.

Bodies responsible for the objective achievement

Vice Rector for research, Vice Rector for PhD programs and business relations, Vice Rector for internationalization, Vice Rector for the relations with the Health System, Delegate to the academic cooperation agreements

Structures involved

Research, technology transfer and third mission Area, Area of didactics, services to students, orientation and internationalization, Departments

Resources

TBD

Indicator

Participation to ERC - European Research Council projects

Technical Specifications

Number of ongoing ERC funded projects

Sector responsible for data collection and elaboration

Sector for European Research

Action 4.6 Improving the knowledge of teaching staff and lecturers on ministerial evaluation criteria, rewarding conditions, and national and international ranking systems

Description

Expected results will be achieved by:
- implementing dissemination actions on current ministerial assessment criteria and rewarding conditions,
- dissemination actions on the concept of reputation, with special reference to national and international rankings.

Bodies responsible for the objective achievement

Vice Rector for internationalization, Vice Rector for research, Vice Rector for PhD programs and business relations, Delegate to national and international rankings

Structures involved

Research area, technology transfer and third mission, Director General Area

Resources

TBD

Indicator

Level of knowledge that the teaching staff members declare regarding the criteria of ministerial assessment useful for the purposes of distribution of the ordinary funding from the Ministry and the triennial programming

Technical Specifications

Customer satisfaction questionnaire annually submitted to the whole Faculty.

Sector responsible for data collection and elaboration

Organization Development Sector

STRATEGIC GOAL 5 - APPLIED RESEARCH

STRATEGIC OBJECTIVE 5 - Strengthen applied research, by enhancing the transformative impact of innovation and by promoting the circulation of knowledge and skills

Action 5.1 Promoting scientific production, provision of research products and Open Science

Description

Expected results will be achieved by:
- information and support actions for publication, also in Open Access,
- increasing the capacity of transformative agreements,
- implementing Open Science courses for doctoral students and 3rd cycle higher education support staff,
- implementing actions for periodic monitoring of the delivery of scientific products on the "IRIS" (Institutional Research Information System) repository.
These activities will also be carried out in connection with actions 4.4, 4.5 and 4.6.

Bodies responsible for the objective achievement

Vice Rector for research

Structures involved

Research, technology transfer and third mission Area, University Library System

Resources

TBD

Indicator

Percentage of teachers having achieved the threshold values of the indicators foreseen by the National Scientific Enabling for Commissioners

Technical Specifications

Numerator: number of teachers (full professor and associate professors) in service on December 31, who reached the threshold values for all the three indicators foreseen for Commissioners in the National Sc. Habilitation System ("ASN"), for their own Scientific-Disciplinary Sector
Denominator: teachers (full professor and associate professors) in service on December 31

Sector responsible for data collection and elaboration

Sector for monitoring and support to research and third mission evaluation

Action 5.2 Promoting research results through information and dissemination activities

Description

Expected results will be achieved through the organization of workshops, conferences and events organized for the dissemination of research results and knowledge transfer.

These activities will also be carried out in connection with action 4.2 of 2022-2025 Plan.

Bodies responsible for the objective achievement

Vice Rector for research, Vice Rector for third mission: dissemination, public engagement and social impact, Rector's Delegate for technology transfer, patents and spin-offs, Delegates for Regional Campuses, Delegate for the University's web radio and the promotion of cinema in the university community (if any)

Structures involved

Research, technology transfer and third mission Area, Departments

Resources

TBD

Indicator

Percentage of active teachers

Technical Specifications

Numerator: professors and researchers with at least 2 products present in the "IRIS" repository in the last 3 years of service, on December 31

Denominator: professors and researchers in service on December 31

Sector responsible for data collection and elaboration

Sector for monitoring and support to research and third mission evaluation

Action 5.3 Strengthening the attractiveness of research for the territorial production system

Description

Expected results will be achieved by:

- organizing events/meetings with NEO and National Agency for European Promotion (if any) partners and the regional research system,
- partnerships with third parties,
- implementing actions to verify the R&D needs on the territory.

Bodies responsible for the objective achievement

Vice Rector for PhD programs and business relations, Delegate to technology transfer, patents and spin-offs, Vice Rector for research, Vice Rector for third mission: dissemination, public engagement and social impact, Vice Rector for the relations with the Health System, Delegate to the relations with cultural institutions, Delegates for the Regional Campuses

Structures involved

Research, technology transfer and third mission, Departments

Resources

TBD

Indicator

Proporzione dei proventi da ricerche commissionate e trasferimento tecnologico sul totale dei proventi

Proportion of commissioned research and technology transfer revenues to total revenues

Technical Specifications

Numerator: revenues from commissioned research on December 31

Denominator: total income and contributions on December 31

Sector responsible for data collection and elaboration

Budget Sector

STRATEGIC GOAL 6 - PhD PROGRAMS

STRATEGIC OBJECTIVE 6 - Support the PhD programs, also by promoting innovative and industrial doctorates, and by fostering their international dimension

Action 6.1 Strengthen the attractiveness of doctoral programs for the territorial, national and international production system

Description

Expected results will be achieved by:
- increasing the number of industrial doctoral fellowships,
- increasing the number of "international" doctoral fellowships, in collaboration with foreign universities and research bodies,
- increasing number of languages for translation of the call for PhD candidates,
- increasing number of int'l agreements for PhD programs in joint supervision ("cotutelle").

Bodies responsible for the objective achievement

Vice Rector for PhD programs and business relations, Vice Rector for Research, Delegate for technology transfer, patents and spin-offs, Vice Rector for third mission: dissemination, public engagement and social impact, Vice Rector for internationalization, Vice Rector for the relations with the Health System

Structures involved

Area of didactics, services to students, orientation and internationalization, Departments, PhD programs

Resources

TBD

Indicator 1

Share of students enrolled in industrial PhDs on total number of students enrolled in doctoral studies

Technical Specifications

Numerator: students of PhD programs held in collaboration with companies (Industrial Doctorates) pursuant to the Ministerial Guidelines. Students enrolled in a PhD are considered, excluding careers that have been suspended during the same academic year. If more than one career is present, the latest to start is considered.

Denominator: students enrolled in PhD programs, excluding careers that have been suspended in the same academic year. If more than one career is present, the latest to start is considered.

The current definition of an industrial doctorate has to be consistent with Ministerial Guidelines.

