UNIUNEA EUROPEANĂ

Fondul Social European
POSDRU 2007-2013

Instrumente Structurale
2007-2013

MINISTERUL EDUCAȚIEI ȘI CERCETĂRII ȘTIINȚIFICE

OIPOSDRU

National Strategy

for Tertiary Education in Romania

2015 – 2020

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Abbreviations and Acronyms

ARACIS	Romanian Agency for Quality Assurance in Higher Education
CNATDCU	National Council for Attesting Titles, Diplomas and Certificates
CSR	Country Specific Recommendations
EC	European Commission
EQAR	European Quality Assurance Register for Higher Education
ESIF	European Structural & Investment Funds
EU	European Union
GDP	Gross Domestic Product
GoR	Government of Romania
HE	Higher Education
HEIs	Higher Education Institutions
ICT	Information and Communication Technology
LLL	Lifelong Learning
MESR	Ministry of Education and Scientific Research
NIS	National Institute for Statistics
NQA	National Qualifications Authority
NRP	National Reform Programme
OECD	Organization for Economic Cooperation and Development
OPHRD	Operational Program for Human Resources Development
SFITEAQE	Strategic Framework for Increasing Tertiary Education Attainment, Quality, and Efficiency
TE	Tertiary Education
TEIs	Tertiary Education Institutions
TO	Thematic Objective
VET	Vocational and technical education
WB	World Bank

I. Introduction

The National Strategy for Tertiary Education proposes the implementation of a set of measures and the development of new legislative and sectoral initiatives that **target increasing the tertiary education attainment, quality, and efficiency in Romania.**

The interventions proposed in this strategy are promoting tertiary sector as a driving element in the knowledge-base, high skill economic growth. Although low labor costs in Romania have been the key to attracting new jobs within Europe, Romania's present development stage requires the country's industries to develop more efficient production processes and to increase product quality. Achieving this goal will depend at least in part on having a domestic workforce with enough tertiary-educated workers who possess the necessary skills, competencies, and abilities.

Creation of a domestic knowledge economy, which can form the nucleus of a more prosperous future, depends upon sustained improvements to the country's knowledge base and to its stock of human capital.

Education and training are at the core of the European Strategy for 2020[1]. The tertiary education, as the EU Agenda for the Modernization of HE for Europe states, "… plays a crucial role in individual and societal advancement, and in providing the highly skilled human capital and the articulate citizens that Europe needs to create jobs, economic growth and prosperity."[2]

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[1] Europe 2020, A strategy for smart, sustainable and inclusive growth. Communication from the Commission COM(2010) 2020 final: p 11, 32

[2] European Commission (2011) 'Supporting growth and jobs – An agenda for the modernization of Europe's higher education systems.' Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions. COM (2011) 567 final, SEC (2011) 1063.

In the Country Specific Recommendations: Romania 2015[3](CSR), the European Commission considers that the skills and competencies developed during tertiary education are not correlated with those demanded by the labor market. This strategy is based on the observations and concerns above-mentioned and sets the grounds for the improvement of tertiary education in Romania, being paramount in achieving the strategic educational objectives set out in the Partnership Agreement 2014-2020.

II. Context

Education Sector Context

The Government's strategy to achieve Europe 2020 targets includes lines of action and measures targeting the educational system, and focuses on education and training objectives, due to their influence on economic growth. This influence is reflected in higher employment, productivity, participation, skills training etc. Table 1 shows four education-related targets for the Europe 2020. Strategy and Romania's targets.

Table 1. Europe 2020 Strategy Targets – State of Play

Europa 2020 Targets	Romania Targets (%)	Romania in 2013/2014 (%)
75% of the population aged 20–64 should be employed	**70**	65.4 (fourth quarter of 2014)
The share of early school leavers should be under 10%	**11.3**	18.5 (third quarter of 2014)
At least 40% of 30–34 year-olds should have completed tertiary education	**26.7**	23.8 (third quarter of 2014)
At least 15% of 25-64 year-olds should participate in lifelong learning	**10**	1.8 (2013)

Source: *European Commission*

[3] 2015. Recommendation on Romania's National Reform Programme for 2015 that includes an opinion of the Council for Romania's convergence program for 2015.

If current projections hold, **the number of students will decline by 40 percent by 2025**[4], prompting the need for education reforms that address quality, efficiency, equity and relevance. The declining working and student populations have immediate and long-term implications for Romania's human capital and macroeconomic agenda to promote employment and economic growth. Human capital is critical to Romania's service and agriculture sectors, which account for the largest share of the country's employment.

The rural population has the lowest participation rate when it comes to education and training at various levels. Roughly 45 percent of all Romanian youth live in rural areas, but according to current data from the INS, only 24 percent of enrolled students come from rural areas. Early school leaving is overwhelmingly a rural problem in Romania: the dropout rate was about 1.5 times higher in rural secondary schools than in urban ones. As students' progress through the education system, the significant underrepresentation of rural youth worsens through higher education.

The Lifelong Learning Programs (LLL) in place are often difficult to access, because of the reduced number of training centers in rural and disadvantaged areas, and also the reduction in the offer of VET training centers, as of 2009. Lack of funds along with the poor information on existing LLL programs and labor market opportunities are important causes for this situation.

Early school leaving and non-participation contribute to the relatively low levels recorded by Romania in regard to compulsory education. For those impacted, life changes, access to employment and social inclusion show high risks.

National tertiary education[5] policy context

This Strategy must be understood within the context of Romania's current national policy framework. The national framework includes important legislative initiatives and programs, with high impact on tertiary education, elements that led to significant improvements to the tertiary education sector such as improved autonomy for institutions, funding model revisions, and coordination with the Bologna Process.

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[4] Compared with 2005 levels

[5] For the purposes of this strategy and respecting the 2011 Education Law, as subsequently amended and supplemented, 'tertiary education' is defined as that educational sector encompassing university and non-university tertiary education (post high schools).

The Ministry of Education and Scientific Research and its affiliated organizations have invested in the development of the tertiary education sector. Public universities in Romania currently receive almost RON 1.8 billion lei per year as core funding.

Between 2012 and 2015, the funding levels have seen a progressive trend, in all chapters. In 2014, the education received almost RON 2 billion more than in 2013. Even if the level of funding was directed towards a policy of continuous growth, it is still at a level that raises great expectations both for the educational institutions and for the ministerial and governmental decision-makers.

Table 2. Funds allocated to public higher education in 2012-2015

No.	Funding category	2012	2013	2014	2015*
1	**Core funding**	1,678,705,000	1,774,905,000	1,940,821,034	1,797,115,000
2	**Scholarships**	216,181,954	232,863,973	210,945,823	183,588,872
3	**Students` transportation**	22,032,000	26,580,000	29,050,000	26,590,000
4	**Dormitories, cafeteria**	124,695,000	131,096,000	149,349,851	132,717,067
5	**Capital (investment objectives and other expenses)**	188,017,651	76,691,500	132,063,640	133,574,000

* For January-October 2015

In view of promoting the quality of the educational system and the initial and ongoing training, including higher education and research, 337 projects amounting to RON 1,158,665,701.02 were implemented between 2007 and 2015.

The outcomes of their implementation were: 1,090 developed/updated qualifications, out of which 795 validated; 1,402 bachelor/master programs developed/adapted according to the National Council for Scientific Research in Higher Education (CNCIS); 455 bachelor/master programs implemented according to CNCIS; 96 universities accredited in line with the quality standards; 6,690 PhD candidates who received support; 5,366 financially assisted post-doctoral researchers; 17,629 presented scientific papers-doctoral programs; 9,160 presented scientific papers - post doctoral research.

In this respect, the European Social Fund played an important role in co-funding interventions aimed at supporting quality assurance in higher education, rolling out doctoral and post-doctoral programs in research, facilitating students` transition from the university to the labor market.

The initiatives designed to support the transition from tertiary education to working life have resulted in 274 projects for students. The amount contracted for the implementation of these projects is of € 253.75 mil.

III. Vision

The vision for tertiary education in Romania 2015-2020 is based on information gathered during two stages of face to face and online consultations, conducted between July 2013 and May 2014.
This vision takes into account the priorities for tertiary education set out in the Romanian 2012 National Reform Programme (NRP)[6], which focuses on five (5) aspects:

- The development of the National Qualifications Framework;
- The development of a system for the recognition of skills and competencies acquired in non-formal or informal context for entry into TE;
- The analysis of insertion of graduates in labor market;
- Increasing participation in TE via financial stimuli; and
- Development of a LLL system.

At the core of this new vision for tertiary education in Romania is the ambition for Romania to join the ranks of the advanced economies of Europe by 2030. In accomplishing this goal, in 2020 Romania will have a high-performing tertiary education sector that can energize economic growth, contribute to increase productivity, and promote social cohesion, thus serving as the foundation of a knowledge-based economy.

The Higher Education sector will prepare specialists who can develop a competitive society in the global economy. Higher education institutions will be able to catalyze creativity and innovation throughout Romanian society and, in particular, will assist industry in developing products and services.

[6] Government of Romania (2012) National Reform Programme, Bucharest.

A thorough examination of the current realities of the Romanian tertiary education sector exposed the following issues as the main barriers to achieving these ambitions:

- After a surge in enrollments in the early 1990s, gross enrollment figures have been declining since 2007-2008, forcing the sector to re-evaluate its student base and relevance.
- The funding models are not agile enough to provide incentives for modernization, efficiencies, innovation, or equity.
- The quality of tertiary education across the sector is uneven, particularly in the private and non-university tertiary education sectors.
- Labor market alignment—particularly with regard to transversal, 'soft' skills—must be strengthened.
- Rural, poor, and under-represented minority attainment in higher education are disproportionately lower than urban, higher income student attainment.
- International mobility and exchanges for students and academic staff are well-below EU averages.

The aspects mentioned before form foundations for action in this National Strategy for Improving Tertiary Education Attainment, Quality, and Efficiency.

The strategy relies on three main assumptions:

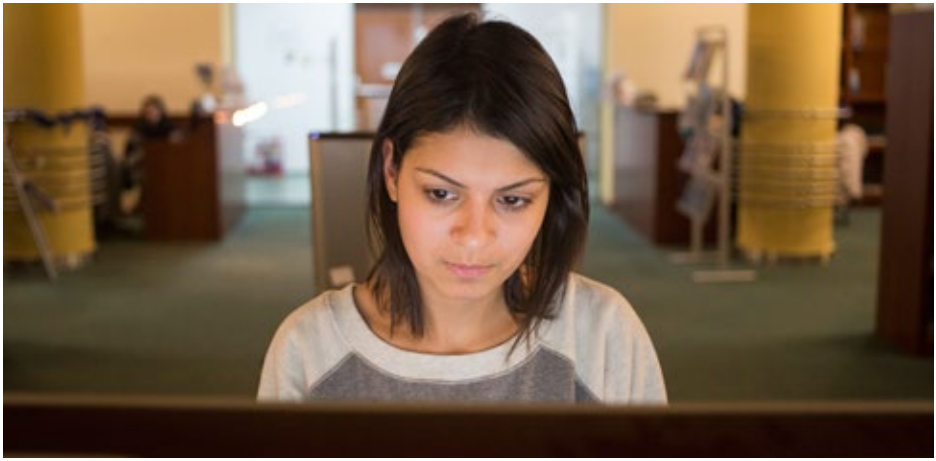
- Romania is committed to the coordination and cooperation for opportunities afforded by the European Union and its member states and has utilized EU core documents and policy directives in developing this strategy;
- Romania is committed to global best practices in building the most relevant, effective, and efficient tertiary education sector possible, with perspectives on the short-, medium-, and long-term strengths and weaknesses therein; and
- Romania is committed to ensuring that its tertiary education sector is a powerful tool in its overall socioeconomic development strategy, supporting all other state development plans and initiatives, and, in particular, the National Reform Programme, the National Strategy for Competitiveness 2014-2020 and the Strategy for Research Development and Innovation.

IV. National Strategy for Increasing Tertiary Education Attainment, Quality, and Efficiency

The vision for tertiary education in Romania 2015-2020 is elaborated as an entwined structure of *enabling conditions and pillars*, which will be supported by several near-, medium-, and long-term initiatives. This vision is illustrated in Figure 1, which depicts how the enabling conditions support key drivers for success across the tertiary sector, targeted at improved attainment, quality, and relevance for the tertiary sector.

To make this vision a reality, the strategy focuses on four main action areas:

i. strengthening governance, financing, monitoring and evaluation of tertiary education (the 'enabling conditions');
ii. promoting and encouraging broad tertiary education attainment, particularly for underrepresented groups;
iii. improving quality and relevance of tertiary education; and
iv. Fostering engagement with the economy, especially as related to the labor market and innovation/entrepreneurship (figure 1).



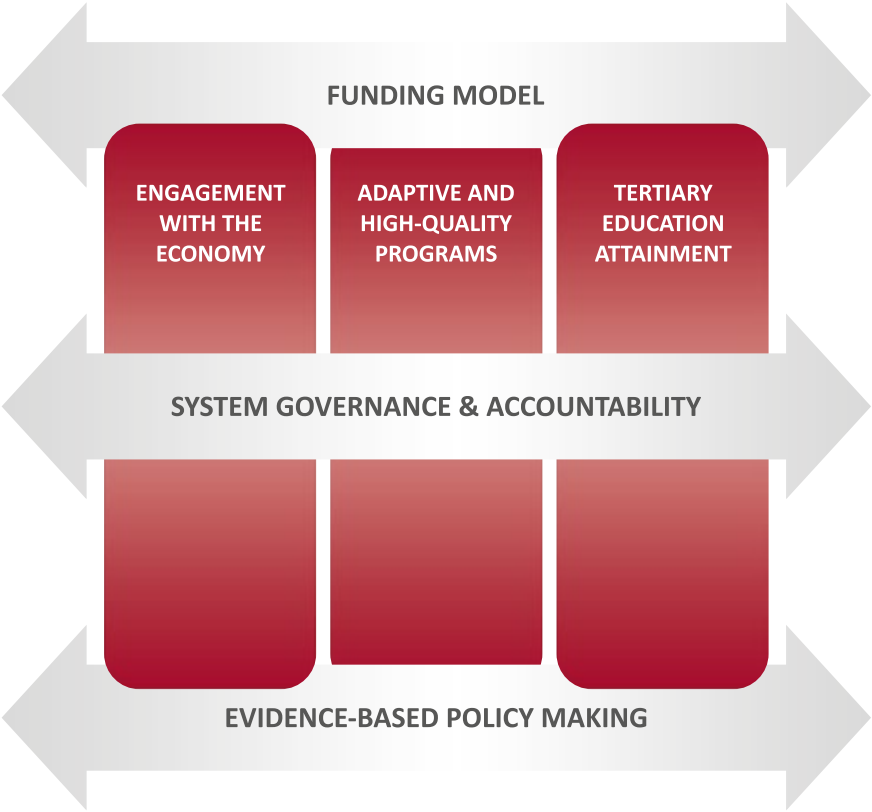


Figure 1. The Strategic Vision

Implementing the strategy in its entirety is expected to cost approximately €2.1 billion, between 2015 and 2020 and use €465.51 million from ESIF funds under Thematic Objective 10.

In order to achieve these objectives, the budgets include the most important activities intended to reach the largest number of direct beneficiaries, such as ensuring scholarships and developing an effective and efficient student loan scheme.

It is estimated that the strategy will have an impact on at over 625,500 people, including the 58,000 individuals who are needed to increase the cohort of 30–34 year-olds with completed tertiary education to 26.7 percent by 2020.

V. Key Strategic Actions: Establishing Enabling Conditions and Supporting Pillars

A. Enabling Conditions

MESR will address three main areas: Finance, Governance and Accountability, and Institutionalization of Evidence-Based Policy-Making. All national tertiary education systems are recalibrated along these areas either in response to current concerns or in anticipation of new policy objectives—defined in this strategy as the 'pillars.'