Sector responsible for data collection and elaboration

Statistics and Datawarehouse Sector

Indicator 2

Percentage of PhD students enrolled in 1st program year, who obtained their previous degree abroad

Technical Specifications

Numerator: students enrolled in the first year of a PhD program cycle X with at least one university degree obtained abroad

Denominator: students enrolled in the first year of a PhD program cycle X

Sector responsible for data collection and elaboration

Statistics and Datawarehouse Sector

Action 6.2 Promoting the interdisciplinary dimension of doctoral programs

Description

The result will be achieved by promoting a composition of the PhDs Committees in terms of membership from different disciplinary areas.

Bodies responsible for the objective achievement

Vice Rector for PhD programs and business relations, Vice Rector for Research

Structures involved

Area of didactics, services to students, orientation and internationalization, Departments, PhD programs

Resources

TBD

Indicator

Percentage of doctoral programs with members of the PhD Committee belonging to 2 or more different "RQA" (Research Quality Assessment) scientific-topic areas.

The RQA is a model of periodic evaluation process to be carried out by the equivalent National Agency for the Evaluation of the University System and Research [8].

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References:

[8] The Agency assesses the quality of the research results of universities and their internal (Departments and assimilated structures) and Research Institutions, mainly through peer review. The evaluation is carried out considering the different scientific areas of evaluation, plus some interdisciplinary areas.
The evaluation of research products submitted by the universities in their position of stakeholders is carried out by the group of expert evaluators, highly qualified national and foreign scholars, chosen on the basis of international experience in research and evaluation, appointed by the Agency and distinguished by scientific area

Technical Specifications

Numerator: PhD programs with members of the Committee belonging to 2 or more different "CUN-VQR" disciplinary areas

Denominator: PhD programs

Sector responsible for data collection and elaboration

Sector for PhD programs and Medical Specialty Schools

FINANCIAL RESOURCES

Foreword on finance, organization and resources

To pay attention to the reporting, planning and managing of the financial resources is to be considered an action as important as the strategic lines detailed so far, since, in order to achieve the planned outcomes, it is important as well to carry out as follow.

1. *Pursue the development of the organization, paying particular attention to the identification of the best relations and functional interconnections / interdependencies among the offices and in the perspective of simplifying and increasing the fluidity of processes, dematerializing and digitalizing procedures.*

2. *Upgrading and designing spaces and infrastructure, ensuring safety, financial sustainability, and quality of services.*

3. *Optimize policies for best exploitation of the financial resources, with particular reference to one issue that has become as paramount for the development of the Higher Institution, i.e. the recruitment of teaching / technical / administrative staff and foster the development of skills in an inclusive and growing dimension.*

Accordingly, keeping into account the foreword, to ensure financial stability of the University and effective management of its resources has to be considered an important Strategic Goal.

Financial stability as Additional Strategic Line

One of the most important prerequisites for performance efficiency and progress of the University is its financial stability, which can be maintained by compensating the deficiency in public and statutory funding by a stable and planned growth of external revenues and more effective use of existing resources. Thus, the diversification of financial sources and the increase in financial inflow remain among institutional priorities requiring from the University to become more proactive and entrepreneurial in its interaction with external environment.

On the other hand, the funding needs of new development programs of the University require to harmonize the resources distribution with the objectives and priorities of the strategic plan by creating a university strategic budget. Meanwhile, the effective resource management and consistent realization of resource saving policy are also problems of primary importance from the viewpoint of financial stability.

At this aim the following objective and related strategic activities can be carry out.

Objective 5.1. To harmonize the financial planning with the University's strategic goals and objectives.

Strategies

a) Introduce the strategic planning in all main performance areas of the University; conduct a five-year planning of the student body, human and information resources, facilities and equipment base, financial resources and salaries.

b) Develop a budgeting system that will provide effective and fair distribution of financial resources and ensure coordination of management processes in all performance areas to achieve the defined goals.

c) Elaborate a strategic development budget for the University by 3-5-years-based on the progress indicators given in the University Strategic Plan, keeping into account the existing guidelines of the Ministry.

d) Establish indicative proportions between the financial allocations to the development expenses, salaries and infrastructure maintenance by years.

e) Develop a system of balanced budget indicators for the main performance areas and development priorities.

f) Conduct annual planning of the University budget based on the developed balanced budget indicators.

g) Establish and maintain an University Stabilization Fund and achieve its further increase.

Objective 5.2. To increase and diversify the sources of financial inflow to the University in accordance with its development needs.

Strategies

a) Achieve a stable growth of statutory funding through optimization of the nomenclature of the offered specialties and expanding the participation of the University in the State supported programs.

b) Develop and implement policies of marketing and commercialization of the University's programs and services in all its performance areas.

c) Decentralize the process of generation of non-statutory resources; identify, mobilize and address the potential of departments to the generation of their own resources.

d) Expand the range of the offered educational, research and information services, increase their profitability and the share of revenue received from them in the University budget.

e) Develop a methodology and conduct cost effectiveness and profitability analysis for each speciality as a whole; determine expenditures per student and per study program.

f) Based on cost analysis, develop a methodology for calculation of tuition levels for each of the study programs and their specialties taking into account their financial feasibility, profitability and competitiveness.

g) Use cost and profitability characteristics of the study programs and their constituent specialties in planning of specialties to be offered and admission quotas for each of them. Increase the cost effectiveness of the study programs and disciplines.

Objective 5.3. To increase the effectiveness of management and utilization of financial resources.

Strategies

a) Improve the financial management at the University by a further development of the existing normative base, effective use of management information system, retraining and recruitment of the staff.
b) Develop and introduce a system of criteria for the evaluation of the effectiveness of utilization of financial and physical resources.
c) Accomplish consistent resource-saving policy; implement technical and organizational measures for saving energy, water and other resources.
d) Reduce the costs of the University administrative services by improving the effectiveness of their performance.
e) Develop and introduce assessment criteria for the evaluation of the staff performance; conduct audit of human resources and create a normative base for the rational planning of the personnel.
f) Develop and introduce performance-based mechanisms for encouragement and rewarding of employee.