Improvements in these "enabling conditions" are foundational for progress on any potential strategy.

The focus of this strategy, therefore, is first on these enabling conditions, since they must be resilient enough to reflect and/or support the work required by the pillars.

FUNDING MODEL:

- Increase the amount of funding allocated to tertiary education progressively over the next several years;
- Allocate supplemental funding via performance funding to steer the system towards policy objectives and desired outcomes;
- Priority allocation of funds towards areas with growth potential.

SYSTEM GOVERNANCE & ACCOUNTABILITY:

- Increase the role and representation of key stakeholders, especially external stakeholders, in governance;
- Recalibrate level of institutional autonomy with accountability for performance against well-defined expectations;
- Conduct a data-driven classification exercise that respects the diverse missions of institutions.

EVIDENCE-BASED POLICY MAKING:

- Create national data framework which will integrate data collection and publication at national level with relevant aspects publicly available on the web;
- Train MESR and institutional officials in institutional research and data systems.

Figure 2. Enabling Conditions

In the context of Romania's tertiary education sector, the key characteristics of these enabling conditions reflect the following fundamental conditions for a successful tertiary education sector:

I. **Establishing an agile and impactful funding model can promote innovation and behaviors necessary to achieve the national goals and interests for the sector.** A high performing tertiary education sector is supported by a funding model that ensures efficient use of resources; allocates funding in the context of institutional performance toward policy objectives and desired outcomes; and provides flexibility to promote innovation and improvements in teaching quality and research.

II. **Institutional autonomy and accountability are fundamental to enabling adaptive and high-impact tertiary education opportunities at all levels.** Without improved governance and accountability, the government's ability to steer change will be significantly compromised. A high performing tertiary education sector matches the level of operational autonomy with accountability for performance against well-defined expectations; enables regular and open communication with stakeholders; and fosters the development of high quality, results-oriented leadership and management.

III. **Collecting and utilizing data in support of evidence-based decision making must underpin every element of the tertiary education system.** Without an expanded capacity for evidence-based analysis, the ability to monitor the development and outcomes of strategic initiatives and the ability to make policy adjustments as events develop will be effectively impossible. A high performing tertiary education sector collects and uses reliable and consistent data on the outcomes of tertiary education; provides mechanisms for ongoing evaluation of performance at the program, institution, and system levels; and feeds educational outcomes and performance metrics through continued improvement processes. It is necessary to take ownership and develop a quality culture that would make academic members strive to continuously improve their activity, based on the collected data.

A number of significant changes must be made in each of these areas to establish the necessary foundations for the implementation of a national strategy.

In order to implement the actions under this Strategy, MESR shall benefit from the support of advisory bodies with responsibilities in higher education and from that of the social dialogue partners (student associations, trade union federations, representatives of local authorities, employers and civil society).

Enabling Condition 1: Assuring Adequate and Efficient Funding

Expenditures on post-secondary education in Romania are just over 1.1% of GDP, with roughly 0.8% of GDP spending on post-secondary education coming from the public sector. While this is consistent with the OECD-wide average and similar to other countries in the region, Romania's GDP is well below the European average. Having a similar level of public expenditure, therefore, in reality means a much smaller amount of money.

Moreover, while the expenditure in HE as a proportion of the GDP is not far from the European average of 1.3%, the EU considers this investment too low compared to the US and Japan where investment in HE is 2.7 % and 1.5 % respectively[7]. The EU recommendation for investment in tertiary education for its Member States is 2% of the GDP, as stated in an EC Communication from 2005[8] and reiterated by one of the seven Flagship Initiatives of the Europe 2020 Strategy.

New models of public funding to students, combining grants and/or loans to cover both living expenses and, where they exist, tuition fees are necessary. The EC Accompanying Document recognizes the rise in private expenditures on higher education—by students and their families—and encourages Member States to consider innovations in public funding, including expanding student loan opportunities and reassessments of the criteria by which public grants are provided to students.

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[7] European Commission (2011), 'Supporting growth and jobs – An agenda for the modernisation of Europe's higher education systems.', ibid

[8] The minimum investment required for knowledge-intensive economies (public and private funding combined), is 2% of the GDP according to Flagship Initiative "Youth on the Move" that refers to the EC Communication 17 COM (2005) 15. See: "Youth on the Move. An initiative to unleash the potential of young people to achieve smart, sustainable and inclusive growth in the European Union." Communication from the commission to the European parliament, the Council, the European economic and social committee and the committee of the regions: p. 8. COM (2010) 477 final version.

MESR will avoid supplementing in excess the funds for the base budgets. With a reasonably reformed funding model, institutions will have healthier base budgets and should not need additional public money to meet their basic needs. Any additional money which can be obtained through government sources should therefore be held centrally and used either for strategic initiatives (capacity building, innovation, equity, etc.) or for incentivizing institutions based on outputs or outcomes. With such planning, the government may have greater ability to steer the sector by creating alternative financing schemes rather than just growing base budgets. The goal will be to commit at least 10% of the overall higher education budget (net of any support from structural funds) for the purpose of reaching central strategic objectives.

One way of achieving both diversification and good quality of outputs simultaneously is to establish a multiplicity of financial rewards for institutions and then allow them to compete for each one.[9] For instance, a certain amount of money will be made available for institutions who performed well in research output based on a pre-determined and agreed indicator (number of articles placed in ISI-indexed journals, for instance). Another competitive award will focus on achieving excellence in curriculum re-design or in creating partnerships with local industry. Still others grants will reward post-graduation employment rates, or increased enrollment of rural students from under-represented backgrounds, or innovative teaching strategies, or excellence in distance learning, as deemed most appropriate. Funding for these incentives may be taken from additional funding or from own funds.

Such a strategy is one of "incentivization and competition." The specific outputs rewarded by such a strategy will be many and varied, to allow institutions a chance to specialize and find their own niches. These sets of results, out of which the ministry can choose to stimulate HEIs must:

a. be specific enough;
b. foster real competition.

If additional financing fully covers one or two issues (e.g. number of students enrolled, research results), then the incentive will be for all of us to move in the same direction. Some of these outputs may be easy to quantify (e.g. number of Roma students, number of scientific publications); others may require more labor-intensive, subjective techniques (e.g. for innovative teaching).

[9] Another way is the development of rankings such as the U-Multirank launched by the EU in 2012, http://www.u-portal.org/u-multirank/.

Strategic Directions	
Objective	**Measure / Action**
Provide sufficient funding to support high quality, relevant, efficient universities	Increase the amount of funding allocated to tertiary education progressively over the next several years
Allocate funding in the context of institutional performance towards policy objectives and desired outcomes	Allocate supplemental funding (pilot program) via performance funding to steer the system towards policy objectives and desired outcomes

Enabling Condition 2: Promoting Effective Governance

MESR currently validates the legality and analyzes the thesis of all doctoral candidates ultimately to make a proposal on the awarding of the doctoral title. Similarly, the right to award doctoral degrees is managed by government not the academic community. As of the 2009-2010 academic year, for example, a total of 58 institutions had been granted the right to develop doctoral study programs. To achieve approval, public and private universities applied to the National Council for the Attestation of University Degrees and underwent an evaluation by ARACIS of their institutional capacity to offer the degree. The ministry's further verification of doctoral candidate's qualifications is inefficient and duplicates the assessment carried out both by universities and by ARACIS as part of the quality assurance process.

In Romania, the power of decision in the universities rests with the Senate and Board of Directors, the decision-making bodies that don`t necessarily have an external representation. According to the law, the Senate, which is the university's highest decision-making body has a membership composed of 75% academic staff, 25% students. The external representation in university structures is possible but not mandatory. According to the 2011 Education Law, as subsequenthy amended and supplemented, universities "may" develop advisory structures with membership from external structures, but there is no requirement to do so. The only time that external stakeholders are legally required to be included in university business is if, during the process of selecting a rector, a majority of the academic staff votes to select a rector by "public contest" rather than "universal suffrage," then 50% of the membership of the selection commission must be external, though these external members are still limited to persons deemed "scientific and academic personalities." By promoting a greater involvement in the decision-making, from stakeholders outside the universities, public trust in the university activity can be strengthened, the foundations for better relations between universities, the business environment

and the civil society can be laid, and even the internationalization of Romanian universities could be developed.

The 2011 EU Agenda for the Modernization of Europe focused on the issue of autonomy and the importance of flexible governance and funding systems, which balance greater autonomy for education institutions with accountability to all stakeholders. Autonomy helps in fostering diversification within higher education systems. The EC also promoted autonomy as a fundamental requirement for innovation.[10] Balancing autonomy and accountability at Romanian HE institutions has been challenging, and should be supported by a leadership development program geared towards preparing current and future leaders for the increasing administrative complexity of tertiary education in Romania.

Another method for assessing comparative quality is to utilize rankings based on reasonably objective indicators. One method for such comparisons is to use proxy measures such as the number of institutions achieving a place in the top 400 or 500 of one of the recognized international rankings. Outside of the world's major centers of academic production (e.g. US, UK, Japan), however, such rankings can only really provide information about the relative performance of a country's one or two flagship institutions, not the system as a whole. For that, one can turn to the U21 rankings of systems of education, which has been produced since 2012. These rankings measure national systems of education in terms of Resources, Environment, Connectivity and Output. In the most recent version of these rankings, Romania was ranked 39th out of 50 countries, ahead of Argentina, Brazil and China.

The classification system should be based on indicators such as those that evaluate the results of teaching / learning and research processes or the relevance of qualifications for the socio – economic environment, the social and development-driving role of the institution and the degree of internationalization of the activities.

[10] "Delivering in the Modernisation Agenda for Universities: Education, Research and Innovation." Communication from the Commission to the Council and the European Parliament. 10.5.2006. COM (2006) 208 final. Retrieved 1 Apr 2014 from http://bit.ly/1f0a6Me; Cited in Commission Working Document on recent development; ibid: p. 48.

The most useful, though still subjective, sources for comparative data on education for competitiveness, therefore, may be those which are produced by survey-based measures from projects like the World Economic Forum's Global Competitiveness Report (GCR). Among many other things, the GCR asks business executives in 148 countries a range of questions about the quality of tertiary education, the quality of graduates and the quality of tertiary education business interaction. Though responses could not be classified as "scientific", they still provide useful insights into the perceptions of precisely the people who control investment in an economy. For tertiary education to unlock future investment and provide the best quality education available, those respondents are the ones whose perceptions of satisfaction Romania should better understand. Though perceptions are not directly useful in understanding quality, they are important indicators of the reputation of the sector to local and international employers. These and other such assessments of the competitiveness of the sector are challenging but provide vital comparative data, so that Romania can better assess its position in the European and international economic system and in the education system.

Strategic Directions	
Objective	**Measure / Action**
Engage stakeholders in the process of identifying and pursuing strategic objectives for the sector	Increase the role and representation of key stakeholders, especially external stakeholders, in governance
Match level of operational autonomy with accountability for performance against well-defined expectations	Recalibrate level of institutional autonomy (e.g., doctoral degrees, academic appointments, etc.) with accountability for performance against well-defined expectations
Ensure transparency of the university classification process	Conduct a data-driven classification exercise that respects the diverse missions of institutions

Enabling Condition 3: Utilizing Data Monitoring and Evaluation for Evidence-Based Policymaking

Increasing the efficiency of higher education system in Romania is linked to having a complex and comprehensive set of data. In this context, substantiated decisions can be made and institutions can become more accountable. Without data related to outputs, higher education institutions will not be able to show their progress and MESR will not be able to measure system-level progress. Moreover, the data held by the Ministry and the National Institute of Statistics currently differs significantly. Unless the databases and the reporting procedures become compatible, MESR and the institutions under its subordination and coordination won`t have relevant measurement systems, others then the input-based ones currently used.

For greatest efficiency, data generation and sharing needs to be regularized and standardized, both at the national and institutional level. A national framework for higher education data will be adopted as a top priority. It will focus especially on the areas covered in this strategy and be based partly on institutional data and partly on national data gathered through surveys. Some required data elements include the following:

Subject	Description	Data Source
Admissions	Data from institutions on number of new students by program and program type, place of origin (intl./domestic), prior education, etc. (annually)	Institutions
Social Inclusion	Data on socio-economic, ethnic, disability backgrounds, etc. of new students (odd years)	Government survey
Professoriate	Data on rank, pay & qualifications of staff (annually)	Institutions
Government finances	Data on payments made to each institution by type (annually)	Government administrative data
Institutional finances	Data on income from various sources (government, students, other), plus expenditures by type (academic salaries, non-academic salaries, IT, etc.) (annually)	Institutions

Student engagement/ financial survey	Survey data from student which describe the quality and extent of their engagement and experiences, as well as questions about income and expenditure (even years)	Mandatory institutional surveys, with government support
Attrition data	Data on students enrolled in previous year who did not return & students newly enrolled who were previously at another institution (annually)	Institutional data
Graduation data	Number of graduates by program/field of study	Institutional
Graduate Survey	Following up on graduates 24 months after graduation to examine questions of employment, income, further education plans, satisfaction, etc.	Mandatory institutional surveys, with government support
Employers survey	Survey of employers to ask about satisfaction with recent graduates, whether skills are improving or worsening, areas for improvement	Mandatory institutional surveys, with government support

The development and deployment of a standard graduates survey (tracer study) will be conducted by each institution, to ensure regular, comparable data is available for all institutions and for the foreseeable future. As part of the national data framework, a standard survey of graduates (tracer study) should be administered on a regular basis by institutions. Some of the data will be used to create institutional and national quantitative statistics regarding graduate satisfaction and labor market outcomes; other data might be more qualitative and focus on program improvement at the faculty/department level. To the extent reasonable, institutions will be allowed to customize some of the data to maximize their own benefit of the surveys while maintaining a solid core of questions standardized at the national level so as to permit construction of reliable national indicators.

According to the 2011 Education Law, as subsequently amended and supplemented, the academic transcripts and corresponding IT systems of all universities were to be integrated under a program referred to as the Single Registry of Romanian Universities or "RMUR." An established tracer study initiative will connect this core academic performance information with post-graduate data, providing useful information to prospective students, employers, and institutions. The post-graduate data will need to be collected periodically or, as an alternative, the RMUR database could be connected with another of Romania's administrative databases (e.g., pension/social security).

Strategic Directions	
Objective	**Measure / Action**
Engage stakeholders in the process of identifying and pursuing strategic objectives for the sector	Increase the role and representation of key stakeholders, especially external stakeholders, in governance
Match level of operational autonomy with accountability for performance against well-defined expectations	Recalibrate level of institutional autonomy (e.g., doctoral degrees, academic appointments, etc.) with accountability for performance against well-defined expectations
Make relevant student and employer data public to inform selection	Conduct a data-driven classification exercise that respects the diverse missions of institutions
Provide transparency to key stakeholders on programmatic quality	Develop a tracer study to monitor graduate performance

B. Pillars of Reforms in Romanian Tertiary Education

Through the aforementioned enabling conditions, the sector will have the tools to help to support advancements in areas vital to tertiary education attainment, quality, and engagement. These areas of particular relevance for the sectors are understood as the 'pillars' that can support advancement across the tertiary education sector.

Tertiary Education Attainment

- Establish clear routes from vocational and other secondary education into tertiary education;
- Complement merit-based fee waiver with a program of needbased grants program;
- Implement a student loan program;
- Encourage outreach to students from underrepresented groups and to nontraditional learners, including adults;
- Increase the transparency of information and provide guidance on educational opportunities and outcomes to inform study choices and reduce drop-out.