Some indicators for the assessment of the progress over 3-5 years can be considered
- Growth of non-statutory revenue compared with previous plan - at least XX%
- Percent of Stabilization Fund in the University budget - at least XX%
- Share of funding for development needs and its share in the University budget - at least XX%
- Share of allocations for maintenance costs in the University budget - at least X-XX%
- Growth of the average salary of the University staff - at least XX%
- Ratio of students financial aid fund (including reduced tuition) to income from tuitions fees - 1:xx
- Operating system of balanced budget indicators
- Approved strategic development budget

Model of harmonization of Public Funding of an Higher Education System

It is very important to set-up a system of harmonization of the public funding led by the Ministry, in order to introduce a public funding mechanisms of the national Higher Education (HE) system, with a focus on transparent and shared system of KPIs, so that an Ordinary Financing Fund (OFF) becomes the main tool to cover the structure, objectives, and evaluation metrics associated with the funding.

The University system, in general terms, is funded through a combination of sources:
• Public financing
• Student fees
• Resources from the private sector

Public financing is a key component and includes:
• OFF
• Other governmental resources
• Resources from public entities

OFF is the primary contribution from the State budget to public universities. It is the main source of public funding for the university system and is used to cover mandatory costs.

OFF is distributed to each University for its ordinary activities, including:

• Payment of salaries and staff costs (teaching, research, technical, and administrative)
• Community and international obligations
• Expenses for amortization of loans
• Ordinary maintenance of university premises and facilities
• Scientific research basic financing
• Educational services
• Building facilities and management of service facilities, including laboratories

The structure of OFF

The OFF is divided into three main parts:
• Basic share: assigned to each University proportionally to transfers and expenses incurred directly by the government for each university from a specific year.
• Premium share: assigned to each university in relation to some indicators such as: quality of the didactic offer, results of the didactic processes, quality of scientific research, and quality, effectiveness and efficiency of the teaching units and classrooms.
• Equalization share: amount determined following a formula to limit the maximum percentage of decrease from the OFF of the previous year, aimed at guaranteeing the financial stability of weaker Universities.

In addition to these, the Ministry guarantees additional funding for special purposes following the government's indications for the development of the university system. These special fundings may change from year to year depending on the changes in needs and priorities identified. Experiences

had during the last years have inducted to the trend according which special fundings have been guaranteed for the following activities:

- Extraordinary recruitment plans
- Scientific departments / centers of excellence
- Youth support fund
- No tax area for student tuition fees
- Ph.D. and Postgraduate Scholarship Fund
- Additional items (Consortia, strategic operations, etc.)

A detailed table can be developed in order to better detail the structure of the OFF, the distribution methods among public universities, the historical expenditure and different kinds of indicators.

SUSTAINABILITY INDICATORS

Sustainability indicators are used for ministerial purposes, including ensuring long-term budget balance for each University, influencing spending decisions toward quality services and safeguarding University autonomy.

Ministerial tools identified to reach such a goal include:
- Specific balance sheet indicators
- Limits to the increasing of personnel costs
- Limits to the increasing of financial needs

The balance sheet indicators are:
- Personnel Cost Indicator (PCI)
- Economic and financial sustainability Indicator (EFISI)
- Borrowing Expenses Indicator (BOREI)

Personnel Cost Indicator

The PCI is calculated as A/B:
- A = Total staff costs borne by the university (including salaries, not-teaching rewarding funds, and teaching contracts, minus external funding for staff costs)
- B = Main revenues (OFF + 3-5-year programming fund + Student fees net of reimbursements)

The Ministry fixed a limit of 80% for this Indicator. Universities that foresee to exceed the limit have to elaborate and implement a debt repayment plan and are subjected to severe restrictions in their hiring personnel activity.

Economic and Financial Sustainability Indicator

The EFISI is calculated as (XX%A)/B.

- A = (OFF + 3-5-year programming fund + Student fees net of reimbursements) − Passive rents

- B = Staff cost + Annual mortgage amortization charges (capital + interest)

The Ministry should fix a limit for this Indicator: it must be greater than one. In this indicator, Ministry decided to give special evidence to passive rents, considered a non-virtuous cost.

Borrowing Expenses Indicator

The BOREI is calculated as A/B or (82% A) / B:

•   A = Annual mortgage amortization costs (capital + interest)

•   B = (off + 3-5-year programming fund + Student fees net of reimbursements) – Passive rents – Total personnel expenses borne by the university

The Ministry fixed a limit for this Indicator: it must be lower than 15% but it fixed also a critical limit at 10% where Universities must implement a financial and activity plan to recover the limit.

Three-Year University Performance Program

The three-year programming (PRO3) aims to increase the quality of university activities. The Ministry defines the general guidelines for the performance of the University system, and Universities are called to develop actions that could be financed by the National Plan. The National Plan aims to develop a responsible autonomy of universities. Every National Plan defines the objectives for the whole universities system. For each objective, special action lines have been identified and each University was requested to define and implement activities for each objective and define the KPI to demonstrate the progress achieved.

Following possible list of proposed Objectives and their action lines.

Objectives

Objectives for the development of the universities system:
  A. Expanding access to university education
  B. Promoting research globally and enhancing the contribution to the country's competitiveness
  C. Innovating student services to reduce inequalities
  D. Being protagonists of an international dimension
  E. Investing in the future of young researchers and university staff

For each objective, Ministry defines the action lines that follows, and that each university must decline in activity and KPI:

•   Objective A – Expanding access to university education:
  o   A.1 Orientation and tutoring at the entrance and during the course to reduce student dropout and balance gender representation
  o   A.2 Strengthening structured teaching in study courses
  o   A.3 Attractiveness of study courses

- o A.4 Strengthening the skills acquired by students and innovation of teaching methodologies

- Objective B – Promote research at a global level and enhance the contribution to the competitiveness of the country:
  - o B.1 Research Doctorate and Industrial Doctorate
  - o B.2 Technology and knowledge transfer
  - o B.3 Improvement of research infrastructures and tools for the integration of research in international and European networks
  - o B.4 Qualification of the didactic offer and innovation policies in relation to the needs of the territory and the productive world, including the acquisition of skills for entrepreneurship

- Objective C – Innovate student services to reduce inequalities:
  - o C.1 Improve classrooms and study spaces (classrooms, study spaces, libraries, distance learning software and digital infrastructures)
  - o C.2 Qualification of the didactic offer in relation to the characteristics of the student population
  - o C.3 Interventions for the right to study and to disability
  - o C.4 Initiatives to reduce the risks of discrimination or social exclusion

- Objective D – Being protagonists of an international dimension:
  - o D.1 Study and research experiences abroad
  - o D.2 International study courses
  - o D.3 Attracting international students and domestic internationalization activities
  - o D.4 Integration of teaching in international and European networks

- Objective E – Investing in the future of young researchers and university staff:
  - o E.1 Recruitment of young researchers, research fellows, and doctoral grants
  - o E.2 Incentives for the mobility of researchers and professors
  - o E.3 Organizational adjustment also in consideration of dematerialization and the strengthening of agile work
  - o E.4 Integration of the Reward Fund

CONCLUSION

This report provides an overview of a possible public funding mechanism for Higher Education, focusing on the OFF tool, sustainability indicators, and the 3-5-Year University Performance Program. The OFF is a critical instrument for distributing funds to universities and ensuring the coverage of operational costs, while sustainability indicators and performance programs aim to drive quality, efficiency, and strategic development within the university system.