Adaptive, Relevant and High-Quality Programs

- Revise program accreditation regulation;
- Expand capacity for curriculum redesign;
- Develop an ongoing curricular assessment for transversal skills and entrepreneurship;
- Develop a tracer study to monitor graduate performance;
- Enhance the ICT offerings to complement existing offerings;
- Analyze the possibility of extending dual training at the level of technical tertiary education.

Strategic Engagement with the Economy

- Develop a national programme that promotes dynamic and continued dialogue between the education and business sectors;
- Establish an Industry Liaison function at each institution;
- Involve employers in the design and delivery of programmes, supporting staff exchanges and including practical experience in courses.

As with the enabling conditions there are a few key characteristics that define the pillars upon which the success of the Romanian tertiary education sector will depend:

i. **In the midst of a major demographic shift and the target set in accordance with the European Union of having 26.7% of the population between 30-34 years old with completed tertiary education by 2020, Romania will need to improve its tertiary education attainment rate, both among traditional and non-traditional aged learners.** A high-performing tertiary education sector creates and enhances human capital by expanding participation and facilitates the transfer and progression of students through all levels of the education system, especially from secondary to tertiary and on through life-long learning.

ii. **For institutions to respond to and anticipate the demands of the labor market as well as standards for academic quality, they will need to be constantly developing new curricula which can provide students with ever-changing mixes of disciplinary competencies and transversal skills.** This in turn will raise the value of higher education, thus stimulating demand. A high-performing tertiary education sector:

- equips graduates with both essential transversal skills and a comprehensive understanding of their selected disciplines;
- Assures all programmatic offerings maintain a level of quality consistent with the expectations of key stakeholders.

iii. **The relationship between enterprise and education will be strengthened and deepened at all levels.** Universities can play a key role in helping businesses become more competitive by increasing their receptor capacity for knowledge and skills, but they also need to listen more attentively to what businesses are saying about graduates, competencies among potential new hires, and skills. A high-performing tertiary education sector captures employer feedback to inform program design, institutional priorities, and national policies; connects with industry and society to stimulate economic and social development.

Pillar 1: Committing the Sector to Improved Attainment in all Areas

As is the case globally, there is a strong correlation between socio-economic status and those who enroll in and graduate from tertiary education. More than 50 percent of the richest quintile of Romania's youth (25-29 year olds in 2009) holds a tertiary degree, whereas in the poorest quintile the rate of tertiary completion is 3.8%. While there has been noted improvement between 2002 and 2009, students from poor and rural households continue to lag substantially behind their more affluent and urban peers. The challenges for under-represented groups span from admission through persistence to completion of tertiary education, so attention and engagement must occur at every point in the tertiary education timeline.

Under-representation of lower income students in the population of tertiary education graduates exposes the pervasive challenge that exists from lower admission rates to higher drop-out rates among poorer students. In November 2013, the World Bank commissioned research into the causes of discontinuation in Romanian higher education. The project involved a series of interviews with former students who had dropped out of school without completing a degree in Bucharest, Cluj and Suceava. Among the most common causes for early departure from tertiary studies were financial concerns, poor relations with faculty and improper balance between required and optional courses. Possible solutions to these problems could be achieved by strengthening curricular reforms, education funding and improving social conditions for the population from disadvantaged areas/groups.

The significant gap between urban and rural participation in tertiary education in Romania can be explained by various factors. The wide gulf in social and cultural capital between rural and urban youth is reflected in the participation gap—not just in tertiary education but in upper secondary as well—reducing the pool of students that are 'eligible' to continue through tertiary education. Indeed, only 37 percent of 19-21 year olds coming from rural households have completed a secondary school degree, compared to 68 percent of their peers in urban households.[11] Moreover, rural students wishing to go on to upper secondary education are often forced to move from home to attend an urban school and face prohibitively high living costs.[12]

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[11] ibid

[12] World Bank education note (2007).

The gaps in tertiary education attainment between rural and urban communities reflected in the World Bank, Household Budget Survey 2014 show that only 7.1 percent of 25-29 years olds in rural communities had completed tertiary education in 2009, while the rate for the same age group in urban environments was 33.4 percent. This is likely due to migration patterns that are two-fold: universities tend to cluster in urban areas, bringing future young workers to urban centers; and industry tends to cluster where the human and infrastructure capital are most dense, which is in the urban centers. Together, these forces remove the most educated people from rural environments and make it increasingly difficult for rural areas to attract the most educated back to their communities.

Among Roma, achievement of tertiary education among those aged 30-34 is about 1%, compared to over 20% in the general population.[13] Though exact estimates vary, it is thought that less than one percent of Roma children progress through to completion of tertiary education in Romania.[14] As is the case with the exclusion among students from rural and lower socio-economic status youth noted above, the underlying issue lies in access and success rates in primary and secondary education. Indeed, fewer than 1 in 10 Roma children complete secondary school. Currently, policies aimed at expanding access to Roma students at the tertiary level include setting aside reserved places at each university.[15] While these are welcome and could indeed be expanded upon, the most substantial barriers for Roma youth clearly exist at the primary and secondary levels, where urgent action is required. A recent study shows that from 1998 to 2012, the share of Roma women with tertiary education more than doubled, from 0.7% to 1.6%, and in case of Roma men it has remained stable at around 1%.[16]

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[13] Diagnostic and policy advice for supporting Roma inclusion in Romania, World Bank 2014. INS, 2014

[14] World Bank (2011). Functional Review: Higher Education Sector (Romania) , retrieved on November, 19th, http://bit.ly/1lEr7NE

[15] See: http://www.anr.gov.ro/html/Politici_Publice.html.

[16] Duminică and Ivasiuc 2013

„The National Roma Integration Strategy 2015-2020" explicitly notes two objectives related to the education of disadvantaged and, more specifically, Roma students.

- Ensuring equal, free and universal access of Romanian citizens belonging to Roma minority to quality education at all levels in the public education system, to support economic growth and the development of the knowledge-based society; and
- Promoting inclusive education in the education system, including by preventing and eliminating segregation and by fighting against discrimination on grounds of ethnicity, social status, disabilities or any other criteria which affects the children and the young people belonging to disadvantaged groups, including the Roma people.[17]

Particularly among populations which have traditionally not attended tertiary education, improving primary secondary education and improving post-secondary options may not be enough. International experience shows that a number of other policy initiatives are required, including those which target financial assistance, socio-cultural barriers, disability, and gender considerations. The EC position paper on the development of a Partnership Agreement in Romania points out the importance of taking into account a number of social sectors at risk, including the high share of the population in poverty, the increasing number of elderly people, the Roma minority, and people living in the rural areas.[18]

The declining birth rate and the revised baccalaureate exam have also affected enrollments. Through most of the 2000s, roughly 80% of secondary graduates were able to successfully pass their baccalaureate examinations, which entitled them to attend tertiary education. Following a revision to the exam in 2011 and the adoption of more stringent anti-cheating procedures, the baccalaureate pass rate fell to 62.6% in 2014. In combination with a declining entry cohort, these stricter enrollment criteria have the potential to exacerbate diminishing enrollment levels, at least from the traditional tertiary education cohort (Table 3). Ensuring capable students—across all post-secondary age cohorts—have reasonable access to tertiary education must be a national priority, to ensure reasonable enrollment levels.

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[17] Strategy of the Government of Romania for the Inclusion of the Romanian Citizens belonging to Roma Minority for the period 2012-2050. Retrieved 1 Apr 2014 from tp://bit.ly/Pshsfe

[18] EC Position…, ibid: pp. 5, 6, 22.