MANAGEMENT ORGANIZATION

GOVERNANCE AND UNIVERSITY BODIES. ORGANIZATIONAL CHART

The pursuit and achievement of the strategic goals must be supported by the organization of services, offices and technical-administrative staff, which are instrumental in achieving the university mission and should be based on the following criteria:

1. coherence between university strategies, defined by the Academic Bodies and organizational and management choices under the responsibility of the administrative management;

2. purpose of the administrative and technical services supporting mission activities according to the needs of users, ensuring efficiency, effectiveness and cost-effectiveness;

3. distinction between policy functions and management functions, according to the guidelines defined at government level;

4. enhancement of functional relationships between Academic Bodies and technical-administrative staff, without prejudice, for the latter, to the hierarchical chain at the top of which there should be a position such as the General Director;

5. unity and homogeneity in the management of university processes, through functional integration between the offices of the General Management and the Operational Structures (OO.SS.) such as Departments, Faculties, Institutes, Study & Research Centers;

6. reconduction, where possible, to a single Area of each process, with consequent valorisation of managerial responsibilities;

7. different declination of the organizational model based on the different needs of the OO.SS.;

8. verification of organizational choices based on processes of identification and evaluation of result indicators.

The Rectorship should relies on of the collaboration of a "Rector's Team" composed mainly by the First Vice Rector and by Vice Rectors and Delegates for each of the specific areas / topics in which the University top management is involved.

- ✓ **T**raining
- ✓ **R**esearch
- ✓ **T**hird mission
- ✓ **I**nternational dimension
- ✓ **T**echnology transfer and relationships with businesses
- ✓ **S**ustainability
- ✓ **P**lanning
- ✓ **G**eneral and legal affairs
- ✓ Relationships with the **H**ealthcare System (if any)

Examples for Vice Rectors delegations:

Deputy Vice-Rector; Sustainability; Research; Planning; General and Legal Affairs; Education, Third Mission including dissemination, public engagement and social impact; International Dimension; Relations with the Local Health System (if any); PhD and Relations with Businesses, Information and Telecommunications Technologies – ICT.

Examples for appointment of Delegates:

Quality assurance; Lifelong learning; Orientation and tutoring; Teaching innovation and faculty development; Relations with cultural institutions; Enhancement of museums and archives; Relations with students; International cooperation; International educational offer; University web radio and promotion of cinema in the university community; Operational support to decentralized / regional Campus; Strategic planning; Trade union relations; Development of sports activities in the university; Regional penitentiary university hub; Equal opportunities and inclusion; Territorial and polycentric university planning; University mobility manager; University energy; Technology transfer, patents and spin-offs; Disciplinary proceedings of teachers; University inclusion of students with disabilities and specific learning disabilities (DSA); Thematic area "Dual Use Goods and Technologies"; Geological assessments and mitigation of hydrogeological risk; National and international rankings; Management and coordination of survey, computerization and keeping of the University real estate assets.

The composition of the Rector's Team (list of the Vice Rectors and Delegates) should be published on the university website in order to enhance the transparency and the University Community awareness, with details of the Rector Decrees of appointment.

Organizational Chart. Governance and University Bodies.

The setting-up of a model of organizational chart it should be a task of the Ministry that should define guidelines for the setting-up in each Higher Education Institution the governance structure, the different university bodies and related differentiation of competences.

Therefore, it is easy to imagine how complex can be such task and how much time it can take, due to necessity to involve all the internal constituencies of the university, as well as the direct and indirect stakeholders.

Moreover, it is important to act according to the level of autonomy featuring the specific university level and, consequently, the level of autonomy benefiting each public university: regulatory, organizational, financial and accounting, didactic and scientific autonomy.

As a consequence of the level of autonomy, different Regulations and specific Statute approach can be deployed by each university:

University Statute;

General Regulations of the University and specific regulations on Teaching and Research;

Regulations on University rewards, valorisation of research results and discipline of activities in European and international programs;

Regulations on rewards for departments of excellence;

Regulations on visiting professors and visiting researchers;

Spin-off Regulations;

Regulations of the University Research Ethics Committee;

Regulations for the awarding of research grants;

Regulations on intellectual and industrial property;

Regulations on open access to scientific literature;

Regulations for research, consultancy and training contracts on behalf of third parties;

Regulations for the procedures for the awarding of paid internal positions to professors.

In the present framework, it is advisable to provide for some suggestion limited to a possible *“Model of Functions for Organizational-Managerial Structure”*.

MODEL OF FUNCTIONS FOR ORGANIZATIONAL-MANAGERIAL STRUCTURE

The following flowchart can be useful in order to plan an appropriate managerial structure, keeping the distinction between policy and management.

Maintaining the principles of distinction between policy and administration requires knowing the boundaries (juridical, statutory, organizational) of the two dimensions, in order to outline their distinctive features and proceed with greater certainty to the description of the ways in which one and the other "meet". Having defined this organizational aspect on a statutory level, the purpose of programming is also to analyse, with particular reference to the structural and organizational-managerial data, the relationship between the governing bodies (Rector, Management Board or equivalent Steering Committee, Academic Council, etc.) and the administrative body, in the different balances that have emerged within the specific HEI.