Table 3. Number of students enrolled in the first year of university studies - evolution for 2007 – 2014

Academic year	Total Bachelor (public + private)	Public (Bachelor, year 1)	Public (Bachelor, year 1) out of which		Private (Bachelor, year 1)	Total Master (public, year 1)	Total PhD (public, year 1)
			budget	tuition			
2013/2014	128,992	106,741	62,264	44,477	22,251	50,923	4,619
2012/2013	131,861	103,816	60,865	42,951	28,045	52,931	3,828
2011/2012	142,348	110,577	61,903	48,674	31,771	53,094	4,148
2010/2011	175,016	125,987	62,277	63,710	49,029	61,936	5,962
2009/2010	210,605	149,155	61,887	87,268	61,450	73,419	6,843
2008/2009	278,655	151,163	61,493	89,670	127,492	66,725	6,798
2007/2008	285,684	141,415	56,455	84,960	144,269	54,308	5,998

Source: National Institute for Statistics, for data related to private tertiary education (reporting for the beginning of the academic year); CNFIS, for data related to public tertiary education (based on reports prepared by the universities, with reference date 1st of January of each academic year, updated in January 2014 and 2015).

Programs in the social sciences have led the sector's rapid growth, while enrollments in engineering and science-related fields have declined in relative (though not absolute) terms.[19] Since 2000, 63% of the new university places added in Romania have been in social sciences, business, and law. This shift has been led by the booming private higher education sector, which has specialized in these fields and the humanities.

As a result of this growth in "soft" disciplines, Romania currently has the highest proportion of graduates in the social sciences of anywhere in the EU. In 2008, 72% graduated with degrees in "soft" disciplines, with 58% of Romania's graduates receiving degrees in the social sciences. By contrast, only 24% received diplomas in the "hard" sciences (engineering, medicine, physics, chemistry, and the like)[20]. Given that the best-performing sectors of the Romanian economy are largely engineering-

[19] World Bank. 2011). Functional Review: Higher Education Sector (Romania). Retrieved 19 Nov 2013 from http://bit.ly/1eeDrfW.

[20] ibid

related, it does raise questions of how well-aligned the academic curricula of the tertiary sector are with current and emerging labor market needs.

An examination of student enrollment patterns in academic programs expose gender equity challenges. When considering the share of tertiary graduates by areas of study, women made up more than 85 percent of 'education' graduates and more than 60 percent of "health", "humanities and arts", and "social sciences, business, and law" in 2010. Females also comprised more than 50 percent of "science" graduates, however. Males accounted for over half the number of graduates in "services, "agriculture", and "engineering, manufacturing, and construction".[21] From a participation perspective, the gross tertiary enrollment in Romania, expressed as a percentage of the relevant age group, for females is 68 percent and 50 percent for males. For the region of Europe and Central Asia, the same percentages are 66 and 54, respectively.[22]

The investments in higher education infrastructure will enhance universities' abilities to anticipate and respond to market requirements related to standards and academic quality, to develop new programs, benefiting from modern technology and equipment, in order to allow students to acquire cross-disciplinary skills.

Moreover, **special attention should be paid to the students' learning conditions, by ensuring an appropriate quality level, aimed at improving the access and participation of disadvantaged people in the higher education system and their results at this level of education,** particularly for non-traditional students, those who come from rural areas, but also for Roma people and other disadvantaged groups, as well as measures to align higher education to labor market needs.

[21] 2010 Data from GenderStats (downloaded September 10, 2013), UNECE, Inter-Parliamentary Union (as of September 1, 2013), and the central statistics office of Romania.

[22] ibid

Strategic Directions	
Objective	**Measure / Action**
Facilitate the transfer and progression of students through all levels of the education system, especially from secondary to tertiary and on through life-long learning	Establish clear routes from vocational and other secondary education into tertiary education
Address the obstacles that prevent or hinder prospective and current students from completing their educational goals	Complement merit-based fee waivers with a program of need-based grants and a student loan program
Create and enhance human capital by expanding participation	Encourage outreach to students from underrepresented groups and to nontraditional learners, including adults
Enable students to make informed decisions about their tertiary education pursuits	Increase the transparency of information and provide guidance on educational opportunities and outcomes to inform study choices and reduce drop-out
Increasing access and participation in higher education, including for persons from disadvantaged groups and non-traditional students	Development and modernization of the infrastructure and relevant resources of HEIs, including learning spaces, considering the economic development trends in respect to market requirements

Activities under Pillar 1

- **Development of clear progression routes from vocational and other secondary education types into tertiary education**

Creating multiple pathways from secondary education to career and technical education and on through to higher education can play a key role in increasing attainment, especially for traditionally under-served students from vulnerable groups. A student who does not pursue secondary education with the intent of enrolling in higher education should not be excluded from the possibility later to advance their studies. Romania's education system will evolve to ensure that it does not 'track' students into limited opportunities. Multiple entry and exit points to the educational pipeline offer students more options and greater flexibility.

- **Strengthen the education pipeline**

According to studies, many students are not adequately prepared for tertiary education, particularly students from vulnerable groups. To address these concerns, all education sectors must share their strategic goals and operational programs with each other to understand ways in which they can align expectations and mutually support one another (e.g., revisions to the teacher preparation curriculum).

- **Improving the scholarship system, by increasing the number of needs-based social grants**

Improving allocation of scholarships by increasing the number of the needs-based social grants will support the system in becoming more efficient and more effective, especially for students from disadvantaged/vulnerable groups. This change should be done by a national agency, being a core element of a general review of the tertiary education.

- **Launching a student loan program**

As noted in the World Bank feasibility study on the potential for student loans in Romania[23], there is no need to wait for the creation of need-based grants to proceed with setting up a student loan program. There are already students who pay tuition fees and are in need of assistance. The key element here is working out how risk can best be mitigated and whether or not private funds can be mobilized for loan origination through a government guarantee.
In designing the loan program, three important factors will be considered:

- To link the introduction of student loans to a larger reform of aid in which more grant-based assistance flows to students in need. The idea that not just loans but grants are on the way to support the truly needy will be a necessary part of the communications strategy.
- Introduction of a loan scheme called “grant for studies”.
- Raising awareness of the fact that student loan scheme will not be able to fully solve the dropout problem or improve access.

[23] World Bank. (2009). Introducing a Student Loan Scheme in Romania. Retrieved 1 Apr 2014 from http://bit.ly/1lsafqM

- **Encourage outreach to students from under-represented groups and to nontraditional learners, including adults by:**
  - Development of institutional outreach strategies for under-represented groups;
  - National government to incentivize recruitment strategy and retention of under-represented groups by providing financial incentives for doing so;
  - Similarly, institutions can be encouraged to perform outreach and shift enrollment balances at a field-of-study level through financial incentives for meeting or exceeding certain enrollment thresholds.

Pillar 2: Promoting the Establishment of High Quality, Adaptive Academic Programs

Quality assurance (QA) mechanisms in Romania are aligned with European standards and consists in a two-step process: internal and external quality assurance. Quality assurance in higher education and university research is the responsibility of the higher education institution and a fundamental task of the Ministry of Education and Scientific Research. To perform this task, MESR collaborates with ARACIS, an independent body, and with other institutions subordinated to the Ministry.

External quality assurance is, according to the law, ensured by ARACIS or by other external quality assurance agencies that are listed in EQAR. ARACIS also has the role of providing accurate and accessible information to the public about the quality of an institution or program, which can be of help for students in making decisions about their professional / educational path. This requires institutional data transparency and the existence of other structures that collect and report this data in an accurate and unitary manner. To meet real qualification demands from the labor market, ARACIS updates the assessment standards.

The National Authority for Qualifications (NAQ) analyzes and ensures a correlation between university programs and the skills and qualifications acquired in line with the diplomas issued. NAQ manages the National Register of Qualifications in Higher Education (RNCIS), as part of the National Register of Qualifications (RNC), a tool that sets the qualifications structure, ensures international compatibility and comparability and endorses the introduction of a labor market qualification, in line with the European framework of qualifications. NAQ`s role is to harmonize the higher education qualifications with the market demands. The measures in this Strategy will support universities in designing their curricula starting from the professional skills

requested by the labor market, in introducing new qualifications in RNCIS, and new university/post-university programs corresponding to those qualifications.

Strengthening the capacity of universities to design and provide market-relevant programs – with special focus on ensuring cross-cutting skills (including ICT), but also on developing those skills needed in economic sectors with competitive potential, identified according to SNC (the automotive industry, ICT, food and beverage processing, health and pharma products, tourism and agri-tourism, clothes/leather manufacturing, timber and furniture, creative industries, energy and environmental management, bio-economy (agriculture, forestry, fisheries and aquaculture, bio-pharmaceutics and bio-technologies) and intelligent fields, in line with SNCDI (bio-economy, ICT, space and security, energy, environment and climate change, eco-nanotechnologies, advanced materials and health).

Among the key data points which should be available to students about each program are completion rates, employment rates, and if possible post-graduate incomes. This requires a more regular and extensive pattern of graduate employment surveys or the data on tertiary graduates can be linked with data from other administrative systems to electronically match graduates' employment status, salary, and relevant indicators. To further inform student choice and institutional planning, an on-going advisory group consisting of key labor market and tertiary education representatives should be convened periodically to publicize midrange (i.e., five to seven years) labor forecasts and discuss the potential impact on tertiary education's programmatic offerings and capacity.

The training market currently offers many opportunities for higher education institutions. The universities have the infrastructure and highly skilled human resources, needed to meet the continuous education and development standards imposed by employers. Through the National Strategy for Lifelong Learning, MESR shall promote measures to increase the involvement of higher education institutions in lifelong learning.

Updating/upgrading the MESR / ARACIS regulations is another area that could generate benefits for flexible learning methods, including reduced attendance education, distance education and internships. The acknowledgement of various learning methods shall change the manner in which people see tertiary education, which should adjust to the new challenges, especially by ensuring system flexibility. An example in this respect could be the promotion of e-learning and blended-learning systems.

MESR and the GoR are committed to develop e-learning solutions and will explore how best to act as quickly as possible to alter regulation in this area to permit institutions to grow in scale and reap the broad benefits to both access and opportunity afforded by modern delivery options.

Finally, quality assurance for tertiary instruction and research depends greatly on improving the training and experiential learning of doctoral students and post-doctoral staff. One of the most important links on human resource for HEIs are doctoral students and postdoctoral researchers. This is not only because they are future professors who will be in charge of the future teaching of undergraduates; it is also because they are among the most productive and innovative researchers and as such can play a significant role both in increasing the effectiveness of public R&D expenditures and in promoting greater technology transfer to the private sector.

Strategic Directions	
Objective	**Measure / Action**
Equip graduates with both essential transversal and professional skills, especially in economic sectors with competitive potential and in the intelligent fields	Revise curriculum and develop assessment for transversal skills and entrepreneurship
Adapt programs and curriculums to reflect advances in methodology and technology	Enhance the ICT offerings to complement existing offerings
Promote improved teacher quality at all levels of the sector, especially in economic sectors with competitive potential and in the intelligent fields	Provide teacher training opportunities for PhD students; support professional development throughout the careers of academic staff

Provide a diverse array of programs to meet labor market and student demand	Introduce study programs for non - university tertiary education; Update the national system for external quality assurance by substantiating the programs on the labor market needs assessment, for the tertiary and non-tertiary education; Design academic curricula based on professional skills required on the labor market, the introduction of new qualifications in RNCIS, new programs for undergraduate / postgraduate studies, pertaining to such qualifications.

Activities under Pillar 2:

- **Revision of Ministry and ARACIS Rules Governing Accreditation of Programs**

The rules currently in place regarding program accreditation are not perceived by academic staff and institutional leadership as fostering or contributing to curricular innovation. These regulations on quality assurance in higher education, as well as in technical and vocational education, will constantly be reviewed, as to see how they can become more flexible and oriented towards the outputs / impact on the labor market.

- **Assuring compatibility between CNATDCU and ARACIS domains**

At the moment, each of these two important entities in higher education is operating with different sets of fields or with different titles for the same domain. This causes undue difficulties in reporting and could generate confusion among the final recipients of the information.

- **Expanding Capacity in Curriculum Design**

While greater freedom from centralized rule-making is important, champions of reform at the institutional level are imperative, requiring greater emphasis on strong curriculum design at the faculty and departmental level. Several things can be done to integrate the transversal skills as basic elements of the curricula, and HEIs will support the curricular innovations, will promote good practices, etc.

- **ARACIS will develop a plan to assess the national state of curricular innovation in institutions with respect to transversal skills and entrepreneurship, so that progress between 2015 and 2020 can be monitored.**
- **Development of financial incentives (i.e. prizes) to institutions judged to have developed new programs of exceptional promise in terms of developing transversal and entrepreneurial skills.**

Financial incentives will be provided to institutions to improve the integration of transversal and entrepreneurial skills into the curriculum. This kind of competition will be judged by quantitative and qualitative means and national / international expert inputs will be sought during the judging process to ensure transparency.

- **Financial Support to ICT Programs**

Another key strategic contribution on the part of the government of Romania will be improving the IT infrastructure that will enable the delivery of distance learning programs. This measure will lead to the revision of distance and part-time learning regulations, and will make the educational programs more attractive. Following the revision of regulations for the 2015-2016 academic year, calls for accessing funds in view of improving the ICT infrastructure are expected.

Pillar 3: Promoting Strategic Engagement with Economy

Tertiary education institutions cooperate with their communities, including their local employers. A significant part of tertiary education institutions' contribution to economic growth is simply one of general formation – of developing human capital in a general sense and providing them with lifelong, transversal skills which will help them regardless of industry or occupation. The ability to provide graduates with more tailored and specific competencies relevant to the emerging opportunities from businesses in their own community necessarily gives that community and its industry a key industrial edge. For this to happen, however, tertiary education and industry must have much deeper knowledge of each other's needs and capabilities than exists at present.

To promote greater utility from doctoral students and postdoctoral academic staff, PhD training must include a major emphasis on the skills needed by the private sector and a promotion of internships, allowing those individuals to move back and forth between companies and universities. From an innovation standpoint this is crucial: PhDs and postdocs in science and technology contribute far more to innovation when they are engaging with the real problems facing industry than if they are solely engaged in academic research.

It is the binding together of tertiary education and business which makes possible faster rates of technology transfer and the leveraging private sector investments.

There are two major challenges which higher education institutions in Romania currently face with respect to attracting and retaining doctoral and postdoctoral students in high-quality programs: money and institution-private sector engagements. Having enough money to retain talented doctoral students and postdocs is a significant current problem for Romania; many of them leave academia for studies abroad or for the domestic private sector because salaries are not very competitive. Further, being able to develop the kinds of partnerships with private businesses that will create the kinds of opportunities for these young researchers to develop both as academic specialists and as experts able to assist industry is imperative for driving research and innovation relevant to the Romanian economy.

The notion of this "knowledge triangle" –education, research, and innovation— is central in the European Commission's Education and Training 2020 strategy (ET2020),[24] and is further promoted in the Joint Progress report towards ET2020[25]. The European Council established that education and training are prerequisites for a well-functioning knowledge triangle and are vital for boosting growth and jobs. The conclusions of the Council and the Representatives of the Governments of the Member States on developing the role of education in a fully-functioning knowledge triangle[26] establishes seven priorities for action including: pedagogical reform, partnerships with business, and develop an innovation culture within HEIs, and new approaches to quality assessment.

Systems will be established to collect and assess the extensive feedback between institutions and firms. Such communication is vital to both industry and education institutions. Employers inform universities about the quantity and quality of their

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[24] Education and Training 2020" (ET 2020) is strategic framework for European cooperation in education and training that builds on its predecessor, the "Education and Training 2010" (ET 2010) work programme. It provides common strategic objectives for Member States, including a set of principles for achieving these objectives, as well as common working methods with priority areas for each periodic work cycle. Retrieved 12 Jan 2014 from http://europa.eu/legislation_summaries/education_training_youth/ general framework/ ef0016_en.htm

[25] Ibid, March 2007

[26] Conclusions of the Council and of the Representatives of the Governments of the Member States, meeting within the Council, of 26 November 2009 on developing the role of education in a fully-functioning knowledge triangle. Retrieved 26 Nov 2013 from http://bit.ly/1IsaxOv

graduates; while tertiary institutions can provide key feedback to employers, to underscore the opportunities for industry related to the deployment of various types of knowledge and specific skills.