The model for a possible managerial structure is mentioned as well here below.
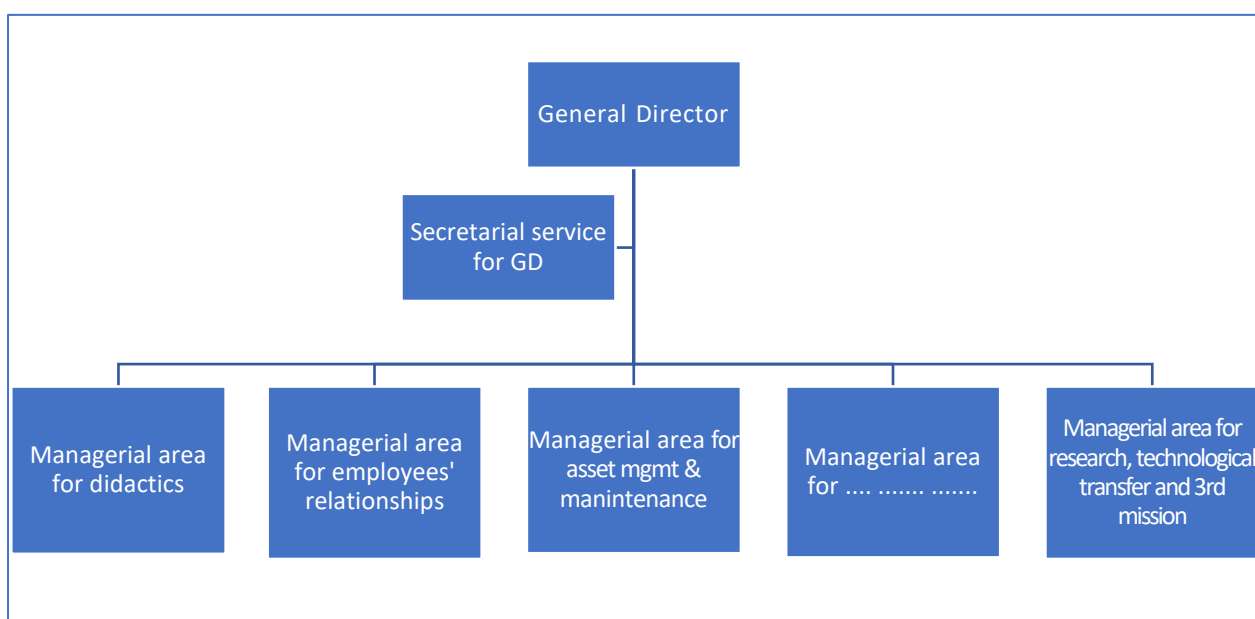
DIRECTORIAL AREA

He/she oversees processes that are immediately instrumental to the duties of the Rector and the Director General (DG).

The DG is appointed by the Management Board, upon the Rector's proposal, after consulting with the Academic Council, among individuals (within or outside the University) with high qualifications and experience in the organization and management of universities or research institutions.

The DG is competent, and responsible in front of the governing bodies, for the overall mgmt and organization of services, instrumental resources, and of technical and administrative staff based on the guidelines provided by the Management Board.

The DG ensures that the University's administration runs smoothly.

The DG also adopts all acts regarding the provision and organization of management-level offices, indicating general and specific goals to pursue; this may also imply assigning specific projects, exclusively or non-exclusively.

The DG assigns duties to all managers, and directs, coordinates, and oversees their activities.

The DG also exercises any other functions assigned to the DG by applicable laws and regulations.

The position of Director General is regulated by a fixed-term employment contract under private law that lasts a maximum of xxxxx years and is renewable.

On an annual basis, the DG presents a report on the activities carried out and the objectives achieved to the Academic Council, the Management Board, and the Evaluation Committee.

The DG appoints the manager who shall exercise his or her vicarial duties in the event of absence or impediment.

MANAGERIAL AREA FOR RESEARCH, TECHNOLOGICAL TRANSFER AND THIRD MISSION

Coordinates and supports activities pertaining to scientific research.

Contributes to the local social, economic, and cultural development, fosters the enhancement of scientific research results, promotes support for new businesses and innovative projects, lifelong learning, and continuing professional development. Coordinates third mission activities. Supports the development of public engagement strategies. Promotes sustainability. Supports international cooperation actions.

Secretarial office for the area

Secretarial support for the area. Accounting and bookkeeping. Contact point for data and transparency. Contact point for staff administrative mgmt. Administrative mgmt and accounting for the University's Strategic Centers.

Research Service

Coordinates and supports activities pertaining to scientific research.

Manages the University's research funding.

Sector for National research

Support and consultancy services for presenting project proposals within national and University-wide research projects.

Procedures for the activation and awarding of research grants.

Accounting for the scientific research fund.

Accounting and reporting for possible pre-tax donations allocated by Ministry in favour of scientific research.

Keeping and updating national databases for the collection of information regarding the University system.

Fulfilment of procedures for "secrecy clearance" ("*Nulla osta di segretezza*").

Support to accounting and reporting for national and University-wide research projects.

Ex-post audits and first-level audits requested by Ministry on projects.

Agreements and memorandums pertaining to national research.

Sector for European Union (and related Agencies) research

Agreements and memorandums pertaining to European research. Support and consultancy services for presenting project proposals within EU research programs and for the execution and mgmt of contracts pertaining to such projects.

Keeping and updating national databases for the collection of information regarding the University.

Direct contacts with NEO – National Erasmus+ Offices for Erasmus+ and Horizon Europe actions.

Planning events aimed at competitive participation in EU tenders

Support in accounting and reporting for EU projects.

Support to University initiatives aimed at encouraging European project drafting

Procedures for awarding the title of Visiting researcher to EU nationalities

Sector for International research and scientific cooperation

Support for the aforesaid actions and programs having non-EU nationalities.

Sector for Monitoring and assessment support for research and third mission

Monitoring research and third mission activities.

Analysis of Research quality assessment and of the third mission within the scope of fulfilments towards ANQA – National Center for Professional Education Quality Assurance Foundation or equivalent Institution.

Support to national and international assessment processes for Research and third mission.

Setting up and mgmt of the Research Product Catalogue and coordinating and monitoring product delivery.

Awarding of "Excellence departments and institutions" (if any): consultancy and technical support to facilities in the application, monitoring and reporting phase.

Service for Technological transfer of knowledge

Contributes to the local social, economic, and cultural development by handling all dialogue with businesses, bodies and associations, fosters the enhancement of scientific research results, promotes support for new businesses and innovative projects, lifelong learning, and continuing professional development.

Service for Third mission social, cultural, and environmental responsibility

Coordinates the University's third mission activities.

Promotes sustainability.

Service for International Cooperation Development

Provides support and consultancy services to the University and its OO.SS. for international cooperation and development activities that do not fall within programs and actions pertaining to didactics and research.

International cooperation and developments agreements and memorandums that do not fall within didactics and research.

Administrative mgmt and accounting for said initiatives.