The Joint Progress Report on the ET2020[27] also stresses the importance of partnerships not just with businesses but also with other stakeholders. Among the priorities set out in the Report for the second working cycle of the ET2020 includes the importance of developing effective and innovative forms of networking, cooperation and partnership between education and training providers and a broad range of stakeholders including, social partners, businesses, research institutions and civil society.

Key internationalization initiatives must also be implemented to ensure the relevance and competitiveness of the tertiary sector as a driver of knowledge and innovation. MESR is committed to developing the key areas for a comprehensive internationalization strategy identified by the European Commission[28]:

- Promoting the international mobility of students and staff;
- Promoting internationalization at home and via digital learning; and
- Strengthening strategic cooperation, partnerships and capacity building.

Moreover two additional policy objectives related to the EU's internationalization agenda and to which Romanian tertiary education is committed to contributing include:

- Increasing the attractiveness of European HE by improving quality and transparency; and
- Increasing worldwide cooperation for innovation and development.[29]

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[27] 2012 Joint Progress of the Council and the Commission on the implementation of the Strategic Framework ET2020. (2012/C 70/05) Retrieved 1 Apr 2014 from http://bit.ly/1lErJDa, (p. 17).

[28] Communication from The Commission to the European Parliament, The Council, The European Economic and Social Committee and the Committee of the Regions Supporting Growth and Jobs – An Agenda for the Modernisation of Europe's Higher Education Systems. Retrieved 1 Apr 2014 from http://bit.ly/1sdSnnF

[29] ibid

Strategic Directions	
Objective	**Measure / Action**
Gather industry feedback to inform institutional priorities and national policies	Develop a national programme that promotes dynamic and continued dialogue between the education and business sectors
Connect with industry and society to stimulate economic and social development	Establish an Industry Liaison function at each institution; Develop and implement training programs in partnership - including the creation and implementation of on-the-job learning programs
Prepare the workforce to drive and support national and regional economic growth	Involve employers in the design and delivery of programmes, supporting staff exchanges and including practical experience in courses.

Activities under Pillar 3

- **Development of a national research for innovation and entrepreneurship programme, to encourage dialogue between the education and business sectors**

The research agenda in Romania, while substantial, remains largely driven by academic curiosity rather than innovation and technological transfer. Collectively, stakeholders must collaborate more effectively to align within a coordinated research and development agenda that builds upon existing strengths and address areas for improvement, especially as related to the coordinated development of the new Research and Innovation Strategy (e.g., including for a framework of intellectual property ownership, commercialization process, etc.). MESR will consult widely with the university and private sectors to create a national programme on increasing university-industry collaboration. Priority considerations include:

I. **Eliminating the barriers to collaboration with domestic and foreign enterprises**

   What are the key factors preventing Romanian enterprises from making fuller use of scientific knowledge in their production? What can be done through partnerships to reduce these barriers?

II. **Rewarding institutional success**

What means can be used to measure institutional success in promoting university-industry linkages? What kind of incentives can be developed to encourage these linkages

III. **Promoting mobility of qualified personnel**

Are there ways to place more qualified personnel in industry for short-term assignments to increase technical expertise in firms and expand understanding of firm needs in institutions?

IV. **The role of tax incentives**

Are there ways that the tax system can be used to expand co-operation between institutions and firms?

- **Establishment of Industry Liaison specialists at each institution; universities and other post-secondary institutions develop plans for outreach to community businesses**

Starting with 2014, the establishment and organization of Centers for career counseling and guidance in all institutions of higher education was regulated. These centers will have units for the analysis and forecasting management of the labor market demands. To the same end, that of facilitating the correlation between the education system and the labor market, it will be possible to create, in universities, consultative structures that involve representatives of the economic, academic, cultural and external professional environments.

As part of the development of a national data framework, a survey of employers is to be developed and put into the field as soon as possible to better gauge performance in terms of providing students with employability skills and technology transfer. The goal will be to utilize this and related instruments within a fully realized labor market observatory, which will provide constant and up-to-date assessments and data on the employment environment and labor market.

- **Involvement of industry/employers in the design and delivery of programmes, supporting staff exchanges and including practical experience in courses** could emerge from the surveys described above.
- **Both students and employers argue for a revision of qualifications and curricula, adjusting the skills to the standards required by employers, establishing functional internship systems, internship programs and upgrading** resources (ex. Information systems).

This Strategy substantiates the development / review of the public policies from this field, by consultations with all external stakeholders and considering the above-mentioned issues.

- **Utilization of Master's programs to promote industry-specific research and skills development.**

Master's degree programs are especially useful tools for targeting practical, skill-driven learning as relevant to the labor market, bridging the soft skills best provided via a broad first-degree and the on-the-job training specific to any particular firm.

Universities will be supported in identifying their competitive advantage areas for improving upon or developing new Master's programs that are more relevant to their immediate, regional and national labor markets.

Annex - Cost estimates of the National Strategy for Tertiary Education 2015-2020

Indicative	Objective	Number of beneficiaries	Total estimated cost - mil	State Budget - mil
Pillar 1: Committing the Sector to Improved Attainment in all Areas		**518,027**	**811.14**	**523.71**
P1.1	Facilitate the transfer and progression of students through all levels of the education system, especially from secondary to tertiary and on through life-long learning	42,800	72.45	65
P1.2	Address the obstacles that prevent the prospective and current students from completing their educational goals	385,977	359.29	359.29
P1.3	Develop specialized human capital by increasing participation in tertiary education	9,250	99.13	14.88
P1.4	Counseling young people to make informed decisions about their tertiary education pursuits	30,000	30.27	4.54
P1.5	Increasing access and participation of disadvantaged people in higher education, particularly for non-traditional students	50,000	250.00	80
Pillar 2: Promoting the Establishment of High Quality, Adaptive Academic Programs		**80,450**	**135.63**	**19.90**
P2.1	Equip graduates with both essential transversal skills and a comprehensive understanding of their selected disciplines	10,000	43.68	6.10
P2.2	Adapt programs and curriculums to reflect advances in methodology and technology	-	6.45	0.97
P2.3	Promote improved teacher quality at all levels of the sector	38,000	49.46	7.42
P2.4	Provide a diverse array of programs to meet labor market and student demand	32,450	36.04	5.41

Indicative	Objective	Number of beneficiaries	Total estimated cost - mil	State Budget - mil
Pillar 3: Promoting Strategic Engagement with Economy		**27,023**	**73.36**	**11.01**
P3.1	Gather industry feedback to inform institutional priorities and national policies	-	15.43	2.31
P3.2	Connect with industry and society to stimulate economic and social development	-	12.00	1.80
P3.3	Prepare the workforce to drive and support national and regional economic growth	27,023	45.93	6.90
TOTAL		**625,500**	**1,020.13**	**554.62**
Enabling Condition 1: Assuring Adequate and Efficient Funding			**1,075.44**	**1,075.44**
EC1.1	Provide sufficient funding to support high quality, relevant, efficient universities		992.64	992.64
EC1.2	Allocate funding in the context of institutional performance towards policy objectives and desired outcomes		82.80	82.80
Enabling Condition 2: Promoting Effective Governance			**2.04**	**2.04**
EC2.1	Engage stakeholders in the process of identifying and pursuing strategic objectives for the sector		0.00	0.00
EC2.2	Match level of operational autonomy with accountability for performance against well-defined expectations		1.02	1.02
EC2.3	Make relevant student and employer data public to inform selection		1.02	1.02
Enabling Condition 3: Utilizing Data Monitoring and Evaluation for Evidence-based Policymaking			**6.14**	**6.14**
EC3.4	Provide transparency to key stakeholders on programmatic quality		6.14	6.14
TOTAL			**1,083.62**	**1,083.62**
GRAND TOTAL		**625,000**	**2,103.75**	**1,638.24**