ACCREDITATION AND QUALITY ASSURANCE POLICY

Being the KPI4HE project a CBHE Strand-3 action having structural reform aims and mandatory requirement in the composition of the partnership is the participation of the AM Ministry as direct partner.

KPI4HE, as projects under Strand-3 is supporting efforts in Armenia to develop coherent, inclusive and sustainable systems of HE to meet AM socio-economic needs and broad ambition to create a knowledge-driven economy. Mainstreaming and upscaling of successful results as well as synergies with ongoing or pipeline support in the area under bilateral support programmes are also elements of this Strand. As Structural Reform project, KPI4HE is addressing the AM needs to reform and modernise their systems by supporting sustainable, systemic and structural improvement and innovation at the level of the HE sectors. Accordingly, the project involves not only the competent National Authority (notably Ministry of Education), as well as other relevant authorities/bodies and stakeholders.

Keeping into account the Strand-3 projects aim, specific attention must be paid to the following requests from the Ministry and the Armenian Agency ANQA, being the overarching goal of "Alignment of Accreditation Standards":

- Revision of Armenia's institutional accreditation standards to ensure their full alignment with National Framework of Key Performance Indicators (NF-KPI).

- How to revise standards incorporate KPIs into accreditation processes, ensuring that HEIs are assessed holistically and in a way that encourages continuous improvement.

- Needed KPIs in enhancing governance, quality and sustainability in AM HE system.

Therefore, the present Operational Manual is integrated with a list of Internal Evaluation Process Indicators.

As reference of the University indicators reference sheet, the "Italian AVA guidelines for Self-assessment, Evaluation, Accreditation" have been considered, preceded by a section with general data, includes additional information about the overall educational offer of the University, the quantity of the teaching and technical-administrative staff, the financial and economic sustainability indicators. [7]

References:

[7] AVA is the periodic evaluation system based on criteria and indicators established ex ante by ANVUR, of the efficiency and results achieved in teaching and research by each single university and the university internal branches (mainly the Departments). The AVA system ("*Autovalutazione, Valutazione periodica, Accreditamento*" - Self-assessment, Periodic Evaluation, Accreditation) provides for the strengthening of the self-assessment of the quality and effectiveness of the teaching and research activities of universities, provides for the introduction of the periodic evaluation of the quality, efficiency and results achieved by the Departments.

ANVUR ("*Agenzia Nazionale per la Valutazione del sistema Universitario e della Ricerca*"), Agency for the evaluation of the university system and research, has been established in 2006 and reformed in 2010. It is the Italian Agency

that oversees the evaluation of the quality of HE education and research since 2011, carrying out its activities according to the principles of independence, impartiality, professionalism and transparency that are the basis of its work, and the ethical rules defined in its Code of Ethics.

The University indicators sheet is divided into 8 sections of indicators:

1. Indicators related to teaching (so-called group A),
2. Internationalization indicators (group B),
3. Quality indicators of research and of research environment (group C),
4. Indicators of financial economic sustainability (group D),
5. Additional indicators for the evaluation of teaching (group E),
6. Indicators relating to the study path and the regularity of careers (in-depth indicators),
7. Satisfaction and employability (in-depth indicators),
8. Teaching staff size and qualification (in-depth indicators).

Some elements listed in the below table have been adapted to the specific Armenian framework.

List of indicators in the University's Annual Monitoring Report

Section	Id. code	Indicator
Group A - Indicators related to teaching	iA1	Percentage of students enrolled within the normal course duration, who have acquired at least 40 CFU (i.e. ECTS) in the academic year
	iA2	Percentage of Bachelor's and Master's graduates within the normal course duration
	iA3	Percentage of first year Bachelor's students resident in other cities than Yerevan
	iA4	Percentage of first year Master's students that graduated in other Universities
	iA5 (A, B, C)	Regular students enrolled within the normal course duration / faculty ratio (tenured professors, tenured researchers, temporary researchers) (divided by medical-health area, scientific-technological area and humanistic-social area)
	iA6 (A, B, C)	Percentage of graduates employed at one year from the Bachelor's degree award (divided by medical-sanitary area, scientific-technological area and humanistic-social area)
	iA6BIS (A, B, C)	Percentage of graduates employed at one year from the Bachelor's degree award (divided by medical-sanitary area, scientific-technological area and humanistic-social area)

Section	Id. code	Indicator
	iA6TER (A, B, C)	Percentage of graduates employed at one year from the Bachelor's degree award (divided by medical-sanitary area, scientific-technological area and humanistic-social area)
	iA7 (A, B, C)	Percentage of graduates employed at three years from the Master's degree award (divided by medical-health area, scientific-technological area and humanistic-social area)
	iA7BIS (A, B, C)	Percentage of graduates employed at three years from the Master's degree award (distinguished by medical-health area, scientific-technological area and humanistic-social area)
	iA7TER (A, B, C)	Percentage of graduates employed at three years from the Master's degree award (divided by medical-health area, scientific-technological area and humanistic-social area)
	iA8	Percentage of tenured professors affiliated with core and characterizing scientific-disciplinary areas (Bachelor / Master), of which they are reference professors
	iA9	Proportion of Master's programmes exceeding the reference value of the indicator of the Quality of Research of Professors for Master's degrees, the so called "QRDLM" indicator (benchmark value: 0.8).
Group B – Internationalization indicators	iA10	Percentage of ECTS acquired abroad by regular students on total ECTS acquired by students enrolled within the normal course duration
	iA11	Percentage of Bachelor's and Master's graduates within the normal course duration, who have acquired at least 12 ECTS abroad
	iA12	Percentage of students enrolled in the first year of Bachelor's and Master's programmes, who obtained their previous degree abroad
Group C – Quality indicators of research and of research environment	iA_C_1A	Results of the latest assessment of research quality at site level (IRAS 1 = qualitative-quantitative indicator of expected university research outputs)
	iA_C_1B	Percentage of expected outputs on total Armenian Universities' ones
	iA_C_2	Average quality indicator of doctoral colleges (R + X average of the University)

Section	Id. code	Indicator
	iA_C_3	Percentage of first-year doctoral students who graduated in other Universities
	iA_C_4	Percentage of professors and researchers recruited in the previous year, who were not already working at the University
Group D – Indicators of financial economic sustainability	ISEF	Indicator of economic and financial sustainability
	IDEB	Indicator of financial indebtment costs
	IP	Indicator of personnel costs
	Id. code	Indicator

Section	Id. code	Indicator
	iA13	Percentage of ECTS obtained in the first year, compared to ECTS to be achieved
	iA14	Percentage of students who continue studying in the second year in the same degree class
	iA15	Percentage of students who continue studying in the second year in the same degree class, having acquired at least 20 ECTS by the first year
Group E – Additional indicators for the evaluation of teaching	iA15BIS	Percentage of students who continue studying in the second year in the same degree class, having acquired at least 1/3 of the ECTS expected in the first year
	iA16	Percentage of students who continue studying in the second year in the same degree class, having acquired at least 40 ECTS by the first year
	iA16bis	Percentage of students who continue studying in the second year in the same degree class, having acquired at least 2/3 of the ECTS expected in the first year
	iA17	Percentage of Bachelor's and Master's students who graduate within one year after the normal course duration, in the same degree class
	iA18	Percentage of graduates who would enroll again in the same study programme

Section	Id. code	Indicator
	iA19	Percentage of teaching hours delivered by tenured professors, i.e. employed on a permanent basis, out of the total number of teaching hours taught
	iA20	Tutors / enrolled students' ratio (for courses mainly or entirely taught in distance learning mode)
In-depth indicators, relating to the study path and the regularity of careers	iA21	Percentage of students pursuing a career in the university system in the second year
	iA21BIS	Percentage of students pursuing a career in the university system in the second year in the same University
	iA22	Percentage of Bachelor's and Master's students who graduate within the normal course duration, in the same degree class
	iA23	Percentage of students pursuing their career in the second year in a different study programme at the same University
	iA24	Percentage of dropouts from the degree class after N+1 years

Section	Id. code	Indicator
In-depth indicators - Satisfaction and employability	iA25	Proportion of graduates overall satisfied with the study programme
	iA26 (A, B, C)	Percentage of graduates (see note 1 below) employed at one year from the Master's degree award (divided by medical-health area, scientific-technological area and humanistic-social area). *Note 1*: graduates declaring that they are engaged in paid work or training (e.g. PhD with scholarship, medical specialization, etc.)
	iA26BIS (A, B, C)	Percentage of graduates (see note 2 below) employed at one year from the Master's degree award (divided by medical-health area, scientific-technological area and humanistic-social area). *Note 2*: graduates declaring that they are engaged in a work activity regulated by a contract, or engaged in paid training (e.g. PhD with scholarship, medical specialization, etc.)

	iA26TER (A, B, C)	Percentage of graduates (see note 3 below) employed at one year from the Master's degree award (divided by medical-health area, scientific-technological area and humanistic-social area). *Note 3*: graduates - except the unemployed engaged in unpaid training - declaring that they are engaged in a work activity regulated by a contract, or in paid training (e.g. PhD with scholarship, medical specialization, etc.)
In-depth indicators - Teaching staff size and qualification	iA27 (A, B, C)	Overall enrolled students / faculty ratio for the medical and health area
	iA28 (A, B, C)	Students enrolled in the first year / teachers of the first-year courses ratio (divided by medical-health area, scientific-technological area and humanistic-social area)
	iA29	Tutors holding a PhD / enrolled students' ratio (for courses mainly or entirely taught in distance learning mode)

THE ANALYSIS OF CONTEXT

The opportunity to carry out a shared context analysis activity (SWOT analysis) is confirmed.

The outputs of this task allow to focus on the strengths and areas for improvement of the University and the opportunities and obstacles coming from the reference scenario, a fundamental starting point for the identification of strategic lines and objectives consistent with international, national and regional agendas, responding to the actual needs of the community and sustainable with respect to the resources present in the University and their growth potential.

Consequently, in the Three-Year Program, the objectives outlined in the Strategic Plan are broken down into actions that, with a more limited time horizon, will guide the activities of the University in the different mission areas, identifying the interventions to be implemented, the resources allocated to them and the targets to be achieved.

According to the Ministry guidelines, the SWOT analysis can be carried out at external or internal level. The external evaluation process could be managed by the National Agency appointed for evaluation (i.e. ANQA) during a calendar of on-site visits or in occasion of regular accreditation visits of the Universities, if existing such calendar.

At internal level the SWOT analysis can be managed by the University Evaluation Unit, that is a collegial body having mixed (internal academic position and external experts) composition, having the task of evaluating the quality and effectiveness of the educational offering and research activity carried out by the relevant Units (Departments) as well as evaluating the effectiveness and efficiency of the Administration and its structure services (see also the "Governance" section).

Analysis of the external and internal context, the potential for global development of the University, ministerial indications, the results achieved in previous planning cycles and the results of internal and external monitoring and evaluation processes allow the identification of strengths, weaknesses, opportunities and threats, usually documented in a SWOT matrix, for each of the 'strategic areas' in which the University's strategic plans are usually structured. These should cover (and indeed do) at least the following areas:

– Education and Student Services Area
– Research Area
– Third Mission Area
– Management Area

but other strategic areas can also be planned (e.g., International Dimension Area, Sustainability Area, etc.).

The SWOT matrix is the main reference for defining the strategic plan. Indeed, the fundamental objective of a strategic plan should be to exploit strengths, resolve or at least improve weaknesses, exploit external opportunities, and guard against external threats.

SWOT Analysis	Factors useful for achieving objectives	Factors damaging to achievement of objectives
Internal elements (recognized as constitutive of the organization to be analysed)	Strength points	Weakness points
External elements (recognized in the context of the organization to be analysed)	Opportunities	Threats

GLOSSARY

Accountability

Refers to being accountable for the results of an action. Its meaning differs from "responsibility" which, on the other hand, refers to having to perform a certain action. Accountability is shown by ensuring that systems that provide information on a certain entity are implemented, so as to allow for sound judgements and decisions that lead to resource allocation and goal achievement.

Action plan

A coordinated set of actions that an organization plans to carry out in order to support the implementation of its strategy and the attainment of the desired results.

Balanced Scorecard (BSC)

A BSC is a performance management and measurement system. As such, this tool aims to implement strategies and oversee their execution by defining performance goals to achieve, indicators to monitor the progress made, targets to establish the expected levels, initiatives to support their pursuit, divided into a series of perspectives linked by cause-effect relationships.

Benchmarking

A process that makes it possible to identifies, understand and import - adapting them as needed – best practices that have been developed in other contexts, in order to improve organizational performances. Benchmarking analyses can be carried out on strategies, processes, and products and services. A benchmark is a point of reference for comparison or measurement purposes, and it indicates the best possible performance.

Cascading

Starting from a performance measurement system on an organizational level, subsystems are developed for each Department/Direction and then for each Service and Operational Unit, respecting both a vertical coherence (with higher-level systems) and a horizontal one (with same-level systems) in order to build a well-integrated framework with aligned purposes. Every person that is involved within this framework must be able to identify their own personal contribution towards the fulfilment of the general strategic goals pursued by the organization.

Full Time Equivalent (FTE)

A method that is frequently used to unambiguously measure the number of staff members in a company, for their scheduling and rightsizing.

The FTE is mainly used to indicate the planned or actual effort required to carry out an activity or a project in terms of full-time resources. The FTE is equal to a person working full-time (regardless of their type of employment contract).

Grading

Matches the various degrees of target attainment and blurs the corresponding maximum score of 100, based on the gap/delta (deviation) from the target that is not fully attained, and predefines intermediate tolerance levels between the maximum degree of attainment of 100 and the minimum degree of attainment of 0, to which the corresponding intermediate scores must be matched.

Human capital

The available knowledge, skills, know-how, good health, and education that can shape the behaviors necessary to successfully carry out the activities required by the organization's strategy.

Indicator

A multidimensional tool that allows for the acquisition of information regarding an item's properties.

Key Performance Indicator (KPI)

In business economics, a Key Performance Indicator is an indicator of a process's performance. Defining performance indicators is key to measuring and monitoring an organization's performance.

KPIs are usually established based on management's demands (top-down analysis) or on the elementary factors in the process (bottom-up analysis).

Materiality matrix

The collection of data, as required by the Global Reporting Initiative GRI Standard Guidelines, regarding the significance of a set of areas for the company and its most significant Stakeholders. It identifies the issues that are most relevant and necessary to ensure a full understanding of the entity's activities, their performance, and their economic, social and environmental impact.

Mission

Defines the ultimate purposes for which the organization was created, as well as the means through which its vision shall be attained.

Objective

One of the goals that the organization aims to achieve in order to successfully carry out its strategy. It is usually stated with a brief description that must be complemented by a more detailed one to avoid any ambiguity in its meaning.

Outcome

The impact or ultimate result of an action. In performance measurement, outcomes indicate the consequences of an action or process from the perspective of the service user or, more generally, of any stakeholders; outcomes may include: improving living conditions, citizens' health, etc. An outcome may refer to the immediate result of a service or action (eg. a reduction in university dropout rates) or to the final achieved state (e.g. an increase in qualified workers).

Output

The result, product or consequence arising from a particular action or process. Each action may be described in a system with expended inputs and achieved outputs according to the logical chain input > action > output.

Performance

Performance is a polysemous word. Its main meaning refers to the act of performing an action and the process that follows. The verb "to perform" typically refers to building an object or carrying out a task. Another meaning of performance has to do with depicting an action, with a more symbolic and, perhaps, ritual meaning. From a management perspective, both meanings must be taken into account when measuring and/or managing performance.

Performance Management System

A system that supports a systematic approach to performance improvement, which defines the objectives that must be achieved by the end of the term, and uses data from the performance measurement system to learn from experience and improve performance through corrective actions and decision-making during said term.

Performance Measurement

An experimental and formalized process that aims to gain and express information that describes the properties of an item (eg. a process, an activity, a group of people).

Performance Measurement System

A set of performance measurement tools that can be adopted by an organization in order to pursue its objectives and measure performance within a business system or a part of it, such as an individual, a group of people, or a set of one or more business processes.

It aims to acquire, classify, compare, analyse and interpret appropriate data in order to achieve a measurement of the results, or consequences, of the actions that have been carried out. A measurement system has two main functions – data acquisition system and data representation system – and is made up of indicators, targets, and infrastructure and support resources.

Perspective

In the Balanced Scorecard meaning, the term perspective refers to a "container" that holds groups of objectives and their indicators, targets, and initiatives. Perspectives are the viewpoints from which to view the organization and articulate the strategic map and the Balanced Scorecard.

Quality

Quality is the degree to which the University carries out its didactic, scientific, and third mission objectives that, in accordance with the guidelines laid out in the University's planning documents, aim to:
- prepare students for an active citizenship and for their future role in society, assisting them in their cultural journey, in harmony with their motivations, expectations and personal perspectives;
- create a broad and advanced knowledge base;
- take part and encourage research and innovation in society.

From a corporate point of view, quality can be:
- expected quality: referring to the quality standards deemed appropriate by the user;
- planned quality: the quality that the organization aims to achieve, by trying to translate the user's needs into requirements to be met;
- delivered quality: the quality associated with a product/service at the end of the production or delivery process. It refers to the quality levels that have actually been achieved and that may differ from the planned ones;
- perceived quality: the quality that the user observes within the product/service, which expresses the user's degree of satisfaction;
- compared quality: the quality that the user compares to previous experiences, to the market, and, above all, to competitors.

Stakeholder

A stakeholder is any group or individual that may affect or be affected by the organization's attainment of its objectives.

Strategy

Within a public organization, "strategy" refers to the actions that the organization chooses to carry out in order to create public value for the community, in conformity with the policies, the regulatory framework, and the limits imposed by the allocated resources.

Strategy map

A visual representation of an organization's strategy, which highlights the cause-effect relationships between the goals that describe the strategy along the perspectives that make up the architecture of the map itself.

SWOT Analysis

An activity required prior to drafting the Strategic Plan, which examines internal and external conditions in which the organization is currently operating and is expected to operate in the near future. This activity aims to highlight the **Opportunities** to exploit and the **Threats** to tackle (external context analysis), as well as the organization's **Strengths** and **Weaknesses** (internal environment analysis). The result of this analysis is, on the one hand, to highlight strategic topics to be addressed and strategic criticalities to be overcome; on the other, to bring forth the future evolution of the organization and its environment (strategic hiring).

Target

A target is the result that a subject aims to attain, or the desired value corresponding to an activity or process. Typically, this value is expressed in terms of a performance level within a specific time frame (e.g. 20 procedures carried out in 3 working hours) and may refer to strategic and operational objectives alike.

Values

The principles that inform the actions of the people that make up the organization. They specify the belief system and the code of acceptable and unacceptable behaviours within the organization.

Vision

Defines the ambition, the main goal that the organization aims to achieve. The vision is tied to a long-term perspective and, if there is a consensus view, it guides the organization.